February 14, 2024

Sarah T. Esterson
Energy Facility Siting Office
Oregon Department of Energy
550 Capitol St. NE, 1st Floor
Salem, OR 97301-3742

Re: Leaning Juniper IIA Request for Amendment No. 3

Dear Ms. Esterson:

Leaning Juniper Wind Power II, LLC (Leaning Juniper II), a wholly owned subsidiary of Avangrid Renewables (Avangrid), is seeking a third amendment to the Leaning Juniper IIA Wind Power Facility (Facility) Site Certificate to repower the operating Facility with newer turbine technologies that more efficiently generate electricity from wind. Overall, the proposed changes in Request for Amendment No. 3 (RFA3) are consistent with the Facility as approved in the Site Certificate, as amended, and are not anticipated to result in significant adverse impacts to resources protected by Energy Facility Siting Council (EFSC) standards. However, the proposed changes trigger an amendment to the Site Certificate because the changes will require modifications to the Site Certificate findings and conditions of approval.

Changes proposed in RFA3 include:

- Change No. 1: Replace the existing turbine rotors (nose cone, hub, and blades) on 36 of the 43 existing turbines, increasing the rotor diameter from 88 meters (289 feet) to up to 129 meters (429 feet).
- Change No. 2: Replace the nacelle and its interior elements (gearbox, oil cooler, drive shaft, pitch drive) on 36 of the 43 existing turbines. The replaced nacelles will be mounted on existing turbine towers.
- Change No. 3: Replace existing 2.1-MW turbine generators with up to 2.5-MW turbine generators on 36 of the 43 existing turbines.
- Change No. 4: Reinforce turbine foundations with upgraded collars and remove and replace existing pad-mounted transformers and pads within existing turbine footprint.
- Change No. 5: Install a new 34.5-kV collector line system within existing micrositing corridors.
- Change No. 6: Decommission two turbines, reducing the number of operating turbines to 40 turbines. Of the 40 turbines, 36 will be repowered as part of RFA3; no changes are proposed to four of the original Suzlon turbines

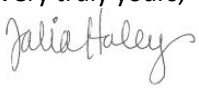
ODOE has confirmed that RFA3 will be subject to a Type A review process.

The changes proposed in RFA3 will occur within the previously approved site boundary and micrositing corridor, in an area Leaning Juniper II has designated the “repower corridor.” Specific

changes sought in RFA3 are: (1) reduce minimum ground clearance of turbine blades from 30 meters to 21 meters; (2) install a second 34.5-kV collector line system within existing micrositing corridor (one collector line system was previously approved); and (3) update retirement costs.

Thank you for your time and work on this project. Please feel free to contact me at talia.haley@avangrid.com or (619) 509-0125 with questions.

Very truly yours,



Talia Haley
Senior Permitting Manager

cc: Tyler Hoffbuhr, Senior Business Developer, Avangrid Renewables
Marcy Patrick, Permit Manager, Avangrid Renewables
Elaine Albrich, Partner, Davis Wright Tremaine LLP

Enclosures:

1 – Leaning Juniper IIA Wind Power Facility Final RFA3 application package (combined PDF)
2 – RFA3 Property Owner List (Excel file)
3 – Site Boundary Area Subject to RFA3 (GIS Shapefile package)
4 – Protected Areas Agency Mailing Address (Excel file)

Request for Amendment No. 3 to the Site Certificate for the Leaning Juniper IIA Wind Power Facility

Prepared for:
Oregon Energy Facility Siting Council

Project name:
Leaning Juniper IIA Repowering Project

Date:
February 14, 2024

Avangrid A member of the Iberdrola Group

Jacobs

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13 Draft Habitat Mitigation Plan
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15 Washington Ground Squirrel Incidental Take Permit [Provided under separate confidential cover]
16 Second 2023 Cultural Resources Survey Report [Provided under separate confidential cover]
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Acronyms and Abbreviations

AVA	American Viticulture Area
BLM	Bureau of Land Management
BPA	Bonneville Power Administration
Certificate Holder	Leaning Juniper Wind Power II, LLC
City	City of Arlington
Council	(Oregon) Energy Facility Siting Council
DEQ	Oregon Department of Environmental Quality
DOGAMI	Oregon Department of Geology and Mineral Industries
DSL	Oregon Department of State Lands
EFSC	(Oregon) Energy Facility Siting Council
Facility	Leaning Juniper IIA Wind Power Facility
GCCP	Gilliam County Comprehensive Plan
GCZO	Gilliam County Zoning Ordinance
HMA	Habitat Mitigation Area
I-84	Interstate 84
ITP	Incidental Take Permit
kV	kilovolt
LJIIA	Leaning Juniper IIA
LLC	limited liability company
m	meter(s)
MW	megawatt(s)
N/A	not applicable
n.d.	no date
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
OPRD	Oregon Parks and Recreation Department
OR 19	Oregon State Highway 19
ORS	Oregon Revised Statute
RFA	Request for Amendment

RFA2	*Request for Amendment No. 2 to the Site Certificate for the Leaning Juniper II Wind Power Facility*
RFA3	*Request for Amendment No. 3 to the Site Certificate for the Leaning Juniper II Wind Power Facility*
Site Certificate	*Second Amended Site Certificate for the Leaning Juniper II Wind Power Facility*
USGS	U.S. Geological Survey
WGS	Washington ground squirrel
ZVI	zone of visual influence

1. Introduction

The Leaning Juniper IIA (LJIIA) Wind Power Facility (Facility) is an operational wind power facility with 43 turbines and a maximum generating capacity of 90.3 megawatts (MW).[1] The Facility is located within a site boundary of approximately 6,404 acres in Gilliam County, Oregon (Figure 1).

Leaning Juniper Wind Power II, LLC (Certificate Holder) is submitting this *Request for Amendment No. 3 to the Site Certificate for the Leaning Juniper IIA Wind Power Facility* (RFA3) to amend the *Second Amended Site Certificate for the Leaning Juniper IIA Wind Power Facility* (Site Certificate) (State of Oregon 2013). The purpose of RFA3 is to repower the operating Facility with newer turbine technologies that more efficiently generate electricity from wind. The changes proposed in this RFA3 do not change the previously approved Facility site boundary or micrositing corridors. The proposed changes will occur in a portion of the micrositing corridor that the Certificate Holder designated as the "repower corridor," which is shown on Figures 2A and 2B.

Elements of this RFA3 are summarized as follows and described in Section 2:

- Change No. 1: Replace the turbine rotors (nose cone, hub, and blades) on 36 of the 43 existing turbines, increasing the rotor diameter from 88 meters (m) (289 feet) to up to 129 meters (429 feet).
- Change No. 2: Replace the turbine nacelle and its interior elements (gearbox, oil cooler, drive shaft, pitch drive) on 36 of the 43 existing turbines. The replaced nacelles will be mounted on existing turbine towers.
- Change No. 3: Replace existing 2.1-MW turbine generators with up to 2.5-MW turbine generators on 36 of the 43 existing turbines.
- Change No. 4: Reinforce turbine foundations with upgraded collars and remove and replace the existing pad-mounted transformers and pads within the existing turbine footprint.
- Change No. 5: Install a new 34.5-kilovolt (kV) collector line system within existing micrositing corridors.
- Change No. 6: Decommission two turbines, reducing the number of operating turbines to 40 turbines. Of the 40 turbines, 36 will be repowered as part of RFA3; no changes are proposed to four of the original Suzlon turbines.[2]

The Facility was previously approved for a combined peak generating capacity of up to 124 MW. With the repowered turbines, the Facility will have a combined peak generating capacity of 98.4 MW and will not exceed the approved peak generating capacity of 124 MW. This RFA3 refers to the proposed changes as the "Repower."

1.1 Changes Requiring an Amendment under OAR 345-027-0350 345-027-0350

Changes Requiring an Amendment under OAR 345-027-0350 345-027-0350

(4) Design, construct, or operate a facility in a manner different from the description in the site certificate, if the proposed change:

[1] Note that the Facility's approved maximum generating capacity is up to 124 MW.

[2] Note that Turbine Z2 was previously decommissioned.

(a) Could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact affects a resource or interest protected by an applicable law or Council standard;

(b) Could impair the certificate holder's ability to comply with a site certificate condition; or

(c) Could require a new condition or a change to a condition in the site certificate.

Response: The Certificate Holder is submitting this RFA3 for Type A amendment review. The proposed changes require an amendment because under the original authorization, the Certificate Holder could not comply with existing Site Certificate conditions for Conditions 16 and 27 and the Facility would have two 34.5-kV collector line systems, when only one system was previously approved.

1.2 Certificate Holder Information – OAR 345-027-0360(1)(a)

OAR 345-027-0360(1)(a) – The name of the Facility, the name and mailing address of the certificate holder, and the name, mailing address, email address and phone number of the individual responsible for submitting the request.

Response:

1.2.1 Name of the Facility

Leaning Juniper IIA Wind Power Facility

1.2.2 Name and Mailing Address of Certificate Holder

Leaning Juniper Wind Power II, LLC
2701 NW Vaughn Street, Suite 300
Portland, OR 97210

1.2.3 Name, Address, and Phone Number of Individual Responsible for Submitting Request

Talia Haley
Avangrid Renewables, LLC
2701 NW Vaughn Street, Suite 300
Portland, OR 97210
Talia.Haley@avangrid.com
619.509.0125

2. Description and Effect of Proposed Change – OAR 345-027-0360(1)(b)(A)

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) or (4), the certificate holder must submit a written preliminary request for amendment to the Department that includes the following:

(b) A detailed description of the proposed change, including:

(A) A description of how the proposed change affects the facility;

Response: The purpose of RFA3 is to repower the Facility with newer technologies that more efficiently generate electricity from wind. By so doing, the Certificate Holder will take advantage of technological advances in wind turbine design to enhance long-term operations. The Certificate Holder will exchange existing turbine blades for longer blades and improve the associated equipment on existing turbine towers. Existing Facility infrastructure will be used to the maximum extent practicable to minimize temporary disturbance. Temporary disturbance will occur within previously approved micrositing corridors in the locations shown in the repower corridor; no new permanent disturbance is anticipated.

2.1 Replace Turbine Rotors

The Certificate Holder proposes to replace the existing turbine rotors (nose cone, hub, and blades) on 36 of the 43 previously approved turbines, increasing the rotor diameter from 88 m (289 feet) to up to 129 m (429 feet). The replaced turbine rotors will continue to comply with the maximum turbine tip height (up to 150 m) and tower hub height (up to 100 m) but will increase each turbine rotor diameter from 88 m to up to 129 m. This change will affect the Facility's ability to meet the Condition 27(e) requirement for a minimum blade clearance of 30 m.

Replacement of the turbine rotors will involve removing and breaking down the existing rotors (cutting up onsite and removing for disposal offsite) and installing the new rotors. The temporary laydown area required to replace the rotors will be contained within the repower corridor. Following installation of the rotors and other related activities and after repower activities are completed, temporary disturbance areas will be regraded and revegetated.

The Certificate Holder requests an amendment to Condition 27(e) to decrease the minimum blade clearance to 21 meters above ground.

Condition 27 The certificate holder shall construct a facility substantially as described in the site certificate and may select turbines of any type, subject to the following restrictions:

** * **

(e) The minimum blade tip clearance must be ~~30~~ 21 meters above ground.

2.2 Replace Turbine Nacelles

The Certificate Holder proposes to replace the nacelle and its interior elements (gearbox, oil cooler, drive shaft, pitch drive) on 36 of the 43 existing turbines. The replaced nacelles will be mounted on existing turbine towers. The replaced nacelles will continue to comply with the previously approved maximum turbine hub height (up to 100 m). The temporary laydown area required to replace the nacelles will be contained within the repower corridor. Following replacement of nacelles and after repower activities are

completed, temporary disturbance areas associated with replacement of nacelles and all other repower activities will be regraded and revegetated.

2.3 Replace Turbine Generators

The Certificate Holder proposes to remove the existing 2.1-MW turbine generators and replace them with up to 2.5-MW turbine generators on 36 of the 43 existing turbines. The peak generating capacity of each turbine will maintain compliance with the previously approved capacity of up to 3 MW (Condition 27(b)). The oil-containing capacity of the existing generators that will be replaced is 4,956 gallons and the new generators' oil capacity will be 4,576 gallons, representing a 380-gallon decrease in oil capacity of the Facility's generators. The Certificate Holder will continue to comply with Condition 94, as discussed further in Section 5.19.

2.4 Reinforce Turbine Foundations

The Certificate Holder proposes to reinforce turbine foundations with upgraded foundation collars within the existing turbine footprint. This process involves excavating the existing fill that was placed around the turbine foundation during the original construction and installing additional rebar and concrete around the foundation (below grade). Excavated material will either be used to backfill the excavation or reused offsite. Dimensions of the foundation collars will be determined through the structural analysis that the Certificate Holder has conducted; the foundation collars are not anticipated to extend beyond the existing belowground pedestal and will not be visible above ground once installed. The area around the turbine foundation reinforcement will be recontoured, revegetated, and returned to current conditions. No new permanent disturbance will result from turbine foundation reinforcement.

2.5 Install New 34.5-kV Collector Line System

The Certificate Holder proposes to install a new 34.5-kV collector line system adjacent to the existing collector lines within the previously approved micrositing corridor. There are approximately 19 miles of existing underground collector lines in the Facility. The new collector lines will be installed within a 50-foot-wide corridor adjacent to the existing collector lines, in a trench approximately 3 feet wide by 4 feet deep that will be regraded and restored following repower activities. The Certificate Holder will decommission the original and new collector line systems upon permanent cessation of Facility operations. The Certificate Holder will continue to comply with Condition 78, requiring that the collector line system be installed underground to the extent possible (at minimum depth of 3 feet) and the total length of aboveground segments will not exceed 30 percent of the collector line system.

2.6 Reduce Number of Operating Turbines

The Certificate Holder proposes to decommission two turbines, reducing the number of operating turbines to 40. The Site Certificate previously approved up to 47 turbines. The Certificate Holder will repower 36 of the remaining 40 turbines as part of RFA3 and four original Suzlon turbines will continue to operate without modification. The Facility will continue to comply with Condition 27(a) and peak generation capacity will increase from 90.3 MW to 98.4 MW, but will not exceed the peak generation capacity limit of 124 MW imposed by Condition 27(a).

Turbines (M3 and Z1) at LJIIA will be decommissioned as part of the Repower. The turbines will be decommissioned to a Facility retirement level of 3 feet below grade, as necessary per decommissioning procedures. Remaining infrastructure could include an aboveground junction box at these

decommissioned turbine locations that may be installed over the existing collector and ground cables to maintain the flow of electrical power from the turbine area to the substation.

The process of decommissioning generally includes the following steps typically performed by the contractor:

1) Complete inspection of existing turbine.
2) Develop Professional Engineer (PE) stamped plan of decommissioning, as approved by Certificate Holder.
3) Obtain necessary permits for decommissioning.
4) Mobilize equipment and personnel to start turbine deconstruction, and construct temporary work areas.
5) Remove turbine components and equipment.
6) Remove nacelle, rotor assembly, and tower sections.
7) Remove and dispose of oil in gearboxes and pendulum.
8) Disconnect medium- and low-voltage cables, fiber optic, and communication cables along with the terminations between down-tower switchgear and up-tower components.
9) Remove switchgear, ground control cabinet, and service lift from turbine to operations and maintenance shop area.
10) Remove base platform, switchgear, and platform to foundation mounting hardware.
11) Install new cable and junction box equipment necessary to restore power and communications to the affected turbines in the string.
12) Reclaim and regrade work areas after turbine removal is complete in accordance with specifications; remove debris from site.

2.7 Summary of Proposed Changes

Table 2-1 summarizes proposed changes to component quantities and dimensions under RFA3 in comparison to approved quantities and dimensions under *Request for Amendment No. 2 to the Site Certificate for the Leaning Juniper II Wind Power Facility* (RFA2).

Table 2-1. Summary of Proposed Changes

Component/Dimension	Approved Quantity or Dimension in RFA2	Existing Quantity or Dimension	RFA3 Proposed Quantity or Dimension
Turbines	47	43	40 (4 original Suzlon and 36 repowered turbines)
Blades and Rotors	Not conditioned	88 meters (289 feet) in diameter	116 meters (381 feet) in diameter
Generators	Up to 3.0 MW	2.1 MW	2.5 MW
Generation Capacity	124 MW	90.3 MW	98.4 MW
Tower Hub Height	100 meters (328 feet)	79 meters (259 feet)	80.1 meters (262.8 feet)

Component/Dimension	Approved Quantity or Dimension in RFA2	Existing Quantity or Dimension	RFA3 Proposed Quantity or Dimension
Total Tip Height	150 meters (492 feet)	123 meters (404 feet)	138.1 meters (453.8 feet)
Minimum Blade Clearance	30 meters (98 feet)	35 meters (115 feet)	21 meters (69 feet)
Turbine Foundation	Not conditioned	Approximately 90 by 100 feet	Approximately 90 by 100 feet No change—foundation reinforcement will be below grade

To summarize, the temporary use of areas will be entirely within the repower corridor and in areas previously disturbed and approved for Facility construction. These areas include temporary laydown areas used to stage and store equipment, and access road improvements, including the necessary turning radius improvements for construction vehicles. Placement of the new and replaced blades, nacelle components, and related equipment will be done in temporary laydown areas at each turbine. Temporarily disturbed areas will be recontoured, revegetated, and restored to current conditions following completion of repowering. The proposed changes will not change how the Facility will be operated. Table 2-2 summarizes the anticipated quantities and dimensions of temporary disturbance associated with the proposed changes.

Table 2-2. Summary of Proposed Disturbance

Component	Existing Footprint		RFA3 Temporary Disturbance	
Turbine Pads	25	feet (radius)	275[a,b]	feet (radius)
Spur Road	15	feet (width)	85[a,c]	feet (width)
String Road	15	feet (width)	85[a,c]	feet (width)
Collector Line	N/A		75[d]	feet (width)
Laydown Areas	N/A		22.8[e]	acres
Crane Paths	N/A		100[f]	feet (width)

[a] Does not include existing permanent footprint that will be utilized during repower activities.

[b] The base of each turbine location includes a temporary work area that will be used for crane operation, support equipment operation, truck movement, breakdown and assembly of turbine equipment, and a safe work area for construction personnel.

[c] Existing project roads will be utilized for construction access, with an increased temporary width in work area required for the crane walks, operation of equipment, and safe work area for construction personnel.

[d] Existing collector lines will be excavated and trenched 3-feet below grade and requires a temporary work area for equipment operation, removal of existing lines, placement of new lines, and a safe work area for construction personnel.

[e] Laydown areas will be used to house construction trailers, hold daily meetings for construction personnel, stage construction materials and supplies, store construction equipment, and parking for construction equipment, construction support vehicles, and construction employees' personal vehicles.

NA = not applicable

2.8 How Proposed Change Affects Protected Resources – OAR 345-027-0360(1)(b)(B)

(B) a description of how the proposed change affects those resources or interests protected by applicable laws and Council standards, and

Response: Section 5 (Compliance with Applicable Council Standards and Other Laws) analyzes how the proposed changes affect resources or interests protected by applicable laws and Council standards.

2.9 Location of the Proposed Change – OAR 345-027-0060(1)(b)(C)

(C) the specific location of the proposed change, and any updated maps and/or geospatial data layers relevant to the proposed change.

Response: This RFA3 proposes no changes to the previously approved Facility site boundary or micrositing corridor. All proposed changes will occur within the previously approved Facility site boundary and micrositing corridor. The location of the proposed changes are limited to the area the Certificate Holder is calling the "repower corridor" within the previously approved site boundary, as shown on Figures 2A and 2B.

Temporary disturbance associated with proposed Facility modifications will be limited to the repower corridor (Figures 2A and 2B). No permanent impacts are anticipated. Geospatial data layers for the micrositing corridor and repower corridor will be provided to the Oregon Department of Energy (ODOE) concurrently with submittal of this RFA3.

3. Applicable Division 21 Requirements – OAR 345 - 027-0360(1)(c)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the Site Certificate required by OAR 345-027-0350(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy that includes the following:

(c) References to any specific Division 21 information that may be required for the Department to make its findings.

Response: Given the limited nature of the proposed changes, the Certificate Holder maintains that new Division 21 exhibits are not necessary for this RFA3. The Certificate Holder provides updated evidence to demonstrate that the Facility, as modified, still complies with the applicable Oregon Energy Facility Siting Council (EFSC or the Council) standards, including the standards that have been updated following the Council's approval of RFA2 in 2013. In particular, this RFA3 provides updated findings for Oregon Administrative Rule (OAR) 345-022-0040, Protected Areas, as amended in December 2022; OAR 345-022-0100, Recreation, as amended in December 2022; and OAR 345-022-0115, Wildfire Prevention and Risk Mitigation, as adopted in July 2022 (these changes are discussed in Section 5).

4. Site Certificate Revisions – OAR 345-027-0360(1)(d)

OAR 345-027-0360(1)(d) The specific language of the Site Certificate, including conditions, that the certificate holder proposes to change, add or delete through the amendment.

Response: A redlined version of the Site Certificate to incorporate the revisions proposed is provided as Attachment 1.

5. Compliance with Applicable Council Standards and Other Laws

The relevant Council standards are Division 22 (General Standards for Siting Facilities) and Division 24 (Specific Standards for Siting Facilities). The relevant other laws include Oregon Department of Environmental Quality (DEQ) noise regulations, the Oregon Removal-Fill Law, and water rights. Table 5-1 lists the applicable standards and laws and effects of the proposed changes on the Facility. The Certificate Holder's analysis demonstrates that the Facility, as modified by RFA3, still complies with all applicable Council standards and other laws.

Table 5-1. Relevant Division 22 Requirements in RFA3

Division 22 Requirement	Effect of Proposed Changes
General Standard of Review (OAR 345-022-0000)	No change.
Organizational Expertise (OAR 345-022-0010)	No change. Updated information provided in RFA3 does not affect compliance.
Structural Standard (OAR 345-022-0020)	No change. Design and construction will be in accordance with the requirements set forth by the State of Oregon's Building Code Division and any other applicable codes and design procedures.
Soil Protection (OAR 345-022-0022)	No change. Repowering will not result in significant adverse impacts on soils not previously reviewed by the Council.
Land Use (OAR 345-022-0030)	No change. Reviewed against Gilliam County substantive criteria.
Protected Areas (OAR 345-022-0040)	No change. Addressed new language on protected areas per Permanent Administrative Order EFSC-5 (December 2022), Amendment of Protected Areas, Scenic Resources, and Recreation Standards and Associated Rules.
Retirement and Financial Assistance (OAR 345-022-0050)	An updated retirement cost estimate has been incorporated into this RFA3.
Fish and Wildlife Habitat (OAR 345-022-0060)	No change. This RFA3 provides an update on surveys, habitat, and new management plan requirements. No impacts on fish and wildlife or habitat not previously reviewed by the Council will result from the proposed repowering.
Threatened and Endangered Species (OAR 345-022-0070)	Wildlife surveys in 2023 identified a new colony of Washington ground squirrels within the Facility adjacent to, but outside, the repower corridor. A 785-foot setback buffer around the colony extends into the repower corridor and captures a turbine pad and road. As currently proposed, repower activities will result in new temporary disturbance within the buffer in areas that were previously disturbed during Facility construction and will avoid direct impacts to the colony and areas within 236 feet of the colony. The Certificate Holder has developed avoidance, minimization, and mitigation measures in coordination with the Oregon Department of Fish and Wildlife.
Scenic Resources (OAR 345-022-0080)	No change. Scenic resources were reviewed per Permanent Administrative Order EFSC-5 (December 2022) Amendment of Protected Areas, Scenic Resources, and Recreation Standards and Associated Rules. Total turbine tip height will not exceed

Division 22 Requirement	Effect of Proposed Changes
	authorized height and no new visual impacts on scenic resources not previously reviewed by the Council will result from the repowering project.
Historic, Cultural and Archaeological Resources (OAR 345-022-0090)	No change. Updated with information from data review and surveys. Updated information does not affect compliance.
Recreation (OAR 345-022-0100)	No change. Updated regarding recreation per Permanent Administrative Order EFSC-5 (December 2022), Amendment of Protected Areas, Scenic Resources, and Recreation Standards and Associated Rules. Updated information does not affect compliance.
Public Services (OAR 345-022-0110)	No change.
Wildfire Prevention and Risk Mitigation (OAR 345-022-115)	Compliance with the new fire management requirement and wildfire mitigation plan is addressed in this RFA3. With the implementation of the Wildfire Prevention and Risk Management Plan, the repowering project will comply with the Wildfire Prevention and Risk Management standard.
Waste Minimization (OAR 345-022-0120)	No change.

5.1 Analysis of Council Standards and Other Laws

OAR 345-027-0360(1)(e) A list of the Council standards and all other laws, including statutes, rules and ordinances, applicable to the proposed change, and an analysis of whether the Facility, with the proposed change, would comply with those applicable laws and Council standards. For the purpose of this rule, a law or Council standard is "applicable" if the Council would apply or consider the law or Council standard under OAR 345-027-0375(2)

Response: The Council standards that are relevant to the changes proposed in RFA3 are presented in Section 5 along with responses from the Certificate Holder that provide the analysis of compliance with those standards. Where applicable, supporting information from previous Facility reviews is provided or incorporated by reference.

5.2 OAR 345-022-0000 General Standard of Review

(1) To issue a Site Certificate for a proposed Facility or to amend a Site Certificate, the Council shall determine that the preponderance of evidence on the record supports the following conclusions:

(a) The Facility complies with the requirements of the Oregon Energy Facility Siting statutes, ORS 469.300 to 469.570 and 469.590 to 469.619, and the standards adopted by the Council pursuant to 469.501 or the overall public benefits of the Facility outweigh any adverse effects on a resource or interest protected by the applicable standards the Facility does not meet as described in section (2);

(b) Except as provided in OAR 345-022-0030 for land use compliance and except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council, the Facility complies with all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a Site Certificate for the proposed Facility. If the Council finds that applicable Oregon statutes and rules, other than those involving federally delegated

programs, would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

The Council has previously found that the Facility complies with the General Standard of Review under OAR 345-022-0000. The standards under OAR 345-022 have changed since RFA2 was approved by the Council in the Final Order on Amendment 2 and the corresponding Second Amended Site Certificate (State of Oregon 2013) and the Certificate Holder notes where such changes are addressed in the following analysis. The information presented in the following sections demonstrates that RFA3 does not change the Facility's ability to comply with the Council's siting standards, including OAR 345-022-0000.

5.3 OAR 345-022-0010 Organizational Expertise

(1) To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant's experience, the applicant's access to technical expertise and the applicant's past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.

(2) The Council may base its findings under section (1) on a rebuttable presumption that an applicant has organizational, managerial and technical expertise, if the applicant has an ISO 9000 or ISO 14000 certified program and proposes to design, construct and operate the facility according to that program.

(3) If the applicant does not itself obtain a state or local government permit or approval for which the Council would ordinarily determine compliance but instead relies on a permit or approval issued to a third party, the Council, to issue a site certificate, must find that the third party has, or has a reasonable likelihood of obtaining, the necessary permit or approval, and that the applicant has, or has a reasonable likelihood of entering into, a contractual or other arrangement with the third party for access to the resource or service secured by that permit or approval.

(4) If the applicant relies on a permit or approval issued to a third party and the third party does not have the necessary permit or approval at the time the Council issues the site certificate, the Council may issue the site certificate subject to the condition that the Certificate Holder shall not commence construction or operation as appropriate until the third party has obtained the necessary permit or approval and the applicant has a contract or other arrangement for access to the resource or service secured by that permit or approval.

Response: Leaning Juniper Wind Power II, LLC (Certificate Holder) is an Oregon limited liability company. A copy of the Certificate Holder's Articles of Organization is provided as Attachment 2. The Certificate Holder has operated the Facility since it was approved and constructed in 2011. The Certificate Holder itself has a demonstrated track record of constructing, operating, and maintaining the Facility to date. Further, the Certificate Holder is a wholly owned subsidiary of parent company Avangrid Renewables, LLC (Avangrid Renewables). The Certificate Holder relies on the organization expertise of its parent company to demonstrate the ability to repower the Facility, as proposed in this amendment. The Council previously found that Avangrid Renewables has the ability to design, construct, operate, and retire the Facility (and

other EFSC jurisdictional facilities) in compliance with all Council standards and conditions, as required by the Organizational Expertise standard. The standards under OAR 345-022-0010 have not changed since RFA2 was approved in the Final Order on Amendment 2 and the corresponding Second Amended Site Certificate (State of Oregon 2013).

Avangrid Renewables has operated renewable energy projects in Oregon since 2001. As of April 2023, Avangrid Renewables owned more than 8.6 gigawatts of utility-scale wind and solar generation and is the parent company backing the certificate holders of at least eight Council-jurisdictional facilities.

With respect to Avangrid Renewable's existing projects, DEQ issued two notices to Golden Hills Wind, LLC (an Avangrid Renewables subsidiary) related to erosion control issues during construction of the Golden Hills Wind Project in Sherman County, but the issues were promptly addressed, and no enforcement action or penalty was imposed by DEQ. Golden Hills also initiated a self-investigation into potential impacts on farming operations from construction activities that may have been in violation of its site certificate. To date, no violation notice has been issued. Notwithstanding this information, the Certificate Holder confirms that neither its parent company nor one of its project companies has received any regulatory citations in Oregon over the past 5 years.

According to its Articles of Organization, the Certificate Holder is a "Member-Managed Limited Liability Company" with Avangrid Renewables as the sole member (Attachment 2). Oregon Revised Statute (ORS) 63.001 defines "Member" as "a person with both an ownership interest in a limited liability company and all the rights and obligations of a member specified under this chapter," and ORS 63.130(1)(a) states that members of a limited liability company have "equal rights in the management and conduct of the limited liability's business." In this case, Avangrid Renewables has the control of the management and conduct of the Certificate Holder because Avangrid Renewables is the sole member of the company.

Avangrid Renewables is the parent company to several other EFSC-approved and operational facilities, including but not limited to the Montague Wind Power Facility, the Golden Hills Wind Power Facility, the Montague Solar Facility, the Oregon Trail Solar Facility, and the Bakeoven Solar Facility. These facilities are in various stages of operation and for each, the certificate holders have submitted bonds or letters of credit held by the project subsidiary LLCs. The Council has previously found that because of this relationship and the record of compliance for other EFSC facility bonding and site certificate conditions, the project subsidiaries are capable of meeting EFSC's organizational expertise standard.

Avangrid Renewables is directing the Certificate Holder to permit, design, construct, and operate a renewable energy facility. A copy of the executed operating agreement between the Certificate Holder and parent company, and documentation regarding the parent company name change from PPM Energy, Inc. (the signatory on the executed operating agreement) to Avangrid Renewables, LLC, are provided as Attachments 3a and 3b, respectively.

Avangrid Renewables respects the duties and standard of conduct of member-managed limited liability companies outlined in ORS 63.155 and is acting in good faith to meet its fiduciary responsibilities as the sole member of the Certificate Holder. For example, Avangrid Renewables will carefully evaluate the financial commitments, potential revenues, legal obligations, and market risk, among other factors, before allowing the Certificate Holder to enter into a long-term power purchase agreement, or contracts to purchase equipment. Avangrid Renewables has decades of experience in providing reliable, renewable energy to dozens of counterparties using identical corporate structure, including Pacific Northwest investor-owned utilities Portland General Electric, Puget Sound Energy, and Avista. Avangrid Renewables will invoke this experience to guide the business activities of LJIIA.

The Certificate Holder is in contract negotiations for the proposed repowering project, and no contracts have been finalized and signed. However, copies of the Third Amended Site Certificate, if granted, will be provided to the selected contractor, along with all environmental plans related to the Third Amended Site Certificate. The executed contracts will require that the contractor adhere to all Third Amended Site Certificate conditions and pursue any other necessary permit and approvals for the contractor's scope of work. Specifically, the draft contracts contain the following language:

> *"No Permits other than the Site Certificate will be supplied by Owner. Permits obtained by the Contractor related to permanent facilities or for activities that extend beyond the construction period shall be reviewed and approved by the Owner and submitted in the Owner's name. Copies of all Contractor Supplied Permits shall be provided to the Owner. Contractor shall provide all documentation necessary to demonstrate adherence to permit conditions. Contractor shall comply with all environmental, archaeological, cultural resources, and wildlife requirements specified in Project permits, Applicable Laws, codes or regulations. Contractor shall adhere to all permit conditions required of the project and assume all Owner responsibility through the construction phase of the project to ensure compliance."*

In addition to the above, the Certificate Holder will provide the contractor with a Compliance Matrix. The Compliance Matrix is developed in accordance with Third Amended Site Certificate conditions and becomes a part of the contract. The draft contract currently provides:

> *"Owner supplied Compliance Matrix, or other summaries of Permit conditions, do not relieve the Contractor responsibility for adhering to the constraints indicated within Permits. Responsibilities outlined in the Compliance Matrix are provided for guidance only, do not encompass all requirements of the Permits, agreements, Applicable Laws, codes or regulations, and do not represent contract terms; it is the overall responsibly of the Contractor to comply with Permits and Applicable Laws, codes or regulations during the design and construction of the facility."*

5.4 OAR 345-022-0020 Structural Standard

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that:

(a) The applicant, through appropriate site-specific study, has adequately characterized the seismic hazard risk of the site; and

(b) The applicant can design, engineer, and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site, as identified in subsection (1)(a);

(c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and

(d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Response: The Council previously found that the Facility complies with the Structural Standard under OAR 345-022-0020 and had the ability to construct the Facility to meet the Structural Standard. This RFA3 implicates the Structural Standard to the extent the Certificate Holder is modifying the existing turbine

structures and altering the turbine foundations to accommodate the repower equipment. The geotechnical studies provided in Exhibit H of the 2007 LJII Application for Site Certificate demonstrated that the Facility site boundary presented a low potential risk for seismic, geologic, and soils hazards, and that the Facility's design adequately protected the Facility and public from seismic, geologic, and soils hazards. A desktop review of current geological and seismic conditions demonstrates that there have been no change in prior conditions, and there is one quaternary fault that is considered inactive within the site boundary (Figure 3A). The Certificate Holder has consulted with the Oregon Department of Geology and Mineral Industries (DOGAMI) regarding the proposed repowering project (Attachment 4a).

In addition, the Certificate Holder has completed a geologic risk assessment memorandum to reexamine potential hazards identified prior to initial construction of the Facility (Attachment 4b).

Figure 3A depicts historical earthquakes and geologic faults and folds in the vicinity of the Facility. No earthquakes have been recorded near the Facility since 2013, according to the U.S. Geological Survey (USGS) Earthquake Catalog (USGS n.d.).

Figures 3A and 3B illustrate geological conditions and seismic risks in the Facility vicinity. The DOGAMI map indicates the entire Facility site boundary is within a moderate hazard zone. There has been no change in DOGAMI's assessment of seismic risk of the area since the Facility was originally approved.

The Facility is located on a plateau-like landform. There are no 100-year floodplains within the repower corridor (Figure 3C; FEMA 2023). The majority of the repower corridor is located in low landslide susceptibility areas; temporary disturbance is outside of those areas designated as having moderate, high, and very high landslide susceptibility (Figure 3D).

Overall, the area subject to RFA3 is a flat, stable plateau surface covered by a loess mantle and no additional seismic hazards such as liquefaction or ground shaking, landslides, or slope instability were identified from USGS or DOGAMI sources.

The Certificate Holder has conducted a field evaluation of the Facility to visually inspect the existing foundations at the Facility (Attachment 4c). Following the field evaluation, the Certificate Holder conducted a structural assessment of the existing LJIIA turbine foundations to determine the design loads that can be accommodated by the existing foundations (Attachment 4d). Based on a preliminary assessment, the Certificate Holder proposes to reinforce, or retrofit, the foundations of the repowered turbines so that they are suitable for the new turbine loads. Preliminary retrofit designs of the existing foundations using site-specific loads are included in Attachment 4d. Foundation reinforcement involves excavating the existing fill placed around the turbine foundation during original construction and installing additional rebar and concrete around the foundation (below grade). Foundation reinforcements are not anticipated to extend beyond the existing belowground pedestal and will not be visible above ground when completed.

Condition 50 ensures that the Certificate Holder designs and constructs the Facility in accordance with the requirements set forth by the State of Oregon's Building Code Division and any other applicable codes and design procedures and designs all components of the Facility to meet or exceed the minimum standards required by the 2003 International Building Code. The Certificate Holder proposes that all proposed changes as a part of this RFA3 will be designed for the Maximum Considered Earthquake event, according to the 2012 International Building Code as amended by the Oregon Structural Specialty Code.

The Council has responded to previous concerns by incorporating Conditions 49 to 51 into the Site Certificate, and these conditions continue to ensure that Leaning Juniper IIA meets the requirements of

the Structural Standard. Therefore, the changes proposed by the Certificate Holder do not change the Facility's compliance with OAR 345-022-0020, or any related conditions in the Site Certificate.

5.5 OAR 345-022-0022 Soil Protection

To issue a Site Certificate, the Council must find that the design, construction and operation of the Facility, taking into account mitigation, are not likely to result in a significant adverse impact to soils including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.

Response: The Council previously found that the Facility complies with the Soil Protection Standard. The Soil Protection Standard requires the Council to find that the design, construction, and operation of the Facility, considering mitigation, are not likely to result in significant adverse impacts to soils. OAR 345-022-0022 has not changed since the original site certificate was issued for the Facility in 2007. The Certificate Holder previously identified soil conditions within the analysis area for the Facility in Exhibit I of the 2007 LJII Application for Site Certificate, and has confirmed soil conditions for RFA3 remain the same (Figure 4). The main soil types within the Facility are the Krebs, Olex, Sagehill, Ritzville Loam, Warden Silt Loam, and Willis Silt Loam. The Certificate Holder proposes up to approximately 396 acres of temporary disturbance within the repower corridor.

To minimize potential impacts on soils during repower activities, the Certificate Holder will implement the following measures:

- The contractor will clear vegetation only as necessary to construct the Facility in accordance with the design.
- Stripped grade or excavated topsoil will be stockpiled away from designated work areas and kept separate from other excavated material (rock and/or subsoil) until the completion of grading activity. If the topsoil strata are such that there are two or more distinct layers affected by excavations, each layer will be stockpiled separately and returned in the reverse order it was excavated, unless agreed with the owner in writing. Stockpiles within the site will have temporary erosion and sediment control applied in accordance with the project-specific Erosion and Sediment Control Plan.
- If required, fill material will be provided by the contractor. The fill material will be inert, free draining, free from any deleterious materials, and placed to a degree of compaction adequate for the support of facilities constructed on or within the fill.

Additional minimization measures are described in a soil management plan appended to the Revegetation and Noxious Weed Control Plan (Attachment 5).

As with the original Facility, the repower activities will follow the requirements of the Erosion and Sediment Control Plan and the National Pollutant Discharge Elimination System (NPDES) 1200-C permit. The Certificate Holder will ensure the contractor pursues an NPDES 1200-C permit for repower activities, consistent with the requirements in Condition 70.

The following erosion control best management practices will be incorporated into the NPDES 1200-C, if applicable:

- Silt Fencing: Silt fencing may be installed around the perimeter of material stockpiles and repower construction temporary laydown areas.
- Straw Wattles: Straw wattles may be installed to decrease the velocity of sheet flow stormwater along the downgradient edge of Facility access roads adjacent to gullies or sensitive habitats.

- Mulching: Mulch may be provided to immediately stabilize soil exposed as a result of land-disturbing activities and during the reseeding of disturbed areas.
- Stabilization Matting: Jute matting, straw matting, or turf reinforcement matting may be used to stabilize areas that could become exposed during any modifications to Facility access roads.
- Soil Binders and Tackifiers: Soil binders and tackifiers may be used on exposed areas to stabilize them until vegetation is established.
- Pollutant Management: During repower activities, source control measures will be implemented to reduce the potential of chemical pollution of surface water or groundwater during construction. Fuels and oils will be stored in a dedicated area, and construction vehicles will be fueled and maintained only in dedicated areas.

Site Certificate Condition 69 will continue to be followed if an accidental spill or release were to occur, and spill kits will continue to be kept onsite.

The proposed changes do not affect the Council's previous finding that the construction and operation of the Facility will be consistent with the requirements of the Council's Soil Protection Standard and applicable Conditions 68, 69, 70, and 71. Temporary disturbance from the repower activities will occur within areas previously disturbed and approved for Facility construction (turbines and turbine pads, roads where the cranes will move turbine components, and the collector line system). Turbine foundation reinforcement will require excavation and backfilling around the existing turbine foundations, but those activities will be limited to areas previously disturbed during Facility construction and will be restored. The Certificate Holder will minimize temporary disturbance by making use of permanently disturbed areas, including roadways and turbine pads. RFA3 will not result in significant adverse impacts on soils not previously reviewed by the Council, will not impair the Certificate Holder's ability to comply with conditions of the Site Certificate, will not require new conditions or change to existing conditions of the Site Certificate. Therefore, the Council may conclude that the Facility, as amended by RFA3, will continue to comply with OAR 345-022-0022.

5.6 OAR 345-022-0030 Land Use

To issue a site certificate, the Council must find that the proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission.

(1) The Council shall find that a proposed facility complies with section (1) if:

(2) The applicant elects to obtain local land use approvals under ORS 469.504(1)(a) and the Council finds that the facility has received local land use approval under the acknowledged comprehensive plan and land use regulations of the affected local government; or

(a) The applicant elects to obtain a Council determination under ORS 469.504(1)(b) and the Council determines that:

(A) The proposed facility complies with applicable substantive criteria as described in section (3) and the facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3);

(B) For a proposed facility that does not comply with one or more of the applicable substantive criteria as described in section (3), the facility otherwise complies with the statewide planning goals or an exception to any applicable statewide planning goal is justified under section (4); or

(C) For a proposed facility that the Council decides, under sections (3) or (6), to evaluate against the statewide planning goals, the proposed facility complies with the applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under section (4).

(3) As used in this rule, the "applicable substantive criteria" are criteria from the affected local government's acknowledged comprehensive plan and land use ordinances that are required by the statewide planning goals and that are in effect on the date the applicant submits the application. If the special advisory group recommends applicable substantive criteria, as described under OAR 345-021-0050, the Council shall apply them. If the special advisory group does not recommend applicable substantive criteria, the Council shall decide either to make its own determination of the applicable substantive criteria and apply them or to evaluate the proposed facility against the statewide planning goals.

(4) The Council may find goal compliance for a proposed facility that does not otherwise comply with one or more statewide planning goals by taking an exception to the applicable goal. Notwithstanding the requirements of ORS 197.732, the statewide planning goal pertaining to the exception process or any rules of the Land Conservation and Development Commission pertaining to the exception process, the Council may take an exception to a goal if the Council finds:

(a) The land subject to the exception is physically developed to the extent that the land is no longer available for uses allowed by the applicable goal;

(b) The land subject to the exception is irrevocably committed as described by the rules of the Land Conservation and Development Commission to uses not allowed by the applicable goal because existing adjacent uses and other relevant factors make uses allowed by the applicable goal impracticable; or

(c)The following standards are met:

(A) Reasons justify why the state policy embodied in the applicable goal should not apply;

Response: The Council previously found that the Facility complies with the Land Use Standard under ORS 469.504(1)(b) and OAR 345-022-0030(2)(b). In doing so, the Council concluded that the Facility complied with the applicable substantive criteria in the Gilliam County Zoning Ordinance (GCZO) and to the extent incorporated by references into the GCZO, the Gilliam County Comprehensive Plan (GCCP; Gilliam County 2017). The Certificate Holder has coordinated with Gilliam County and reviewed and confirmed there have been no changes to Gilliam County's applicable substantive criteria from its comprehensive plan and zoning ordinance since 2013. The Certificate Holder identifies the applicable local substantive criteria from the GCZO and GCCP as detailed in the following sections.

5.6.1 Gilliam County Zoning Ordinance

Article 4 (Use Zones)

- Section 4.020 (Exclusive Farm Use) – Subsections C, D, H, and J

Article 7 (Conditional Uses)

- Section 7.010 (Authorization to Grant or Deny Conditional Uses) – Subsection A

Section 7.020 (Standards Governing Conditional Uses) – Subsections A, Q, and T

Article 8 (Supplementary Provisions)

- Section 8.030 (Clear Vision Areas) – Subsections A through C

- Section 8.040 (Outdoor Lighting Standards) – Subsections A through D
- Section 8.050 (Sign Regulations)
- Section 8.070 (Projections from Buildings)
- Section 8.100 (Off-Street Parking Requirements) – Subsection A
- Section 8.140 (Site Plan Review) – Subsections A, and E through N

5.6.2 Gilliam County Comprehensive Plan Policies Under GCZO Criteria

- Goal 2 (Land Use Planning) – Policy 7
- Goal 3 (Agricultural Lands) – Policy 3
- Goal 5 (Natural Resources) – Policies 2 and 12
- Goal 6 (Air, Water, and Land Resources Quality) – Policies 6 and 7
- Goal 8 (Recreation) – Policy 3
- Goal 12 (Transportation) – Policies 10 and 14
- Goal 13 (Energy Conservation) – Policy 3

The Certificate Holder anticipates that the Gilliam County Board of Commissioners will again be appointed as the Special Advisory Group and will confirm that these criteria constitute the current "applicable substantive criteria" for this RFA3. In October 2011, the County adopted amendments to the GCZO to incorporate the wind energy facility siting standards from Department of Land Conservation and Development OAR 660-033-0120 and 660-033-0130(37) into the GCZO under GCZO 7.020(T)(5)(a)(10). Accordingly, there are no directly applicable state laws for this RFA3, and all "applicable substantive criteria" for purposes of the Land Use Standard are found in the GCZO.

The Council has previously concluded that the Facility complied with the Land Use Standard.[3] The proposed changes in this RFA do not affect the Council's previous finding regarding Certificate Holder's compliance with the applicable substantive criteria. The proposed changes do not alter the Facility site boundary or micrositing corridor and do not increase the number of turbines or turbine maximum heights. All temporary disturbance will occur in the repower corridor where temporary impacts were previously approved. The Certificate Holder will comply with Conditions 36 to 40 for all repower activities, including coordinating with Gilliam County on an updated road use agreement (Condition 36) and managing construction traffic (Condition 37). In addition, the Certificate Holder has reached out to area landowners and lessees to inform them of the upcoming repower and discuss measures to minimize impacts on ongoing framing operations (Conditions 40 and 41). Refer to Attachment 6. For operations, the Certificate Holder will continue to comply with all other land use Site Certificate conditions.

5.6.2.1 Previously Evaluated Applicable Substantive Criteria

The Certificate Holder has provided Attachment 7 to demonstrate how the Facility, as modified, will continue to comply with the previously evaluated applicable substantive criteria from the GCZO.

5.6.2.2 New Applicable Substantive Criteria

Since the Facility was originally approved, a wind energy generation facility on EFU land no longer triggers a Goal 3 exception. Therefore, rather than demonstrating why the previously approved Goal 3 exception is still justified, Certificate Holder addresses the Facility's compliance with the applicable substantive criteria that implement the Department of Land Conservation and Development 's wind facility siting standards.

[3] Final Order on the LJF Application, p. 151 (Sept. 21, 2007) and Final Order on LJF Amendment #1, p. 92 (Nov. 20, 2009).

Council did not previously consider these standards when it approved the Site Certificate on Amendment 2 because RFA2 only involved a splitting of the Facility, and did not trigger the Land Use Standard.

As shown on Figure 5A, the area subject to RFA3 remains entirely within the Gilliam County Exclusive Farm Use zone. Figure 5B shows the area subject to RFA3 and the Natural Resources Conservation Service (NRCS) nonirrigated soil capability classes based on 2022 NRCS data (NRCS 2022). The repower corridor consists of NRCS nonirrigated Class 3 and Class 6 soils with small amounts of NRCS (nonirrigated) Class 4, Class 7, and Class 8. The Council previously found when it originally approved the Facility that the site boundary was not composed of "high-value farmland" or NRCS Class I or II soils. Since then, the definition of "high-value farmland" for purposes of siting wind power generation facilities has been revised to incorporate the high value soil definitions in ORS 195.300(10), which includes ORS 195.300(10)(f)(C), capturing all land within the designated Columbia Valley American Viticulture Area (AVA).

This RFA will temporarily affect up to approximately 396 acres within the repower corridor, predominately composed of NRCS Class 3 and 6 (see Table 5-2 and Figure 5B), which would not be considered "high-value" under the NRCS soil classification system. The soils within the repower corridor are cultivated or suitable for cultivation and therefore considered "arable" based on site-specific conditions. Recent aerial photos confirm that most of the Facility remains cultivated as dry-land wheat. However, by operation of law, the entire repower corridor must also be considered "high-value farmland" for purposes of GCZO 7.020(T)(a)(10) given the Facility's location within the Columbia Valley AVA, even though all temporary disturbance will be to arable soils. Based on elevation, slope, and aspect of the Columbia Valley AVA, approximately 903 acres (57.8 percent) are within the repower corridor. Accordingly, the Certificate Holder addresses compliance with GCZO 7.020(T)(a)(10) by analyzing OAR 660-033-0130(37), both (a) and (b), for high-value farmland and arable land, respectively.

Table 5-2. NRCS Soil Classification of Repower Corridor

NRCS Soil Classification	Number of Acres	Percent (%)	Temporary Impact Acres
3	531.2	34	146.9
4	199.6	13	42.8
6	824.5	53	205.8
7	4.1	<1	0.5
8	5.1	<1	0.2
Grand Total	1,564.5		396.2

(a) *For high-value farmland soils described at ORS 195.300(10), the governing body or its designate must find that all of the following are satisfied:*

(A) Reasonable alternatives have been considered to show that siting the wind power generation facility or component thereof on high-value farmland soils is necessary for the facility or component to function properly or if a road system or turbine string must be placed on such soils to achieve a reasonably direct route considering the following factors:

(i) Technical and engineering feasibility;

(ii) Availability of existing rights of way; and

(iii) The long term environmental, economic, social and energy consequences of siting the facility or component on alternative sites, as determined under paragraph (B);

Response: In analyzing subpart (a)(A), the Certificate Holder must consider whether "reasonable alternatives" exist on non-high-value farmland soils and then analyze whether RFA3 changes could "function properly" in an alternative location. The Facility is an operating wind facility located within cultivated wheat fields. The purpose of RFA3 is to repower existing turbines to extend their operational life and make the Facility more efficient. The Certificate Holder maintains that there is no reconfiguration of the operating facility that would be considered "reasonable" under subpart (a)(A).

(B) The long-term environmental, economic, social and energy consequences resulting from the wind power generation facility or any components thereof at the proposed site with measures designed to reduce adverse impacts are not significantly more adverse than would typically result from the same proposal being located on other agricultural lands that do not include high-value farmland soils;

Response: The Certificate Holder provides the following economic, social, environmental, and energy analysis to demonstrate compliance with subpart (a)(B).

With respect to environmental consequences, the RFA proposes only temporary disturbance and will implement water, soil, habitat, and wildlife impact minimization measures to ensure that any environmental impact does not rise to the level of significant. The Certificate Holder's compliance with the applicable Division 22 Standards ensure that such impacts will be appropriately avoided, minimized, or to the extent necessary, mitigated.

With respect to economic and social consequences, the RFA proposes to repower the existing Facility to allow it to continue operating and have a longer service life. The underlying landowners will benefit from longer lease terms and workers will benefit from the temporary increase in construction jobs and longer durations for operational jobs. The Certificate Holder has paid over $10 million in property taxes to date since reaching operations in 2011. Annual property tax payments are expected to increase post-Repower, and the Repower will also extend the life of the Facility. Therefore, tax payments will extend well into the future beyond the original life of the Facility. There will be no increase in permanent disturbance so no additional agricultural land will be removed from production.

With respect to energy, the RFA will result in the ongoing production of clean renewable energy and by repowering an existing facility, takes considerably less resources than constructing a new energy facility.

For these reasons, the Certificate Holder does not anticipate any impact on economic, social, environmental, and energy consequences within the land use analysis area that would rise to the level of significant, and this standard is met.

(C) Costs associated with any of the factors listed in paragraph (A) may be considered, but costs alone may not be the only consideration in determining that siting any component of a wind power generation facility on high-value farmland soils is necessary;

Response: Regardless of cost, reasonable alternatives affecting materially less high-value farmland are not available. Refer to the response to subpart (a)(A). This standard is met.

(D) The owner of a wind power generation facility approved under subsection (a) shall be responsible for restoring, as nearly as possible, to its former condition any agricultural land and associated improvements that are damaged or otherwise disturbed by the siting, maintenance, repair or reconstruction of the facility. Nothing in this subsection shall prevent the owner of the

facility from requiring a bond or other security from a contractor or otherwise imposing on a contractor the responsibility for restoration; and

Response: The Certificate Holder is obligated under the Retirement Standard to ensure that the Facility, as modified, is retired and the site is restored to a nonhazardous condition following permanent cessation of Facility operations. The Certificate Holder is updating its decommissioning financial assurance to assure proper retirement of the Facility when the time comes. This standard is met.

(E) The criteria of subsection (b) are satisfied.

Response: Refer to the following responses. This standard is met.

(b) For arable lands, meaning lands that are cultivated or suitable for cultivation, including high-value farmland soils described at ORS 195.300(10), the governing body or its designate must find that:

(A) The proposed wind power facility will not create unnecessary negative impacts on agricultural operations conducted on the subject property. Negative impacts could include, but are not limited to, the unnecessary construction of roads, dividing a field or multiple fields in such a way that creates small or isolated pieces of property that are more difficult to farm, and placing wind farm components such as meteorological towers on lands in a manner that could disrupt common and accepted farming practices;

Response: The Certificate Holder proposes changes to the Facility within the repower corridor, a subsection of the previously approved micrositing corridor. The proposed changes will result in temporary disturbance of soils that will be subsequently remediated and restored per the Revegetation and Noxious Weed Control Plan (Attachment 5). The Certificate Holder has reached out to the underlying landowners to coordinate.

Three underlying landowners are located within the repower corridor: J.R. Krebs, Linda Tatone, and Waste Management Disposal Services of Oregon. No permanent disturbance is anticipated to occur as part of the Repower. Letters describing the anticipated temporary impacts associated with the Repower were mailed to each participating landowner on September 7, 2023, and are included as Attachment 6 in this RFA3.

(B) The presence of a proposed wind power facility will not result in unnecessary soil erosion or loss that could limit agricultural productivity on the subject property. This provision may be satisfied by the submittal and county approval of a soil and erosion control plan prepared by an adequately qualified individual, showing how unnecessary soil erosion will be avoided or remedied and how topsoil will be stripped, stockpiled and clearly marked. The approved plan shall be attached to the decision as a condition of approval;

Response: The Repower will be subject to an NPDES 1200-C permit from DEQ that will require the Certificate Holder to implement specific erosion control measures to limit soil erosion and the loss of topsoil. The erosion control measures implemented during the Repower will be similar to those implemented during Facility construction, as further described in response to the Soil Protection Standard in Section 5.5. The Certificate Holder will continue to comply with Condition 70 during the Repower to address soil erosion and sediment control. This standard is met.

(C) Construction or maintenance activities will not result in unnecessary soil compaction that reduces the productivity of soil for crop production. This provision may be satisfied by the submittal and county approval of a plan prepared by an adequately qualified individual, showing how unnecessary soil compaction will be avoided or remedied in a timely manner through deep soil

decompaction or other appropriate practices. The approved plan shall be attached to the decision as a condition of approval; and

Response: The Certificate Holder will implement the soil protection measures described in Section 5.5. The Certificate Holder will continue to comply with Condition 71 during the Repower to minimize soil compaction. The Certificate Holder has developed a soil management plan that is appended to the Revegetation and Noxious Weed Control Plan (Attachment 5). This standard is met.

(D) Construction or maintenance activities will not result in the unabated introduction or spread of noxious weeds and other undesirable weeds species. This provision may be satisfied by the submittal and county approval of a weed control plan prepared by an adequately qualified individual that includes a long-term maintenance agreement. The approved plan shall be attached to the decision as a condition of approval.

Response: The Certificate Holder will continue to comply with Condition 82 that requires a weed control plan developed in coordination with the Gilliam County Weed Control Board. The Certificate Holder will coordinate with the County Weed Control Board to determine whether any updates are needed to the existing weed control plan.

In sum, RFA3 will not result in a significant adverse impact on land uses not previously reviewed by the Council, will not impair the Certificate Holder's ability to comply with conditions of the Site Certificate, and will not require new conditions or a change to existing conditions of the Site Certificate. Therefore, the Council may conclude that the Facility, as amended by LJIIA RFA3, will continue to comply with OAR 345-022-0030.

5.7 OAR 345-022-0040 Protected Areas

(1) Except as provided in sections (2) and (3), the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below. References in this rule to protected areas designated under federal or state statutes or regulations are to the designations in effect as of May 11, 2007

Response: The Council previously found that the Facility complies with the Protected Areas Standard. In December 2022, Council updated the Protected Areas Standard, and the following analyses update the prior findings to demonstrate that notwithstanding the amended standard and proposed changes, the Facility still compiles with the Protected Areas Standard. The Protected Areas Standard requires the Council to find that, taking into account mitigation, the design, construction, and operation of a facility are not likely to result in significant adverse impacts on any protected area as defined by OAR 345-022-0040.

There are 10 protected areas within the 20-mile analysis area (per OAR 345-001-0010(59)(e); Figure 6A). The Certificate Holder does not propose to change the number of turbines previously evaluated or the location or total tip height of the previously approved turbines. Based on the Certificate Holder's review of Protected Areas listed in OAR 345-022-0040(1), there is one new protected area located within the 20-mile analysis area subject to LJIIA RFA3: Cottonwood Canyon State Park (Figure 6A). Table 5-3 describes the 10 protected areas within the 20-mile analysis area.

The Council found that the Facility is not located in any protected area listed in OAR 345-022-0040. The Certificate Holder reviewed protected areas per the 2022 change to OAR 345-022-0040 and has determined that the proposed repower amendment is not likely to result in significant adverse impact on

any protected area. The number of turbines, the turbine locations, and the turbine tip heights all remain within the previously approved limits of the Site Certificate.

With respect to traffic, the proposed changes in RFA3 are not anticipated to exceed previously approved levels of construction or operational traffic (refer to Section 5.14), construction or operational water (refer to Section 5.14), and construction or operational wastewater (refer to Section 5.14) from levels that were previously analyzed for the Facility. The proposed repower construction and operational transportation routes, which are presented on Figure 6B, include Interstate 84 (I-84), Oregon State Highway 19 (OR 19), Blalock Canyon Road, Cedar Springs Lane, and Rattlesnake Road. Traffic demands on local roads and the adjacent highway network (I-84 and OR 19) will be minor because of the rolling construction upgrading schedule.

The Oregon National Historic Trail is the closest protected area to the Facility and crosses through Cedar Springs Lane and Blalock Canyon Road. Visual, dust, and noise impacts from the Repower are expected to be temporary and will not result in adverse effects. The Certificate Holder will avoid construction disturbance to remnants of the Oregon Trail and if any intact physical evidence of the trail is discovered, the Certificate Holder will avoid any disturbance of the intact segments.

Horn Butte Area of Critical Environmental Concern, Arlington State Wayside, and Willow Creek Wildlife Area are located within or adjacent to I-84. However, Facility-related vehicles will continue through the protected areas and will not cause substantial traffic or impede access. The remaining protected areas are not located near proposed transportation routes and will not experience substantial traffic or altered access caused by the Facility. With respect to noise, a preliminary analysis of noise from the proposed changes from the repowered turbines (refer to Section 5.19) indicates that the Facility, as modified by RFA3, will continue to comply with the DEQ noise regulation. Changes in noise levels from the Repower will be limited to areas adjacent to the site boundary and, due to distance, terrain, and existing physical features, increased noise will be attenuated and will not extend to the nearest protected area approximately 1.4 miles from the Facility.

Table 5-3. Protected Areas within the Analysis Area

Protected Area	Distance and Direction from Site Boundary	Managing Agency	Basis for Protection under OAR 345-001-0010(26) (subsection)	Agency Contact Information	References
Oregon National Historic Trail	1.4 miles south	US National Park Service	(a) National Parks	505-988-6098	Comprehensive Management and Use Plan, Management and Use Plan Update, Final Environmental Impact Statement – Oregon National Historic Trail, Mormon Pioneer National Historic Trail
Lewis and Clark National Historic Trail	2.2 miles north	US National Park Service	(a) National Parks	402-661-1804 Lecl_information@nps.gov	Lewis and Clark National Historic Trail Comprehensive Plan for Management and Use; Lewis and Clark National Historic Trail Foundation Document
Horn Butte Area of Critical Environmental Concern	3.7 miles east	BLM – Princeville District	(o) BLM Area of Critical Environmental Concern	541-416-6700 BLM_OR_PR_Mail@blm.gov	John Day Basin Record of Decision and Resource Management Plan
Arlington State Wayside	4.7 miles northeast	OPRD	(h) State Parks and Waysides	503-986-0707 park.info@oregon.gov	No applicable management plan
John Day Wild and Scenic River	5.1 miles southwest	BLM – Princeville District	(k) Wild or Scenic Rivers	541-416-6700 BLM_OR_PR_Mail@blm.gov	John Day Basin Record of Decision and Resource Management Plan
Cottonwood Canyon State Park	8.9 miles southwest	OPRD	(h) State Parks and Waysides	503-986-0707 park.info@oregon.gov	Cottonwood Canyon State Park Comprehensive Plan

Protected Area	Distance and Direction from Site Boundary	Managing Agency	Basis for Protection under OAR 345-001-0010(26) (subsection)	Agency Contact Information	References
Willow Creek Wildlife Area	9.2 miles northeast	ODFW	(p) State Wildlife Areas	541-276-2344 odfw.info@odfw.oregon.gov	Columbia Basin Wildlife Areas Management Plan
Lower John Day Wilderness Study Area	17.1 miles southwest	BLM – Princeville District	(c) Wilderness Areas	541-416-6700 BLM_OR_PR_Mail@blm.gov	John Day Basin Record of Decision and Resource Management Plan
Ferry Canyon Area of Critical Environmental Concern	18.9 miles southwest	BLM – Princeville District	(o) BLM Area of Critical Environmental Concern	541-416-6700 BLM_OR_PR_Mail@blm.gov	John Day Basin Record of Decision and Resource Management Plan
Umatilla National Wildlife Refuge	19.6 miles northeast	USFWS	(d) National and State Wildlife Refuges	509-546-8300 mcriver@fws.gov	Umatilla National Forest Land Management Plan

Notes:

[a] Approximate distance from the closest point of the site boundary to the closest point of the protected area.

BLM = Bureau of Land Management

ODFW = Oregon Department of Fish and Wildlife

OPRD = Oregon Parks and Recreation Department

USFWS = U.S. Fish and Wildlife Service

The existing Facility is potentially visible from the Horn Butte Area of Critical Environmental Concern, Cottonwood Canyon State Park, and the John Day Wild and Scenic River, protected areas within the 20-mile analysis area. However, visual impacts from RFA3 on protected areas are consistent with the Final Order on Amendment 2 and will continue to comply with Site Certificate Conditions 90, 91, and 92. Based on the analysis of the zone of visual influence (ZVI) for the repowered turbines, compared to the ZVI that is the basis for the Final Order and the Site Certificate, the visibility of the Facility from protected areas will not substantially change and therefore Council may conclude that the Facility, as amended, will not result in significant adverse impacts on protected areas (Figure 6C).

Changes from the Repower will not significantly affect protected areas. RFA3 will not alter the basis for the Council's earlier findings. Therefore, the Council may find that this RFA3 also complies with OAR 345-022-0040.

5.8 OAR 345-022-0050 Retirement and Financial Assurance

To issue a site certificate, the Council must find that:

(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.

Response: The Council previously found that the Facility could be restored adequately to a useful, nonhazardous condition following permanent cessation of construction or operation and pursuant to Condition 16. The standards under OAR 345-022-0050 have not changed since RFA2 and the original Site Certificate. Underlying documentation supporting the current legal opinion letter (Attachment 8) has not changed since ODOE received the last opinion letter. The Certificate Holder maintains that such documents are not necessary to support this RFA and do not need to be included in the public record.

Exhibit W of the 2007 LJII Application for Site Certificate details actions to restore the Facility to a useful, nonhazardous condition upon retirement. In RFA2, the Certificate Holder described the adjustment of the bond and financial assurance to cover the total estimated cost for site restoration to a useful, nonhazardous condition. The financial assurance letter is included as Attachment 9. This RFA describes the adjustment of the bond and financial assurance to account for the proposed changes associated with the Facility repower and proposes revisions to Condition 16 to ensure the Certificate Holder will restore the Facility, as modified, in accordance with the Retirement and Financial Assurances Standard.

The repowered turbines will have a certified life of 20 years from the original equipment manufacturer, though it is generally understood by the Certificate Holder that the turbine life can be extended to 25 years and slightly beyond to 30 years based on site conditions and the Certificate Holder's maintenance program. At the time of Repower, the remaining Suzlon turbines would be 14 years old and would have an estimated 11 to 16 years of additional life. Only 36 of the remaining 40 turbines are proposed for repowering due to equipment availability at the time of repowering.

Although the existing turbines at the site are certified for 20 to 30 years, the Certificate Holder has been completing routine maintenance at LJIIA for different turbine components over the past 13 years. This repower of the 36 turbines is a maintenance and upgrade exercise but done at a larger scale (meaning not just one or two turbines) while maintaining existing towers and foundations. In addition, the proposed Repower is related to improving the economic value of LJIIA based on current financial conditions. The updated retirement cost estimate for the Facility, as amended and adjusted for inflation, is detailed in Attachment 10 of this RFA3. An updated financial assurance letter will be submitted upon ODOE approval

of the updated retirement cost estimate. Therefore, the Council may conclude that the Facility, as amended, will continue to comply with OAR 345-022-0050.

5.9 0AR 345-022-0060 Fish and Wildlife Habitat

To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with:

(1) The general fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025(1) through (6) in effect as of February 24, 2017, and

(2) For energy facilities that impact sage-grouse habitat, the sage-grouse specific habitat mitigation requirements of the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-415-0025(7) and OAR 635-140-0000 through -0025 in effect as of February 24, 2017.

Response: The Council previously found that the Facility will comply with the Council's Fish and Wildlife Habitat Standard under RFA2. The standards under OAR 345-022-0060 have been amended since RFA2 was approved and the Facility, as amended, will not affect the Certificate Holder's ability to comply with the standard or any of the other previously imposed Site Certificate conditions for fish and wildlife habitat.

A habitat survey was conducted in June and August 2023 to update the existing LJIIA habitat mapping and capture the entirety of the repower corridor. The survey consisted of a desktop data review and field survey. The desktop survey delineated potential habitat units using aerial photograph imagery. The field survey confirmed and refined the desktop mapping as necessary by walking transects through potential habitat units. The objective of the survey was to verify or update habitat categories and types within the repower corridor have not changed since the initial habitat surveys that were conducted in 2007. Habitat types within 200 feet either side of existing access roads and collector lines and 500 feet of turbine pads were surveyed. Habitat mapping delineated habitats and distinctive features present onsite, including ODFW habitat categories and subtypes, and is presented on Figures 7A and 7B. The habitat categorization shown within the area subject to repower corridor and 0.5-mile fish and wildlife analysis area was reviewed and is consistent with currently available 2020 aerial imagery (USGS 2020). The 2020 aerial imagery was applied under the 2007 mapped habitat categories to demonstrate that these habitat categories within the previously approved wind micrositing corridor are substantively similar to currently available aerial imagery.

Following the 2023 surveys, habitat was mapped and classified per the habitat categories set forth in OAR 635-415-0025, including an assessment of habitat quality. Observations of state-designated noxious weeds, state sensitive, threatened, and endangered wildlife species, and state-threatened, endangered, and candidate vascular plant species were recorded if observed and included long-billed curlew and white-tailed jackrabbit.

The survey confirmed that the habitat categories in the repower corridor remain generally as identified in the 2007 survey. Based on the 2023 Washington ground squirrel (*Urocitellus washingtoni*) (WGS) survey, an area of Category 1 habitat was identified in the repower corridor. Figures 7A and 7B present the habitat types, subtypes, and categories identified in the repower corridor based on consultation with ODFW. Table 5-4 presents the acreages of habitat categories within the repower corridor and the area of estimated temporary disturbance. Temporarily disturbed areas will be revegetated and restored to preconstruction conditions in accordance with Condition 74. No new permanent impacts on habitat are anticipated. Category 1, Category 2, and Category 6 habitat is associated with the buffer around a WGS colony and is addressed further in Section 5.10.

Table 5-4. Habitat in Repower Corridor and Estimated Area of Temporary Disturbance

Habitat Category and Type	Habitat Subtype	Habitat Description	Repower Corridor (ac)	Estimated Temporary Impacts (ac)[a]
Category 1				
SS	SSA	Sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grass	16.5	0
WW	HW	Herbaceous wetland	0.2	0
Category 2				
E	ESC	Escarpment	5.9	0.1
SS	SSA	Sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grass	138.0	36.1
S	SSC	Erigonum/Poa sandbergii-annual grass	22.4	8.0
Category 3				
E	EB	Exposed basalt	0.5	0
G	AG	Annual grass and weeds	40.9	6.5
SS	SSA	Sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grass	82.1	17.8
SS	SSB	Rabbitbrush-snakeweed-eriogonum/bunchgrass	623.4	162.4
Category 4				
E	EB	Exposed basalt	1.4	0
G	AG	Annual grass and weeds	50.0	12.7
Category 6[b]				
D	DW	Dryland wheat	573.3	151.1
D	DX	Developed	8.6	1.5
Total			1,563.2	396.2

Notes:

[a] Estimated acres of temporary impact based on 60-foot buffer around roads, 50-foot buffer around collector lines, 255-foot radius around turbines, and designated temporary laydown or crane assembly areas.

[b] 0.78 acre of existing permanent impact from the turbine and access road within the repower corridor is included in Category 6 habitat calculation.

Acreages are rounded to the nearest tenth.

RFA3 proposes the replacement of the existing 88-meter-diameter rotors with larger 116-meter-diameter rotors on 36 turbines. Studies of the effect of the increase in rotor diameter and rotor swept area on bird and bat mortality have shown no effect (Barclay et al. 2007, Everaert 2014, Zimmerling and Francis 2016). The effect of turbine repowering on birds and bats may be undetectable. The Certificate Holder has analyzed project-specific postconstruction fatality monitoring to characterize potential avian fatality risk

associated with repowering the Facility. The Avian Risk Assessment and LJIIA Fatality Monitoring Plan are included in Attachments 11 and 12, respectively. The project-specific postconstruction fatality monitoring data have been evaluated in the context of publicly available regional fatality data. Results of the analysis are included in Attachment 11.

The Certificate Holder will comply with Conditions 82 through 89 during repower activities and in operation of the Facility following repower activities. Temporary disturbance will be restored following the completion of repower activities. The Certificate Holder will mitigate for temporary impacts to habitat subtypes anticipated to take longer than 3 to 5 years to recover to account for temporal loss of habitat while these habitats recover following revegetation of repower efforts at the Facility. The Certificate Holder maintains an existing 92-acre habitat mitigation area (HMA) from initial construction of the Facility, and will complete enhancement actions within a portion of the existing HMA as habitat mitigation for temporary impacts associated with the repower of the Facility. The Draft Habitat Mitigation Plan is included in Attachment 13.

For these reasons, the Certificate Holder maintains that the Council may conclude that the Facility, as amended by RFA3, will continue to comply with OAR 345-022-0060.

5.10 OAR 345-022-0070 Threatened and Endangered Species

> *To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:*
>
> *(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:*
>
> > *(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or*
> >
> > *(b)If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and*
>
> *(2) For wildlife species that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction and operation of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.*

The Council previously found in the Final Order on Amendment 2 that the Facility complies with the Council's Threatened and Endangered Species Standard. Based on compliance with existing Site Certificate conditions, the Council determined the Facility is not likely to cause a significant reduction in the likelihood of survival of any threatened or endangered species.

Condition 87 requires that the Certificate Holder perform the long-term monitoring for areas of previous use by WGS given the occurrence of WGS within the Facility site boundary. WGS habitat and colonies were first identified during preconstruction surveys in 2005 to 2007. Postconstruction surveys were conducted in 2011 and consultation with ODFW recommended ongoing surveys every 3 years for the lifetime of the Facility. These ongoing surveys were conducted in 2014, 2017, 2021, and 2023 using species-specific protocols described in the 2007 LJII Application for Site Certificate and approved by ODFW. The WGS surveys scheduled for 2020 were delayed until 2021 due to COVID-19 restrictions.

For this RFA3, the Certificate Holder conducted WGS surveys of the repower corridor. Before initiating WGS surveys in 2023, data from WGS surveys conducted from 2005 to 2021 were reviewed, including the annual wildlife monitoring reports for 2017 through 2021, along with aerial photography and habitat data. Coordination occurred with Steven Cherry of ODFW via email on May 23, 2023, to confirm the WGS survey protocol (Attachment 13; provided under separate confidential cover).

WGS field surveys were conducted in two rounds (April 17 to 21 and May 15 to 19 of 2023) during the active squirrel season (March 1 to May 31) when WGS were most likely to be detected. Surveys used a systematic transect approach, in which qualified biologists walked evenly spaced transects searching for burrow openings and WGS sightings, listening for vocalizations, and looking for other signs such as scat and soil disturbance. A WGS colony not previously identified during operational monitoring was detected and mapped on May 18, 2023, and is located adjacent to, but outside, the repower corridor. The colony is in a location that previously had no WGS use, as documented in the 2011, 2014, 2017, and 2021 surveys. This WGS colony contained approximately 20 burrows within a gently sloped landform surrounded by predominantly native grasses and forbs with a lower percent coverage of low shrubs. Multiple vocalizations, recent tracks, and the presence of fresh scat confirmed WGS were active in this colony. The colony was mapped in accordance with ODFW protocols. A 785-foot WGS setback buffer around the colony extends into the repower corridor and is identified as Category 1 habitat, with the exception of permanently disturbed areas that are identified as Category 6 habitat (Figure 7B) and those areas previously disturbed during Facility construction that are identified as Category 2 habitat.

The 785-foot WGS buffer captures an existing access road and an operating wind turbine as well as areas previously disturbed during Facility construction. This RFA proposes to repower the existing operating turbine and temporarily widen the existing access road to allow for repower activities, such as equipment delivery and assembly. The existing turbine pad and access road (0.78 acre) remain Category 6 habitat because they are existing developed areas. As currently proposed, repower activities will extend beyond the existing road and turbine pad within the repower corridor and result in new temporary disturbance within the 785-foot WGS buffer and the area previously disturbed during original Facility construction; however, repower activities will not occur within 236 feet or result in direct impacts to the colony. In total, the active WGS colony comprises approximately 0.175 acre, and the 785-foot WGS buffer around the colony is approximately 47.1 acres (of which approximately 22.6 acres overlaps the repower corridor). Within the 785-foot buffer are 16.5 acres of Category 1 habitat. As discussed with ODFW, the previously disturbed area is treated as Category 2 and totals about 5.3 acres, and 0.78 acre is Category 6 habitat.

The Facility has an existing Incidental Take Permit (ITP) for WGS issued by ODFW in 2008, allowing for the incidental take of up to 10 of the state-listed endangered species during construction and up to five per year for the operating life of the Facility (Attachment 14; provided under separate confidential cover). The Facility has had no incidental operational take of WGS to date. The active WGS colony identified during the 2023 survey was observed in-between ITP WGS Sites 4b and 4c, near what is now the M turbine string. The ITP recognized the possibility that an increase in the local population of WGS over the life of the project could expose more squirrels to the risks of collision or other disturbance during Facility operation. The repower activities are associated with the Facility's ongoing operations and maintenance and will occur during the term of the ITP.

The increased turbine blade length and reduced minimum ground clearance from 30 meters to 21 meters is not anticipated to affect WGS, a ground-dwelling species. The Certificate Holder will complete a protocol-level WGS preconstruction survey to confirm the limits of the active WGS colony identified in 2023 to determine avoidance and minimization methods during construction. If the WGS colony identified in 2023 is deemed no longer active as a result of the preconstruction survey, construction activities will proceed as planned. If the WGS colony is identified as active during preconstruction surveys, the Certificate Holder will enact avoidance and minimization measures during repower activities in accordance with the

ITP. For example, the Certificate Holder will implement environmental training for workers, clearly flag the boundaries of the colony and enact a buffer of 150 feet from the perimeter of the colony, limit work to approved areas outside of the 150-foot buffer, require biological compliance monitors onsite during repower activities within the 785-foot WGS buffer, prepare an Erosion and Sediment Control Plan as part of the 1200-C, and limit vehicle speed on access roads. Following repower, temporary disturbance areas will be restored according to the Revegetation and Noxious Weed Control Plan (Attachment 5) and monitoring for WGS will continue every 3 years for the duration of operation per Condition 87.

The 2007 LJII Application for Site Certificate noted the Certificate Holder would monitor the status of sessile mousetail (*Myosurus sessilis*), a nonsensitive species. The status of sessile mousetail has not been upgraded since RFA2. It is not currently a threatened, endangered, or candidate species. The Certificate Holder will, in coordination with ODFW, continue to monitor the status of the sessile mousetail and, if necessary, conduct a repower preconstruction survey for sessile mousetail in accordance with Condition 84(e).

RFA3 will maintain compliance with the Threatened and Endangered Species Standard and will not impair the Certificate Holder's ability to comply with the Site Certificate or require new conditions or a change to the Site Certificate. Therefore, the Council may conclude that the Facility, as amended by LJIIA RFA3, will continue to comply with OAR 345-022-0070.

5.11 OAR 345-022-0080 Scenic Resources

> *(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic resources and values identified as significant or important in local land use plans, tribal land management plans and federal land management plans for any lands located within the analysis area described in the project order.*
>
> *(2) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*

The Council previously found that the Facility complies with the Scenic Resources Standard. The Final Order on Amendment 2 identifies scenic resources previously evaluated within 10 miles from the approved site boundary (Figure 8A). The Certificate Holder again inventoried the scenic resources within the 10-mile analysis area and those resources are identified in Table 5-5.

Cottonwood Canyon is a new scenic resource that has been designated since RFA2. The Certificate Holder reviewed applicable plans and policies (refer to Table 5-5) to evaluate if management of scenic resources in the analysis area has changed since RFA2. The GCCP (Gilliam County 2017) is the only land use plan in the analysis area updated since RFA2, and the update did not include provisions that changed scenic resources. The total number of wind turbines will decrease from 43 to 40. No new potential visual impacts to previously evaluated scenic resources are anticipated (Figure 8B); total turbine tip height will be increased by the Repower but will remain less than the 150 meters previously approved in the Site Certificate.

The Certificate Holder completed a ZVI analysis that modeled all 43 turbines with total tip height of 138 meters as a "worst-case scenario" for repowered project visibility (note that only 36 turbines are proposed for repowering). The change to the minimum blade clearance will not affect the visibility of the Facility from scenic resources, as the evaluated total tip height is less than what was previously evaluated and approved as a part of the Site Certificate. Repowered turbines will remain under the 150-meter total tip height authorized in the Site Certificate; therefore, the Council may conclude that no significant adverse

impacts on scenic resources will result from this RFA3 and that the Facility, as amended, will continue to comply with OAR 345-022-0080.

Table 5-5. Scenic Resources within the Analysis Area

Name of Scenic Resource	Jurisdiction	Plan	Scenic Resources Specified in Plan (Yes/No)	Important or Significant Scenic Resources Identified in Analysis Area (Yes/No)	Plan Location of Scenic Resources Discussed	Distance and Direction from Site Boundary
Oregon National Historic Trail	U.S. National Park Service	Comprehensive Management and Use Plan, Management and Use Plan Update, Final Environmental Impact Statement – Oregon National Historic Trail, Mormon Pioneer National Historic Trail	No	No	Scenic resources are not identified in the plan	1.4 miles south
Columbia River – Jones Canyon Viewpoint	Oregon Department of Transportation	N/A	No	No	N/A	1.5 miles north
Lewis and Clark National Historic Trail	U.S. National Park Service	Comprehensive Management and Use Plan, Management and Use Plan Update, Final Environmental Impact Statement – Oregon National Historic Trail, Mormon Pioneer National Historic Trail	No	No	Scenic resources are not identified in the plan	2.2 miles north
Horn Butte Area of Critical Environmental Concern	BLM	Two Rivers Resource Management Plan and Record of Decision	No	No	Not identified as a scenic resource in the plan	3.7 miles east
John Day Wild and Scenic River	BLM	John Day Basin Record of Decision and Resource Management Plan	Yes	Yes	Visual resources; Special Management Designations (Wild and Scenic Rivers)	5.1 miles southwest

Name of Scenic Resource	Jurisdiction	Plan	Scenic Resources Specified in Plan (Yes/No)	Important or Significant Scenic Resources Identified in Analysis Area (Yes/No)	Plan Location of Scenic Resources Discussed	Distance and Direction from Site Boundary
Blue Mountain Scenic Byway	U.S. Forest Service	Umatilla National Forest Land Management Plan	Yes	Yes	Scenic Byways and All-American Roads	6.4 miles east
Willow Creek Wildlife Area	ODFW	Columbia Basin Wildlife Areas Management Plan	No	No	Columbia Basin Wildlife Areas Management Plan	9.2 miles northeast
Cottonwood Canyon State Park	OPRD	Cottonwood Canyon State Park Comprehensive Plan	Yes	Yes	Park Strategies and Operations: Scenic Resource Management	8.9 miles south

Note:

N/A = not applicable

5.12 OAR 345-022-0090 Historic, Cultural and Archaeological Resources

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, 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:

(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 358.905(1)(c); and

(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).

(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

Response: The Council previously relied on cultural resources surveys conducted (Ballantyne and McClintock 2005, McClintock 2006a, McClintock 2006b, McClintock and Sharp 2009, Wilt and McClintock 2011) and conditions imposed in the amended Site Certificate to address the Facility's compliance with the Historic, Cultural, and Archaeological Resources Standard. The entire site boundary was surveyed as part of the 2007 LJII Application for Site Certificate. In addition, surveys within the site boundary and the repower corridor have been surveyed for an unrelated proposed project. Site Certificate Condition 45 requires the Certificate Holder to provide ODOE with a map that shows the final design locations and disturbances along with areas surveyed.

The repower corridor was surveyed for cultural resources on three separate visits between May and August 2023 using linear transects at 20-meter intervals. Several previously recorded resources were revisited for the repower corridor survey. These resources were either (1) previously recorded archaeological resources documented within the project footprint that were previously determined not eligible, or (2) archaeological resources documented near the repower corridor survey area that may have been larger than originally documented. A cultural resources survey report dated September 2023 was filed with the Oregon State Historic Preservation Office in advance of the filing of this RFA3 with ODOE. A revised cultural resources report documenting survey of approximately 24 acres not included in the September 2023 report was filed in December 2023 (Attachment 16; provided under separate confidential cover). A total of seven previously recorded archaeological sites within or near the Facility repower corridor were revisited during the 2023 survey. Of these, two archaeological sites are potentially eligible for listing on the National Register of Historic Places and are discussed below.

Archaeological site 35GM373 is a homestead or ranching complex that was previously documented in 2012 as part of a separate project (Kelly et al. 2013). The site was not evaluated during the original survey for LJIIA. Upon revisit in 2023, the site boundary polygon available on the Oregon State Historic Preservation Office database did not match what was observed on the ground or what was provided on the original site form. The site boundary was revised per the 2023 survey and overlaps the repower corridor.

Archaeological site 35GM388 was documented in 2012 as a small refuse scatter and a single pit feature as part of a separate transmission line project. The site was not evaluated at the time. During the 2023 survey, two excavated pits and a scatter of historic domestic and agricultural debris were encountered that extended the original site boundary for 35GM388 to the west, within the LJIIA Facility repower corridor.

Avoidance of sites 35GM373 and 35GM388 is recommended. If necessary for repower activities, the existing roadway to the south of site 35GM373 should be expanded to the south, to avoid the site. If sites 35GM373 and 35GM388 are avoided, the project will have no impacts on significant or potentially significant archaeological resources. Four Bonneville Power Administration (BPA) transmission lines (Slat-John Day No. 1, Morrow Flat-Jones Canyon No. 1, Jones Canyon-Santiam No. 1, and Ashe-Marion No. 2) have been identified as historic structures and are eligible for NHPA. These four transmission lines bisect the repower corridor running between existing turbines in four locations. The extension of the turbine tip heights on existing towers within the survey area will have no potential to adversely affect any of the BPA transmission lines being treated as eligible for listing on the National Register of Historic Places. These transmission structures existed at the time the Facility was originally approved and the proposed Repower does not increase the overall originally approved turbine blade tip height. The Facility, as modified, will avoid impacts to the transmission structures and the proposed changes will have no effect on the properties' integrity of location, association, design, materials, or workmanship.

The Certificate Holder will avoid identified cultural resources and historic structures in planning and implementation of the Repower. RFA3 proposes no changes that will alter the basis for the Council's previous findings regarding cultural, historic, and archaeological resources. Therefore, the Council may conclude that the Facility, as amended by LJIIA RFA3, will continue to comply with OAR 345-022-0090.

5.13 OAR 345-022-0100 Recreation

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of a facility, taking into account mitigation, are not likely to result in a significant adverse impact to important recreational opportunities in the analysis area as described in the project order. The Council shall consider the following factors in judging the importance of a recreational opportunity:

(a) Any special designation or management of the location;

(b) The degree of demand;

(c) Outstanding or unusual qualities;

(d) Availability or rareness;

(e) Irreplaceability or irretrievability of the opportunity.

(2) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

Response: The Recreation Standard requires that the Council find that the design, construction, and operation of a facility will not likely result in significant adverse impacts to "important" recreational opportunities within the analysis area. The Council previously found that the Facility complies with the Council's Recreation Standard and notwithstanding a recent amendment to OAR 345-022-0100 (December 19, 2022), the Certificate Holder demonstrates that the Facility, as amended, will still not result in significant adverse impacts on important resources near the Facility.

Since Council approved RFA2, the Cottonwood Canyon State Park was established in September 2013 and it is located within the analysis area. Recreational opportunities within the analysis area now include:

- Arlington Marina
- Earl Snell Memorial Park (City Park)
- China Creek Golf Course
- Alignment of Oregon National Historic Trail
- Horn Butte Area of Critical Environmental Concern
- John Day Wild and Scenic River

Refer to Figure 9A for a map of these recreational opportunities.

The Council previously evaluated the recreational opportunities in the analysis area and concluded that none were of importance under the Recreational Standard except the opportunity to view intact segments of the Oregon National Historic Trail alignment (Site Certificate 2007).

Transportation routes providing access to the important recreation opportunities are shown on Figure 9B. Construction traffic for the Repower demands on local roads and the adjacent highway network (I-84 and OR 19) will be minor due to the rolling upgrading schedule, and transportation effects during the turbine upgrades and operation are expected to be temporary and will not adversely affect recreational sites and opportunities or access to them.

A visual analysis of the repowered turbines indicates no change in the visibility of the Facility from the important recreation opportunities identified (Figure 9C). The Facility, as modified, will continue to comply with Condition 27, with the exception of Condition 27(e) for minimum blade clearance and that blade clearance will have no effect on important recreational opportunities as it does not change the visibility impacts. The turbine heights and turbine blade tip heights will remain within the limits previously imposed by the Council. Therefore, the Council may conclude that the Facility, as amended by RFA3, will continue to comply with OAR 345-022-0100.

5.14 OAR 345-022-0110 Public Services

> *(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.*
>
> *(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*
>
> *(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*

Response: The proposed changes do not alter the Facility's use, operational workforce, or reliance on sewers and sewage treatment, water, stormwater drainage, solid waste management, housing, police and fire protection, health care, or schools, and there are no new circumstances that will alter the basis for the Council's earlier determination.

The Certificate Holder has reached out to the area service providers to confirm that the Facility, as amended, is not likely to result in significant adverse impacts to public service providers or facilities. Certificate Holder correspondence with service providers is included in Attachment 17.

Sewage, Stormwater, Solid Waste

Consistent with the Final Order (September 2007), the Certificate Holder proposes to provide portable toilets to handle onsite sewage during repower activities, consistent with Condition 96. The Certificate Holder will ensure the contractor pursues a new NPDES 1200-C permit for repower activities, which will ensure proper onsite handling of stormwater. The repower activities will be conducted consistent with Condition 70, requiring compliance with an Erosion and Sediment Control Plan. With respect to solid waste, the Certificate Holder will take waste to the Columbia Ridge landfill or other licensed facility by a licensed hauler. Refer to the discussion under Waste Minimization (Section 5.16).

Water

The Certificate Holder anticipates needing up to 35 million gallons of water for repower activities. Water will be used primarily for dust control and concrete mixing. Water is anticipated to come from the City of Arlington (City) via truck, as was done during Facility construction. The Certificate Holder will coordinate with the City; coordination correspondence is provided as Attachment 18. There will be no water changes during Facility operations once repower activities are complete.

Housing, Police, Fire Protection, Health Care, and Schools

The estimated workforce for the Repower will be less than the initial LJII project workforce. Repower activities are expected to take up to 12 months to compete. The Certificate Holder is anticipating 200 personnel to support the Repower. The personnel will comprise a mix of supervisory staff, subcontractors, and labor for collar/fiber-reinforced plastic activities and turbine-raising support. These individuals will be coming and going throughout the repower activities, as necessary.

The closest towns in the vicinity are Arlington, Boardman, Goldendale, and Hermiston. There will be a mixture of mobile homes, rental properties (e.g., homes, apartments), and hotels used by the temporary personnel. Any personnel hired from the local community would not require housing. Adequate temporary (9- to 12-month) housing is available for temporary employees hired from outside the area. Per an online search conducted on December 12, 2023, Arlington has three hotels, Boardman has six hotels, Hermiston has nine hotels, and Goldendale has seven hotels. Dufur and Morro each have one hotel and Biggs Junction has three hotels. In addition, an Airbnb search conducted on December 13, 2023, identified up to 107 rentals in the Arlington area. Multiple commercial RV parks are also located in the region. When other nearby wind power projects were constructed, some of the construction crews were housed in an RV park in Wasco. As a result of the adequate temporary housing options, there will be no adverse impacts to housing in the analysis area because of the increase in anticipated construction workers.

The Repower will not change the operations workforce. The Council previously found in the LJII Final Order that construction and operation of the LJII facility would not have a significant adverse effect on the supply of housing, local police agencies, fire response services, health care services, and schools.

Traffic Safety

With respect to traffic and transportation systems, the Certificate Holder is proposing to use the previously approved primary and alternate transport routes and will not exceed the haul estimates previously approved by the Council.

While some increase in traffic is anticipated during repower activities, the temporary increase in the level of traffic will not significantly affect the level of service on local roads. Repower components and construction equipment and materials are likely to arrive via I-84, OR 19, and Rattlesnake Road, which is the same route used during the initial construction of the Facility. General traffic volumes on these routes have increased since RFA2. Average annual daily traffic on the I-84 in the segment west of OR 19 increased from 11,900 vehicles in 2015 to 14,515 in 2021 (most recent year available) and on OR 19 south of I-84 from 647 in 2015 to 897 in 2021 (ODOT n.d.). However, the volume of traffic for the Repower will be substantially less than for the initial Facility construction. Further, component deliveries during repower activities will be staged over time to lessen the impact on traffic and roadway conditions. The proposed changes include intersection and turning radius improvements to accommodate component deliveries. The Certificate Holder will consult with Gilliam County Road Department on needed intersection improvements. The Certificate Holder will work with Gilliam County Road Department to update the road use agreement as necessary to account for the anticipated repower temporary traffic.

The Certificate Holder does not anticipate that repower traffic will interfere with harvest time activities such as tractor movement between fields or trucks delivering agricultural products to market. Most of the farming activities in the vicinity are conducted by Certificate Holder's underlying landowners and Certificate Holder is communicating repower activity scheduling with them directly.

Air Traffic Safety

The Certificate Holder has coordinated with the Oregon Department of Aviation (Attachment 19) and the Federal Aviation Administration and anticipates Determinations of No Hazard for the proposed repowering in the spring of 2024.

Based on the preceding information, the Council may conclude that the Facility, as amended, will continue to comply with OAR 345-022-0110.

5.15 OAR 345-022-0115 Wildfire Prevention and Risk Management

(1) To issue a site certificate, the Council must find that:

(a) The applicant has adequately characterized wildfire risk within the analysis area using current data from reputable sources, by identifying:

(A) Baseline wildfire risk, based on factors that are expected to remain fixed for multiple years, including but not limited to topography, vegetation, existing infrastructure, and climate;

(B) Seasonal wildfire risk, based on factors that are expected to remain fixed for multiple months but may be dynamic throughout the year, including but not limited to, cumulative precipitation and fuel moisture content;

(C) Areas subject to a heightened risk of wildfire, based on the information provided under paragraphs (A) and (B) of this subsection;

(D) High-fire consequence areas, including but not limited to areas containing residences, critical infrastructure, recreation opportunities, timber and agricultural resources, and fire-sensitive wildlife habitat; and

(E) All data sources and methods used to model and identify risks and areas under paragraphs (A) through (D) of this subsection.

(b) That the proposed facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan approved by the Council. The Wildfire Mitigation Plan must, at a minimum:

(A) Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;

(B) Describe the procedures, standards, and time frames that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;

(C) Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;

(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source; and

(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.

(2) The Council may issue a site certificate without making the findings under section (1) if it finds that the facility is subject to a Wildfire Protection Plan that has been approved in compliance with OAR chapter 860, division 300.

(3) This Standard does not apply to the review of any Application for Site Certificate or Request for Amendment that was determined to be complete under OAR 345-015-0190 or 345-027-0363 on or before the effective date of this rule.

Response: Since the Council approved RFA2, the Council has adopted the new Wildfire Fire and Risk Prevention Standard. The standard requires the Council to find that a certificate holder has adequately characterized wildfire risk associated with a facility, and that a facility would operate in compliance with a Council-approved wildfire mitigation plan.

Previously, the Council approved the Facility and imposed Condition 61 requiring that Certificate Holder develop and implement fire safety plans during construction operations, in consultation with local fire control authorities. These plans have been in place and there have been no reported incidents of wildfire to date. Conditions 61 to 66 in the Site Certificate address fire risk and safety at the Facility. The Certificate Holder will continue to comply with these conditions. In addition, the Certificate Holder demonstrates that the operational Facility, as amended, will also comply with Council's new wildfire standard. RFA3 only involves proposed modifications within the repower corridor (approximately 1,565 acres), yet the Certificate Holder characterized the entire site boundary and micrositing area (approximately 6,404 acres). The Certificate Holder used data from the *Oregon Community Wildfire Planning Tool (CWPP),* the *Wildfire Risk Explorer*, and the *Gilliam County Multiple-Jurisdictional Natural Hazards Mitigation Plan Baseline* to assess wildfire risk within the analysis area, including consideration of site topography, vegetation, existing infrastructure, regional climate, and burn probability.

The Certificate Holder developed a Wildfire Mitigation Plan, included as Attachment 20. The plan identifies the regional and site characteristics considered in wildfire risk and management of that risk (Figures 10A through 10G). It also illustrates the overall fire risk for the Facility (Figure 10H), indicating that less than 5 percent of the area within the LJIIA Facility site boundary has a very high/high wildfire risk, and approximately 95 percent of the site boundary has a low wildfire risk. High and very high risk areas are

associated with the existing BPA Slatt-Buckley 500-kV transmission line bisecting the Facility area and substation. Other areas with high risk to assets include along John Day Highway to the east of the site boundary and to the southeast near the Columbia Ridge Landfill operations. Wildfire risk conditions associated with existing vegetation, residential and commercial structures, and the relatively dry climate in the region outside the site boundary could result in fast-moving wildfires across agricultural areas that could enter the site boundary.

The Certificate Holder has considered wildfire risk and has implemented, and will continue to implement, the procedures, inspections, preventative actions, and personnel training protocol during operations as described in the Wildfire Mitigation Plan.

The Certificate Holder proposes to continue to comply with Conditions 61 through 66 for the repower activities and proposes additional condition language to ensure ongoing coordination with ODOE, the North Gilliam County Rural Fire Protection District, and the Arlington Fire Department in the development and implementation of a final Wildfire Prevention and Risk Management Plan, similar to what was adopted for the Oregon Trail Solar Final Order on Request for Amendment 1 (March 2023) in Condition 60(b) and (c).

For these reasons, and the reasons supporting the original Site Certificate approval, the Council may find that with the implementation of the Wildfire Prevention and Risk Management Plan, and ongoing compliance with Site Certificate conditions, the Facility, as amended, will comply with OAR 345-022-0115.

5.16 OAR 345-022-0120 Waste Minimization

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that, to the extent reasonably practicable:

(a) The applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, and when solid waste or wastewater is generated, to result in recycling and reuse of such wastes;

(b) The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas.

(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

Response: Like the original Facility construction, waste generated during the repower activities will consist primarily of concrete waste from turbine pad reinforcement, wood waste from wood forms for concrete pad reinforcement, and replaced turbine components. Other repower materials could include erosion control material such as straw bales and silt fencing, and packaging materials for turbine parts and other electrical equipment. The Certificate Holder will comply with Condition 98 of the Site Certificate and implement the same waste minimization measures for Facility construction to the proposed Repower. The Certificate Holder will also comply with Condition 69 during repower activities, which addresses preparation for, and responses to, spills and accidental releases of hazardous materials.

In addition to the waste described, Certificate Holder anticipates that the washdown of concrete trucks will be the major source of wastewater during repower activities. Truck washdown may occur at the turbine foundation locations that are being reinforced. The Certificate Holder will comply with Condition 73 during repower activities, to ensure that wastewater from onsite wash does not run off the Repower site and into otherwise undisturbed areas.

For these reasons, the Council may find that RFA3 does not alter the Facility's plans for solid waste management or wastewater handling, or management of waste generated by construction and operation of the Facility. The replaced turbine blades will be recycled or disposed of in a permitted landfill.

The existing Facility currently has 42 operating turbines (one turbine, Z2, has been previously decommissioned). Four turbines will remain operating as-is after the Repower. Therefore, 38 turbines will have equipment removed, with two additional turbines being fully decommissioned, leaving 36 turbines repowered with equipment upgrades. Total quantity of equipment to be removed as part of the Repower is as follows:

- 38 nacelles (1 nacelle per turbine)
- 114 blades (3 blades per turbine)

Based on the quantities above, up to 114 blades could be recycled. One of the turbines being fully decommissioned (M3) is due to a turbine fire. The blades at this turbine may or may not be recyclable, depending on the condition of the blades assessed at the time of removal.

Turbine blade recycling has been discussed and scoped as part of contract negotiations for the Repower project. The Certificate Holder is intending to contract turbine blade recycling with the selected contractor if recycling is deemed feasible through negotiations. Because a contract has not yet been finalized and signed, the Certificate Holder cannot commit to executing an agreement for turbine part recycling at this time.

Because turbine blade recycling has been scoped as part of contractor responsibilities during contract negotiations, the contractor is completing efforts regarding the execution of recycling. Refer to Attachment 21 included in this RFA3.

Other replaced components and repower materials will be disposed of in accordance with applicable regulations and industry practices. Therefore, the Council can rely on its previous conclusion and the existing Site Certificate conditions to demonstrate that Facility, as amended, will continue to comply with the Waste Minimization Standard.

5.17 OAR 345-024-0010 Public Health and Safety Standards for Wind Energy Facilities

To issue a site certificate for a proposed wind energy facility, the Council must find that the applicant:

(1) Can design, construct and operate the facility to exclude members of the public from close proximity to the turbine blades and electrical equipment.

(2) Can design, construct and operate the facility to preclude structural failure of the tower or blades that could endanger the public safety and to have adequate safety devices and testing procedures designed to warn of impending failure and to minimize the consequences of such failure.

Response: The Facility is located on private land, thereby limiting public access. At the closest point of rotation, the repowered turbine blades will be at least 21 meters above the ground. The Certificate Holder will continue to comply with the safety setback requires in Condition 39. Maps are provided in Attachment 22 with the applicable setback requirement, and buffers representative of turbine location and setback distance based on the repowered turbine height. The maximum blade tip height of the repowered turbines will remain within the limits previously approved in the Site Certificate (150 meters). Towers will remain smooth steel structures with no exterior ladders and will continue to have locked entry doors at ground level. The Facility, as amended, will not affect the Certificate Holder's ability to comply with Conditions 55 and 59, and during repower activities, the Certificate Holder will implement Conditions 50 and 56 again. Finally, once repower is complete, the Certificate Holder will continue to comply with Conditions 57, 58, and 60. Accordingly, the Council may find that the Facility, as amended, will not change the facts or circumstances upon which the Council relied in making findings regarding public health and safety at the Facility. The Facility, as amended, will not result in any new or increased risk of harm to public safety. RFA3 meets this standard, will not impair the Certificate Holder's ability to comply with conditions of the Site Certificate, and will not require new conditions or a change to existing conditions of the Site Certificate.

5.18 OAR 345-0024-0015 Cumulative Effects Standard for Wind Energy Facilities

To issue a site certificate for a proposed wind energy facility, the Council must find that the applicant can design and construct the facility to reduce cumulative adverse environmental effects in the vicinity by practicable measures including, but not limited to, the following:

(1) Using existing roads to provide access to the facility site, or if new roads are needed, minimizing the amount of land used for new roads and locating them to reduce adverse environmental impacts.

(2) Using underground transmission lines and combining transmission routes.

(3) Connecting the facility to existing substations, or if new substations are needed, minimizing the number of new substations.

(4) Designing the facility to reduce the risk of injury to raptors or other vulnerable wildlife in areas near turbines or electrical equipment.

(5) Designing the components of the facility to minimize adverse visual features.

(6) Using the minimum lighting necessary for safety and security purposes and using techniques to prevent casting glare from the site, except as otherwise required by the Federal Aviation Administration or the Oregon Department of Aviation.

Response: The Council previously found that the Facility complies with the Wind Energy Facility Cumulative Effects Standard (State of Oregon 2013). This RFA3 proposes to repower the Facility with reinforced turbine pads, replaced nacelles, generators, rotors, and blades. In addition, the Certificate Holder will install a new collector line system adjacent to the existing system. The Certificate Holder will comply with the existing Site Certificate conditions previously imposed for Facility construction and will continue to operate the Facility, as amended consistent with Site Certificate conditions applicable to operation (Conditions 59, 60, 83, 90, and 92). Accordingly, the Council may find that RFA3 applies the measures listed in OAR 345-024-0015, maintains compliance with the Cumulative Effects Standard for Wind Energy Facilities, will not impair the Certificate Holder's ability to comply with conditions of the Site Certificate, and will not require new conditions or a change to existing conditions of the Site Certificate.

5.19 OAR 340-035-0035 Noise Control Regulations for Industry and Commerce

The Certificate Holder proposes modifications to existing noise sources under DEQ's noise regulations. For wind energy facilities, the Certificate Holder needs to demonstrate ongoing compliance with OAR 340-035-035(1)(B)(iii). The Certificate Holder has selected a GE 2.5-MW turbine model for purposes of this RFA3. Once final turbine layout has been confirmed, the Certificate Holder will complete a noise analysis prior to the start of repower, consistent with Condition 94. On this basis, Council may find that the Facility, as modified, will continue to comply with the DEQ noise regulation.

The Certificate Holder maintains that no new mitigation or monitoring measures are required for compliance with the DEQ noise regulation. The existing Site Certificate conditions, specifically Conditions 93, 94, and 95, are sufficient to ensure that the Certificate Holder designs, constructs, and operates the Facility, as modified, in compliance with the DEQ noise regulation. The modifications do not affect the Certificate Holder's ability to comply with the existing Site Certificate conditions, and no new conditions are needed to manage potential noise impacts. Attachment 23 contains the updated confidential *Sound Level Analysis for the Leaning Juniper IIA Wind Power Facility*. Attachment 24 contains the list of names and addresses of all owners of noise-sensitive property, as defined in OAR 340-035-0015, within 1 mile of the Facility site boundary.

RFA3 will not alter the Certificate Holder's ability to comply with OAR 345-035-0035 or the existing conditions of the Site Certificate and will not require new conditions or a change to existing conditions of the Site Certificate. Therefore, the Council may conclude that the Facility, as amended, will continue to comply with OAR 340-035-0035.

5.20 Removal-Fill Law

The Certificate Holder conducted the survey delineation of the repower corridor on June 6 and 7, 2023. Wetland delineations were previously performed for the entire Facility micrositing corridor in 2005 (Oregon Department of State Lands [DSL] file number [#]05-0142 and #07-0116; Avangrid Renewables 2006) and 2007 (DSL #09-0422; CH2M 2009). The Certificate Holder's *2023 Wetlands and Nonwetland Waters Delineation Report* is included as Attachment 25.

The report identifies two wetlands and two discontinuous ephemeral waters (Wetlands 1 and 2 and Streams 1 and 2, respectively) within the repower corridor. None of these identified features, however, are likely to be considered federally jurisdictional because they are ephemeral and isolated. Refer to Tables 4 and 5 in Attachment 25. With respect to Oregon Removal-Fill Law, Wetlands 1 and 2 are likely jurisdictional whereas Streams 1 and 2 likely are not. The Certificate Holder has submitted the 2023 delineation report to DSL for concurrence (DSL #WD2023-0393). The Certificate Holder plans to avoid Wetlands 1 and 2. The Certificate Holder will continue to comply with Condition 72 and proposes modifications to Condition 72 to account for avoidance of the features described in this section. For these reasons, the Council may find that the Facility, as amended, does not affect the Certificate Holder's ability to meet applicable removal-fill laws.

5.21 Water Rights

The Site Certificate originally approved the trucking of construction water onsite, to be used for concrete mixing, road compaction and dust suppression. Certificate Holder proposes to do the same for repower activities. Approximately 35 million gallons of water could be used during repower activities and likely will

be obtained from the City of Arlington or other qualified service provider. No new or additional water needs will be needed for operations. The Certificate Holder will continue to comply with Conditions 76 and 77. For these reasons, Council may find that RFA3 will not result in impacts on water resources not previously addressed by Council review or impair the Certificate Holder's ability to comply with conditions of the Site Certificate, and will not require new conditions or a change to existing conditions of the Site Certificate.

6. Property Owners Located within or Adjacent to the Site of the Facility – OAR 345-027-0360(1)(f)

(f) A list of the names and mailing addresses of property owners, as described in this rule:

(A) The list must include all owners of record, as shown on the most recent property tax assessment roll, of property located:

(iii) Within 500 feet of property which is the subject of the request for amendment, where the subject property is within a farm or forest zone; and

(B) In addition to incorporating the list in the request for amendment, the applicant must submit the list to the Department in an electronic format acceptable to the Department.

Response: Attachment 26 provides a list of names and mailing addresses for property owners located within 500 feet of property underlying the approved Facility site boundary. A corresponding map shows the tax lot locations for each property. The property owner list and map were developed from current Gilliam County Assessor data received on January 4, 2024.

7. Conclusion

This RFA3 demonstrates that the Facility, as amended, complies with all applicable laws and Council standards. For the reasons stated herein, the Certificate Holder respectfully requests approval of this RFA3.

8. References

Avangrid (formerly Iberdrola) Renewables. 2006. *Leaning Juniper II Wind Power Facility Application for Site Certificate*. Exhibit J, "Wetlands." September.

Ballantyne, Raena, and Robin McClintock. 2005. Cultural Resources Survey Report for the Leaning Juniper Wind Energy Project, Gilliam County, Oregon. Report prepared for PPM Energy. Report Prepared by CH2M HILL, Inc.

Barclay, R. M. R., E. F Baerwald, and J. C. Gruver. 2007. Variation in bat and bird fatalities at wind energy facilities: assessing the effects of rotor size and tower height. *Canadian Journal of Zoology*. Vol. 85. pp. 381–387.

CH2M HILL, Inc. (CH2M). 2009. Addendum to Leaning Juniper II Wind Power Facility Wetlands and Waters Delineation Report. June 8.

Everaert, J. 2014. Collision risk and micro-avoidance rates of birds with wind turbines in Flanders. *Bird Study*. Vol. 61(2). pp. 220–230.

Federal Emergency Management Agency (FEMA). 2023. "Flood Maps." Last updated March 30. https://www.fema.gov/flood-maps.

Gilliam County. 2017. "Comprehensive Plan & Zoning Ordinance." May 3. https://www.co.gilliam.or.us/departments/planning_department/comprehensive_plan_and_zoning_ordinance.php#revize_document_center_rz258.

Kelly, Michael S., Elena Nilsson, Stephanie Butler, Melinda Button, and Russell Bevill. 2013. *Archaeological Survey for Portland General Electric's Cascade Crossing Transmission Project, Morrow, Gilliam, Sherman, and Wasco Counties, Oregon*. SHPO Report #26783. Report prepared for Portland General Electric Company. Report prepared by URS Corporation.

McClintock, Robin. 2006a. Addendum: Leaning Juniper Wind Power Facility Layout Revisions Survey. SHPO Report #21480. Report prepared for PPM Energy. Report prepared by CH2M HILL, Inc.

McClintock, Robin. 2006b. Addendum II: Leaning Juniper II Wind Power Facility Layout Revisions Survey – April. SHPO Report #21480. Report prepared for PPM Energy. Report prepared by CH2M HILL, Inc.

McClintock, Robin, and Jim Sharpe. 2009. Preconstruction Survey Addendum to the Cultural Resources Survey Report for the Leaning Juniper II Wind Power Facility – LJIIA. SHPO Report #22668. Report prepared for Iberdrola Renewables, Inc. Report prepared by CH2M HILL, Inc.

Natural Resources Conservation Service (NRCS). 2022. *Web Soil Survey*. United States Department of Agriculture. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

Oregon Department of Transportation (ODOT). n.d. "Traffic Counting." Accessed August 23, 2023. https://www.oregon.gov/odot/data/pages/traffic-counting.aspx.

State of Oregon. 2013. *Final Order on Request for Amendment 2 to the Site Certificate*. p. 39. June 21.

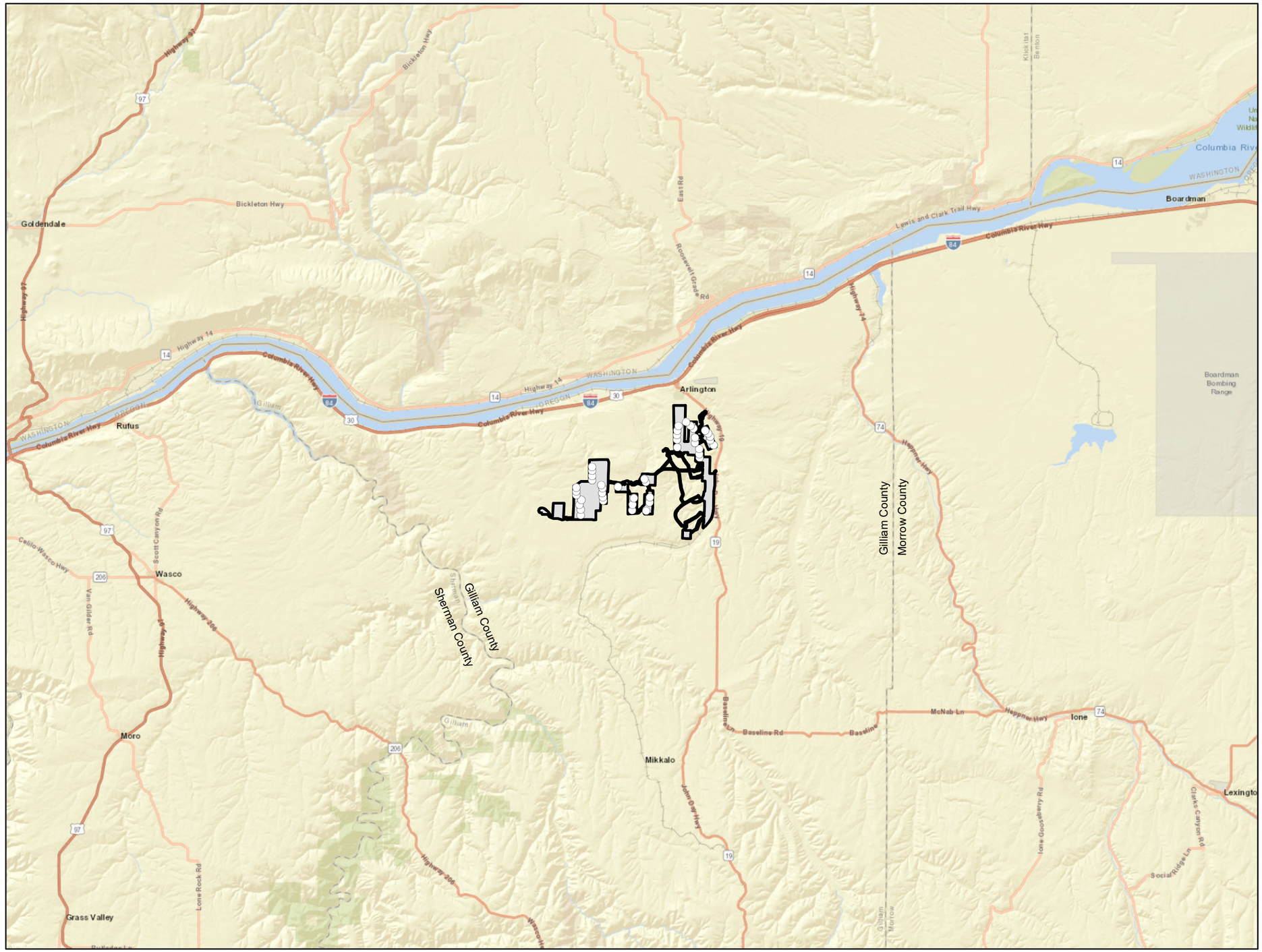
U.S. Geological Survey (USGS). 2020. USGS Aerial Photography Dataset. https://www.oregon.gov/odot/data/pages/traffic-counting.aspx.

U.S. Geological Survey (USGS). n.d. "Search Earthquake Catalog." Accessed August 23, 2023. https://earthquake.usgs.gov/earthquakes/search/.

Wilt, Julie, and Robin McClintock. 2011. Testing at Site 35GM137 Leaning Juniper II Wind Power Facility, Gilliam County, Oregon. SHPO Report #24757. Report prepared for Iberdrola Renewables, Inc. Report prepared by CH2M HILL, Inc.

Zimmerling, J. R., and C. M. Francis. 2016. Bat mortality due to wind turbines in Canada. *Journal of Wildlife Management*. Vol. 80. pp. 1360–1369.

Figures



Legend

- Site Boundary
- Existing Turbine

N

0 2.5 5 10
Miles

Figure 1
Facility Site Vicinity Map
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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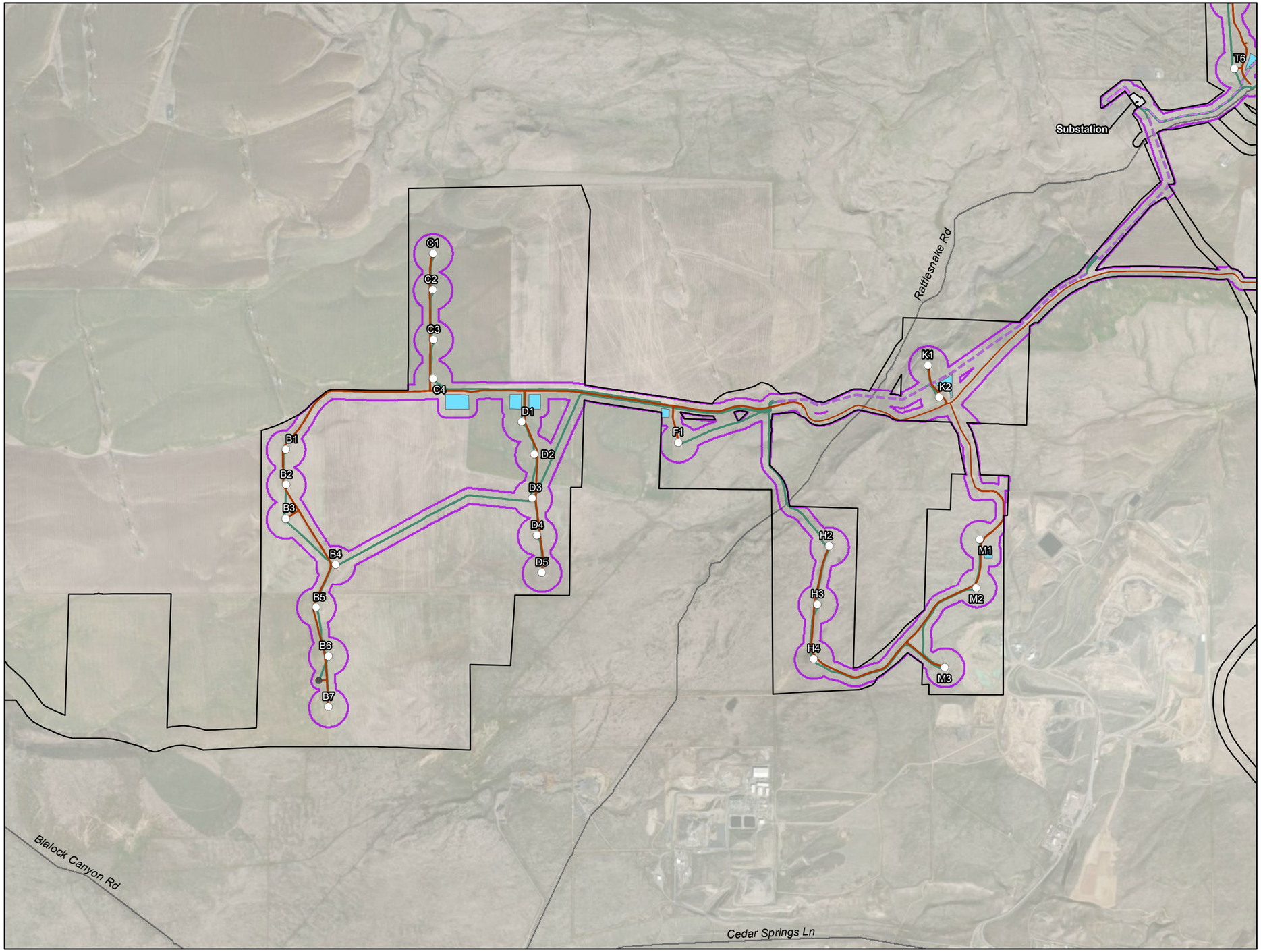

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

N

0 0.25 0.5 1
Miles

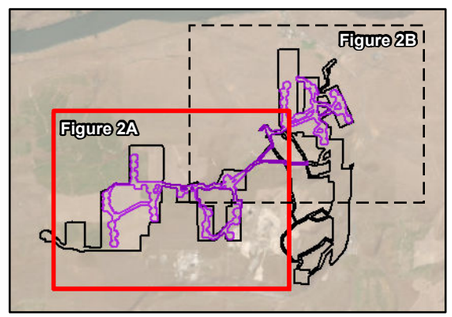

Figure 2A
Area Subject to RFA3 with Site Boundary – Southwestern Portion
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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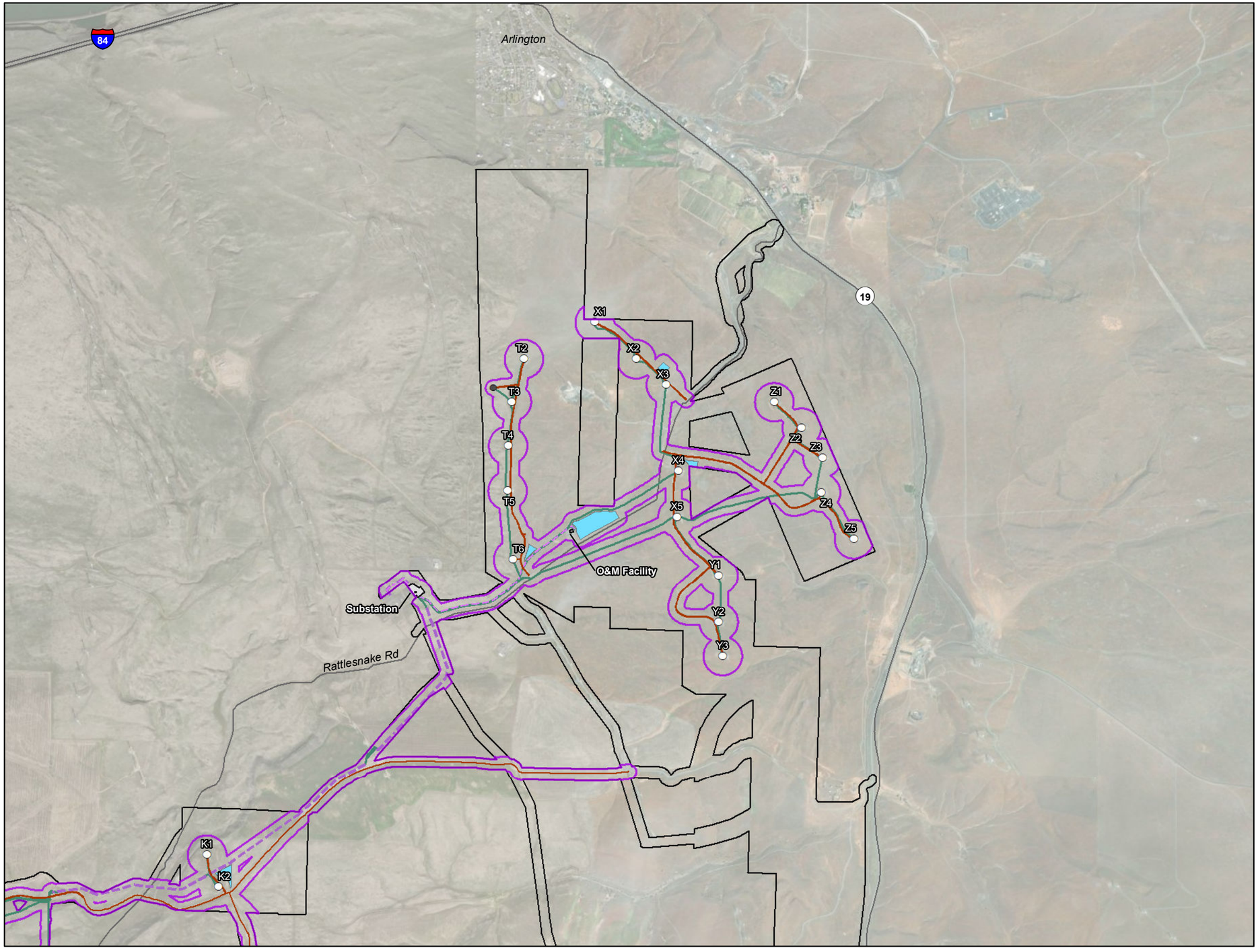

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

N

0 0.25 0.5 1
Miles

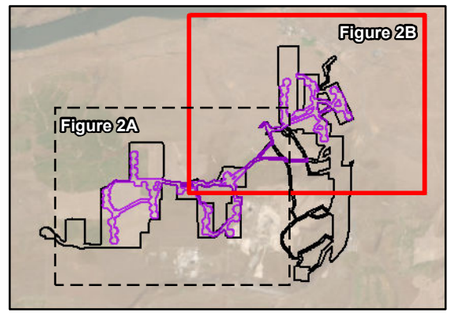

Figure 2B
Area Subject to RFA3 with Site Boundary – Northeastern Portion
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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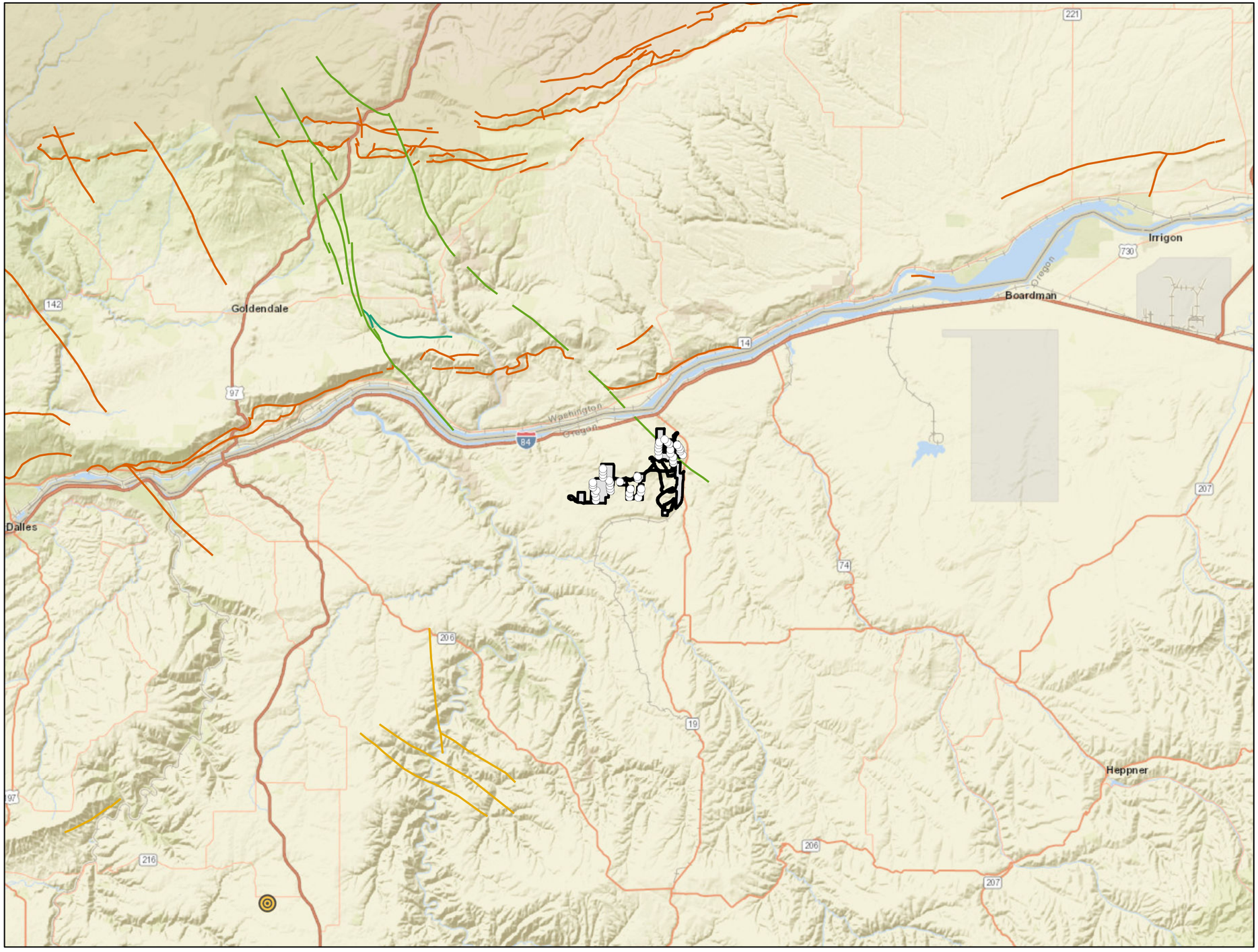

Legend

- Site Boundary
- Existing Turbine

Significant Earthquakes 1568-2009

- 3.0 - 3.9 Magnitude

Faults and Folds

- Latest Quaternary
- Undifferentiated Quaternary
- Middle and Late Quaternary
- Class B

N

0 5 10 20

Miles

Figure 3A
Historical Earthquakes and Faults
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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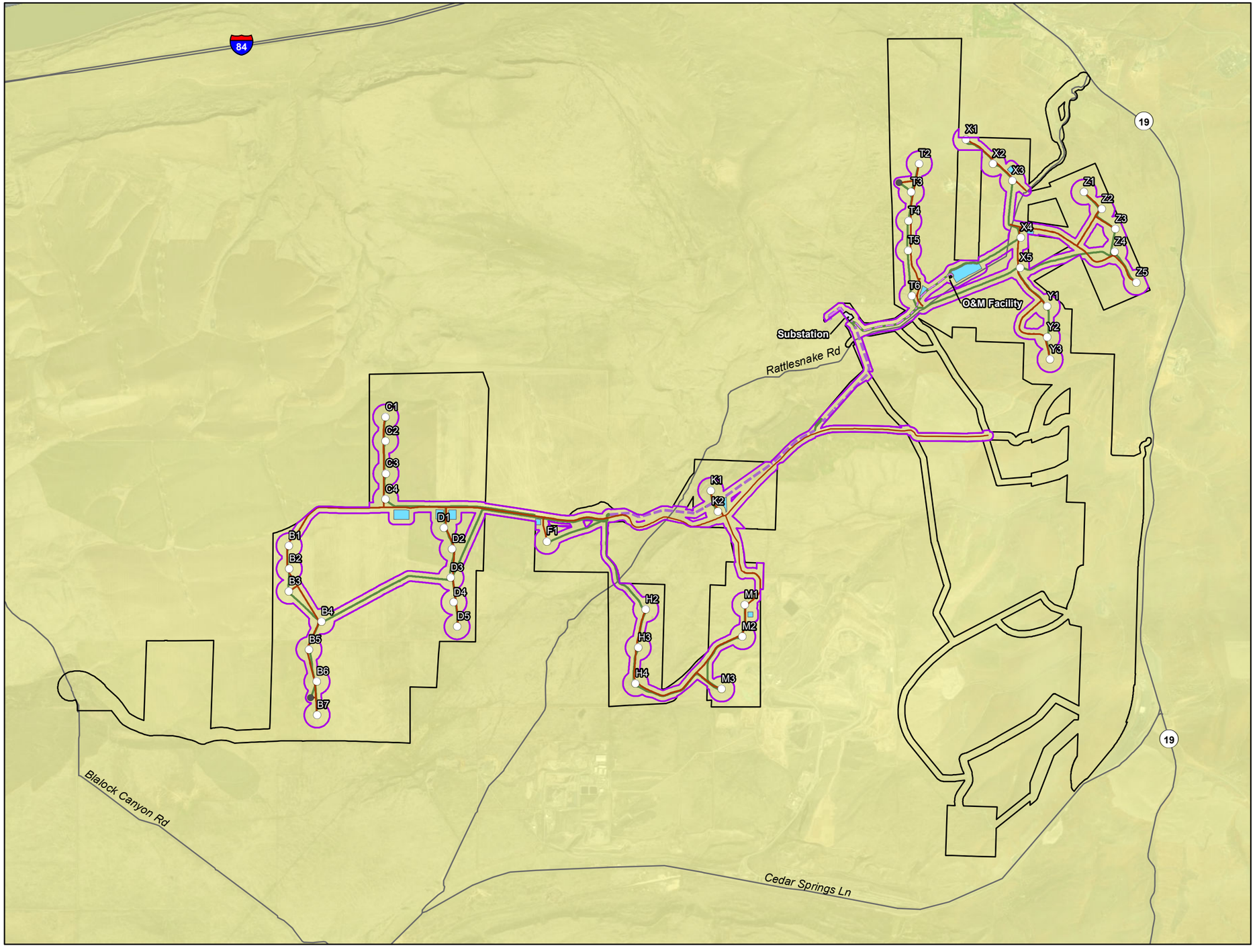

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Seismic Hazards

- Low (5-9)

N

0 0.5 1 2

Miles

Figure 3B
Seismic Risk
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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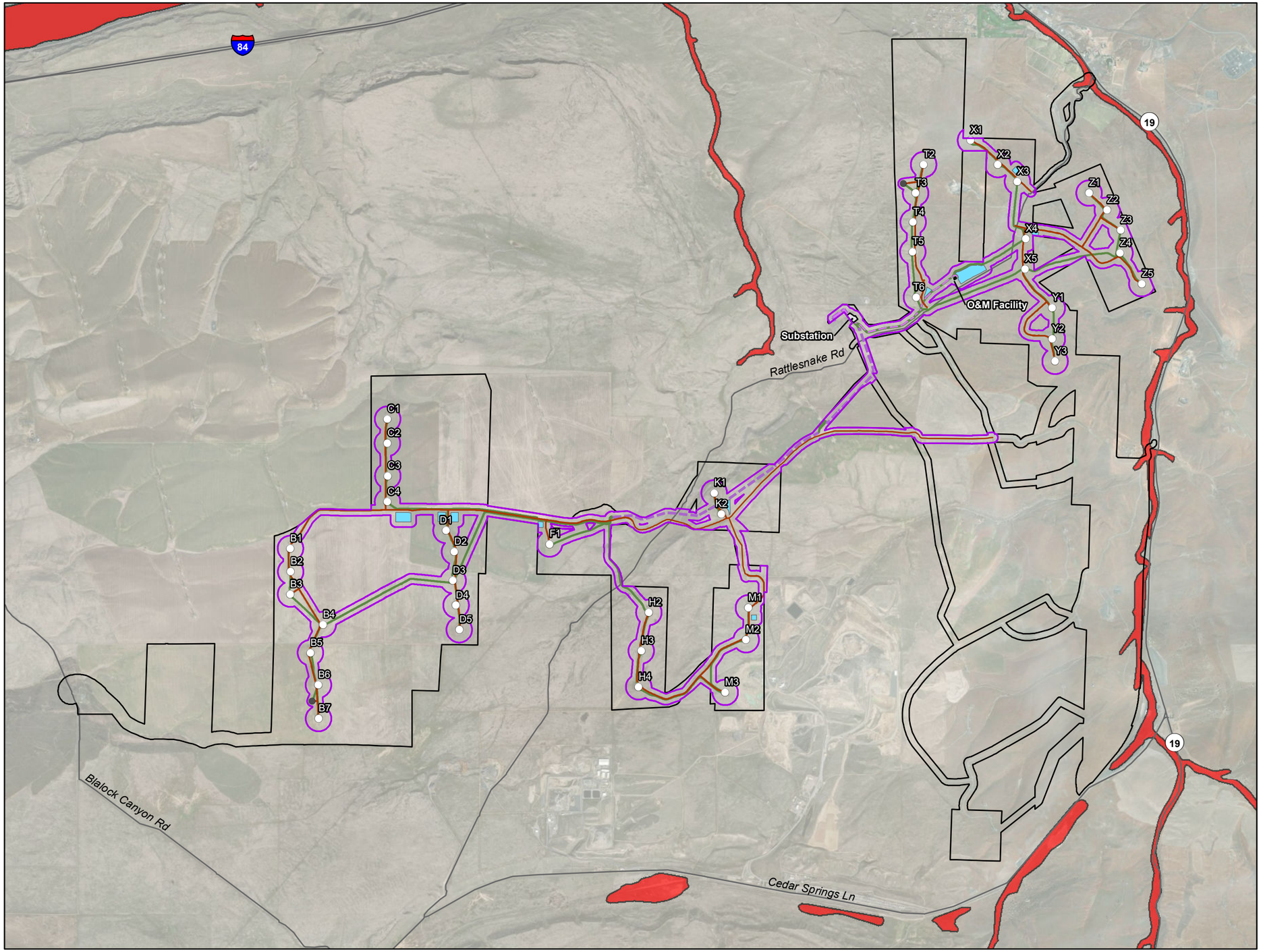

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly
- 100 Year Flood Digitized

N

0 0.5 1 2
Miles

Figure 3C
Flood Hazards
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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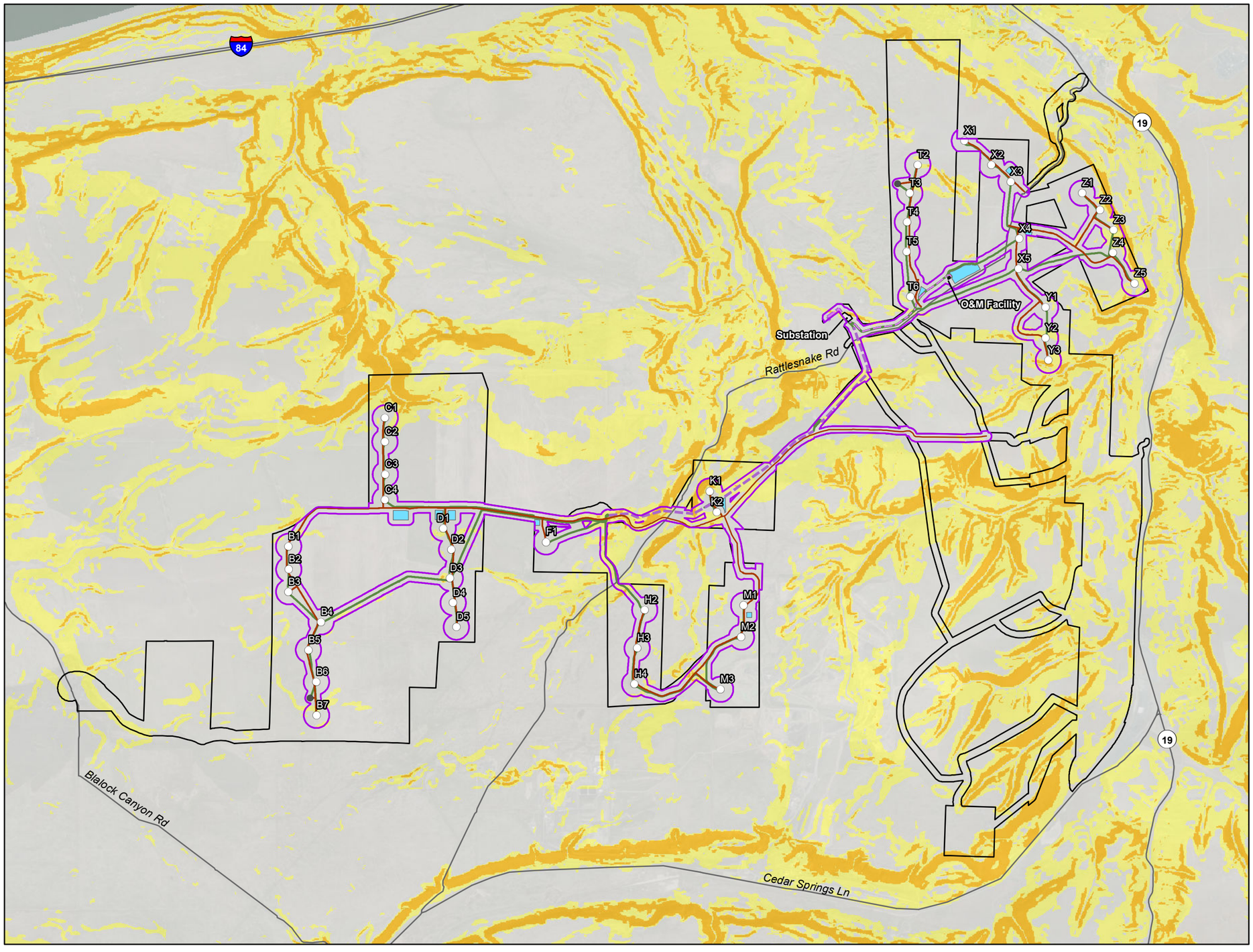

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Statewide Landslide Susceptibility Overview Map

- Low
- Moderate
- High
- Very High

N

0 0.5 1 2

Miles

Figure 3D
Landslide Hazards
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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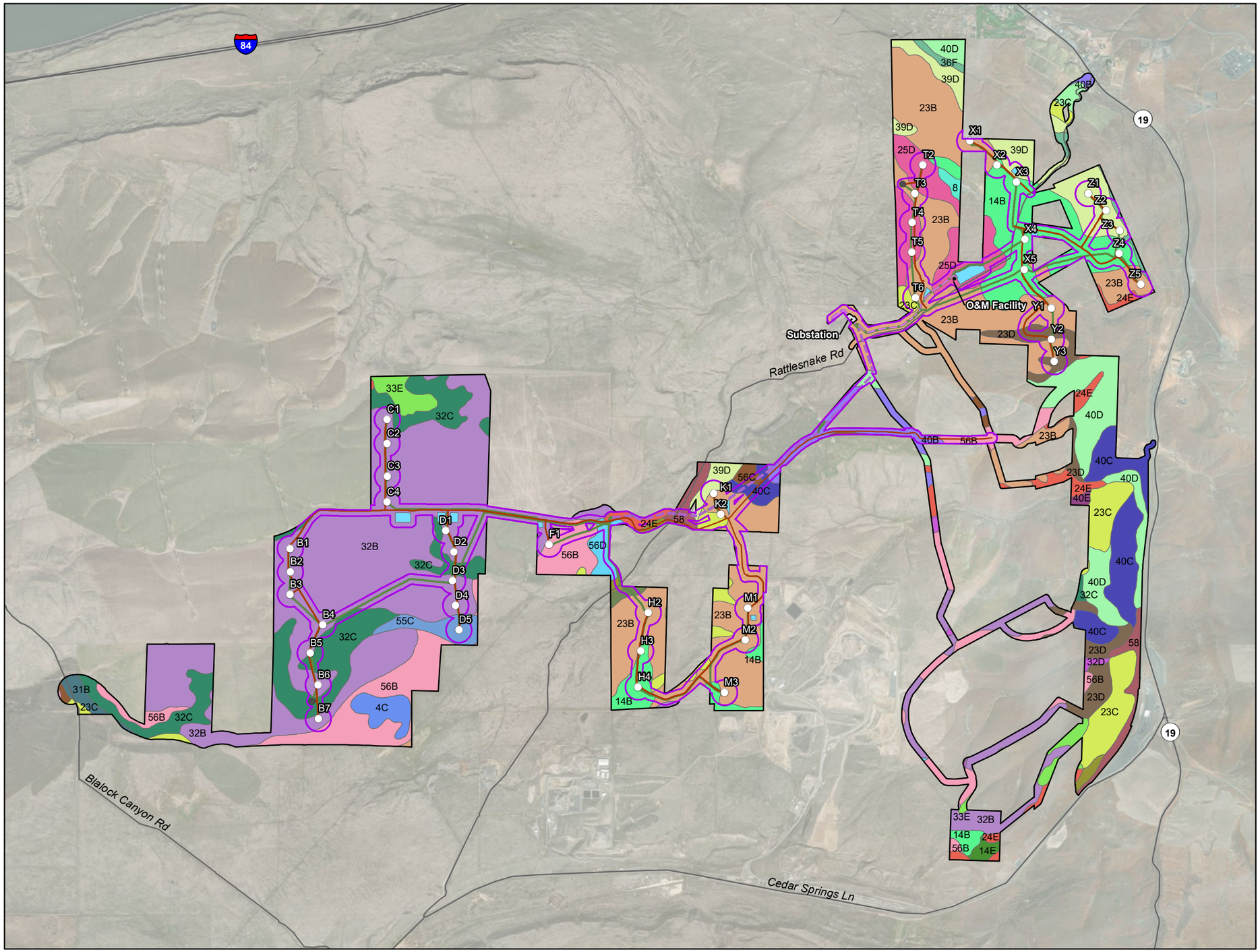

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Soils

- 4C: Blalock loam, 2 to 12 percent slopes
- 8: Dune land
- 14B: Krebs silt loam, 2 to 5 percent slopes
- 14D: Krebs silt loam, 5 to 20 percent slopes
- 14E: Krebs silt loam, 20 to 40 percent slopes
- 22F: Nansene silt loam, 35 to 70 percent slopes
- 23B: Olex silt loam, 0 to 5 percent slopes
- 23C: Olex silt loam, 5 to 12 percent slopes
- 23D: Olex silt loam, 12 to 20 percent slopes
- 24E: Olex gravelly silt loam, 20 to 40 percent slopes
- 25D: Olex-Roloff complex, 5 to 20 percent slopes
- 31B: Ritzville very fine sandy loam, 2 to 7 percent slopes
- 32B: Ritzville silt loam, 2 to 7 percent slopes
- 32C: Ritzville silt loam, 7 to 12 percent slopes
- 32D: Ritzville silt loam, 12 to 20 percent slopes
- 33E: Ritzville silt loam, 20 to 40 percent north slopes
- 36F: Rock outcrop-Rubble land complex, very steep
- 39D: Roloff-Rock outcrop complex, 1 to 20 percent slopes
- 40B: Sagehill fine sandy loam, 2 to 5 percent slopes
- 40C: Sagehill fine sandy loam, 5 to 12 percent slopes
- 40D: Sagehill fine sandy loam, 12 to 20 percent slopes
- 40E: Sagehill fine sandy loam, 20 to 40 percent slopes
- 55C: Warden silt loam, 5 to 12 percent slopes
- 56B: Willis silt loam, 2 to 5 percent slopes
- 56C: Willis silt loam, 5 to 12 percent slopes
- 56D: Willis silt loam, 12 to 20 percent slopes
- 57F: Wrentham-Rock outcrop complex, 35 to 70 percent slopes
- 58: Xeric Torrifluvents, nearly level

0 0.5 1
Miles
N

Figure 4
Soils
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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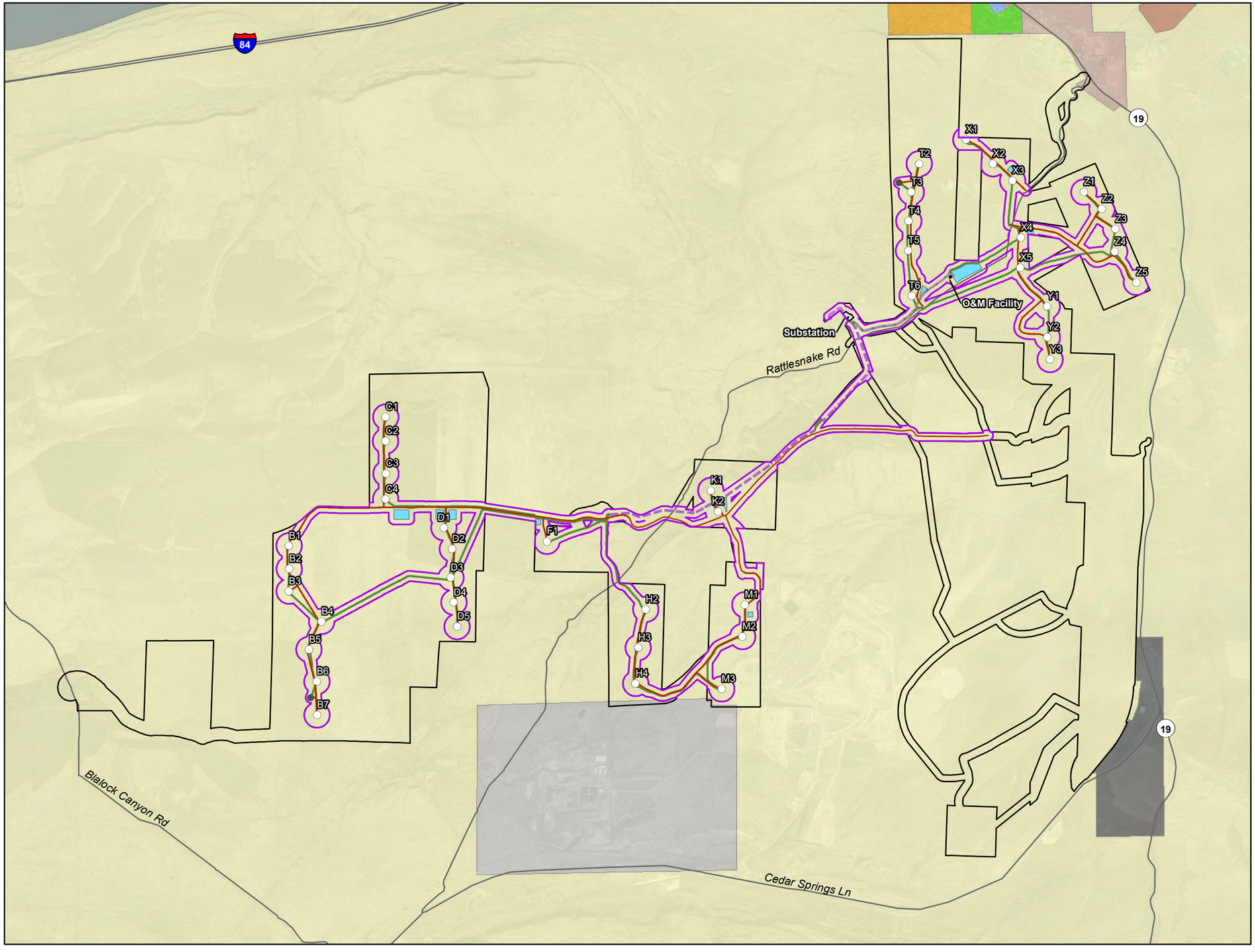

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Gilliam County Zoning

- C1: Commercial
- EFU: Farm Use
- II: Intermodal Industrial
- M-G: General Industrial
- M-L: Limited Industrial
- M1: Industrial
- OS: Open Space
- R1: Single Family Residential
- R2: Multi Family Residential

N

0 0.5 1 2

Miles

Figure 5A
Zoning and Land Use Designation Map
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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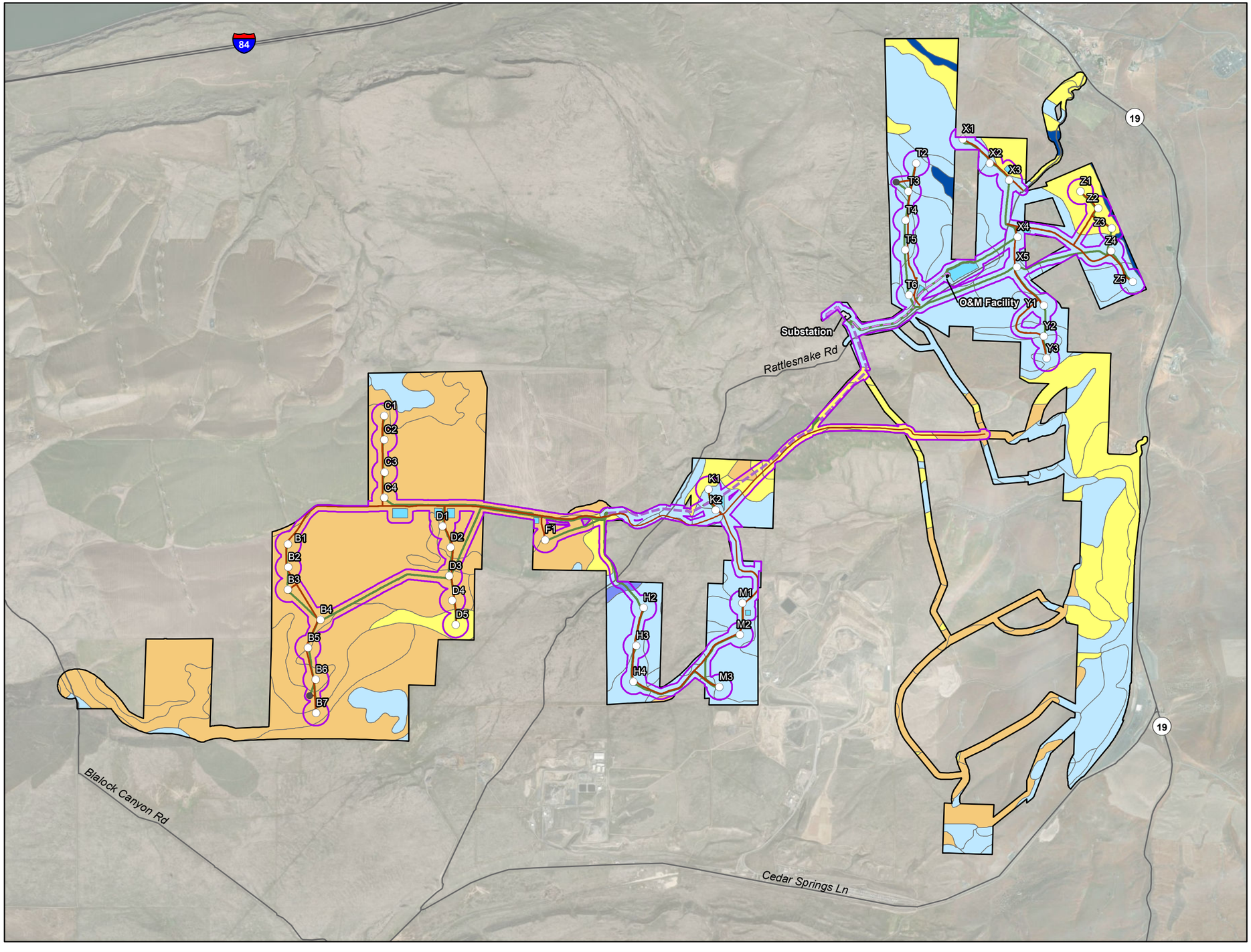

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Laydown or Crane Assembly

Nonirrigated Soil Capability Class

- 3
- 4
- 6
- 7
- 8

Source:
Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. United States Department of Agriculture. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

N

0 0.5 1 2
Miles

Figure 5B
Nonirrigated Soil Capability Class
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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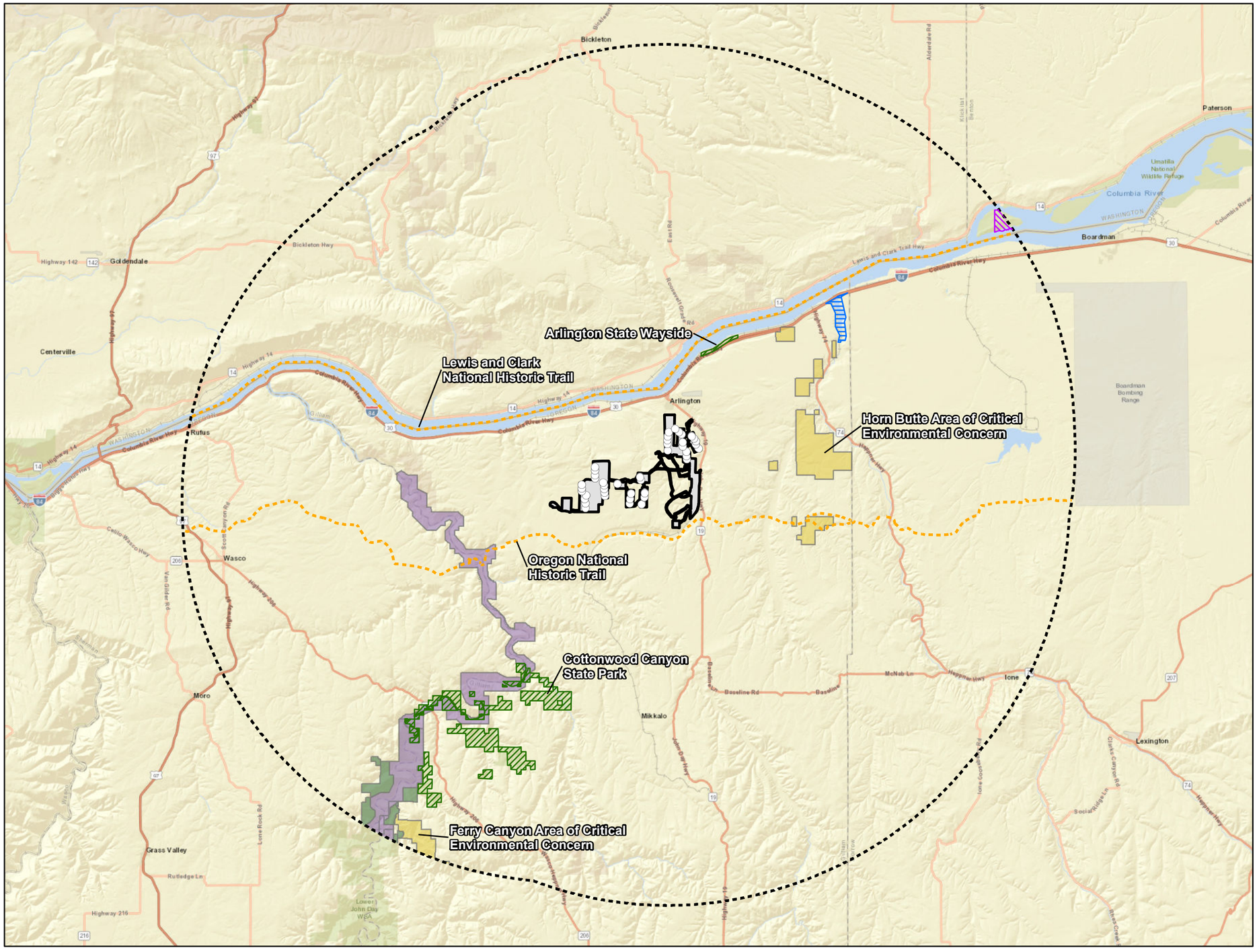

Legend

- Site Boundary
- Existing Turbine
- Protected Areas Analysis Area (20 miles)

Protected Areas

- Area of Critical Environmental Concern
- John Day Wild and Scenic River
- Lower John Day Wilderness Study Area
- State Park or Wayside
- Umatilla National Wildlife Refuge
- Willow Creek Wildlife Area
- National Historic Trail

N

0 2.5 5 10

Miles

Figure 6A
Protected Areas
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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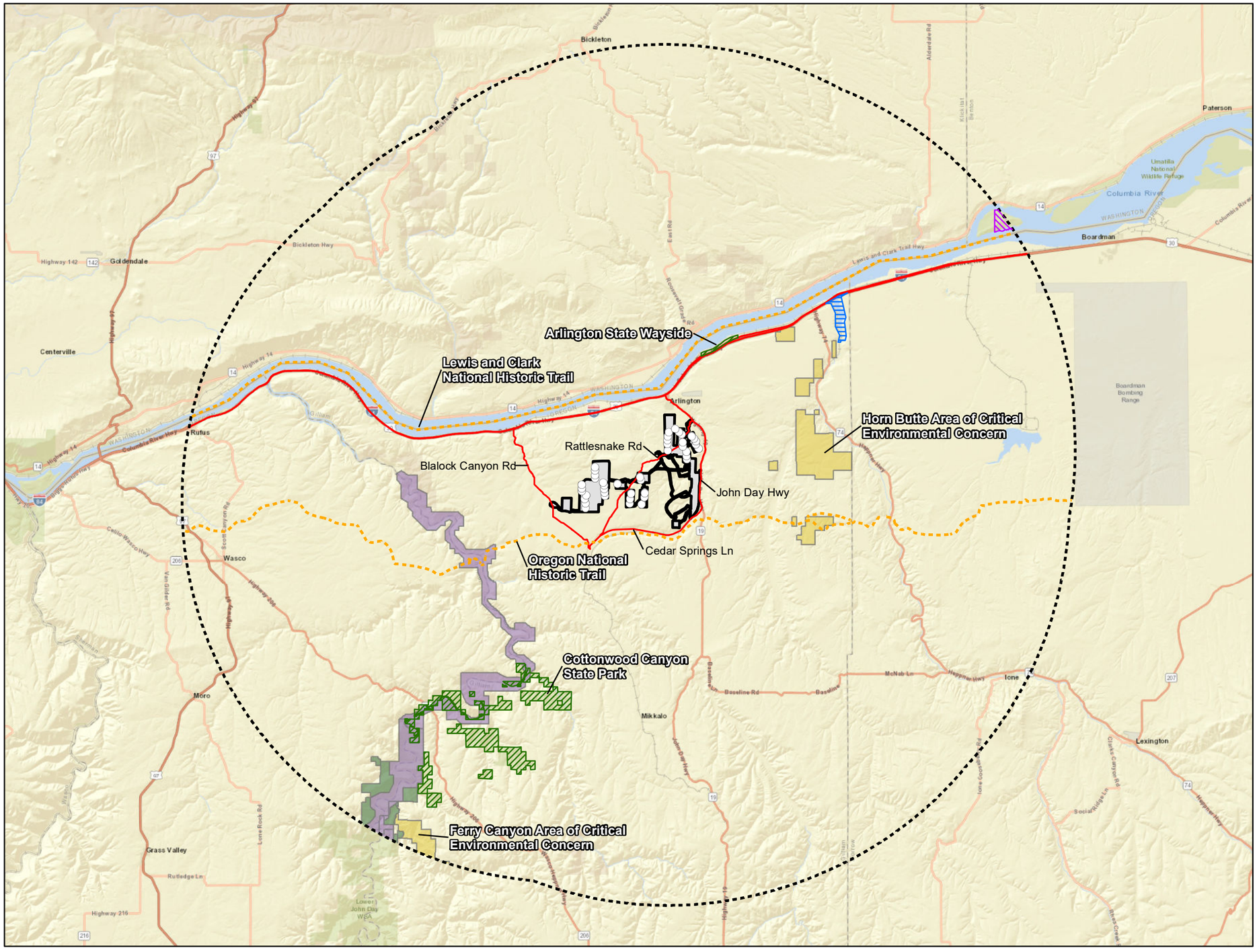

Legend

- Site Boundary
- Existing Turbine
- Protected Areas Analysis Area (20 miles)

Protected Areas

- Area of Critical Environmental Concern
- John Day Wild and Scenic River
- Lower John Day Wilderness Study Area
- State Park or Wayside
- Umatilla National Wildlife Refuge
- Willow Creek Wildlife Area
- National Historic Trail
- Transportation Route

N

0 2.5 5 10

Miles

Figure 6B
Protected Areas: Transportation Routes
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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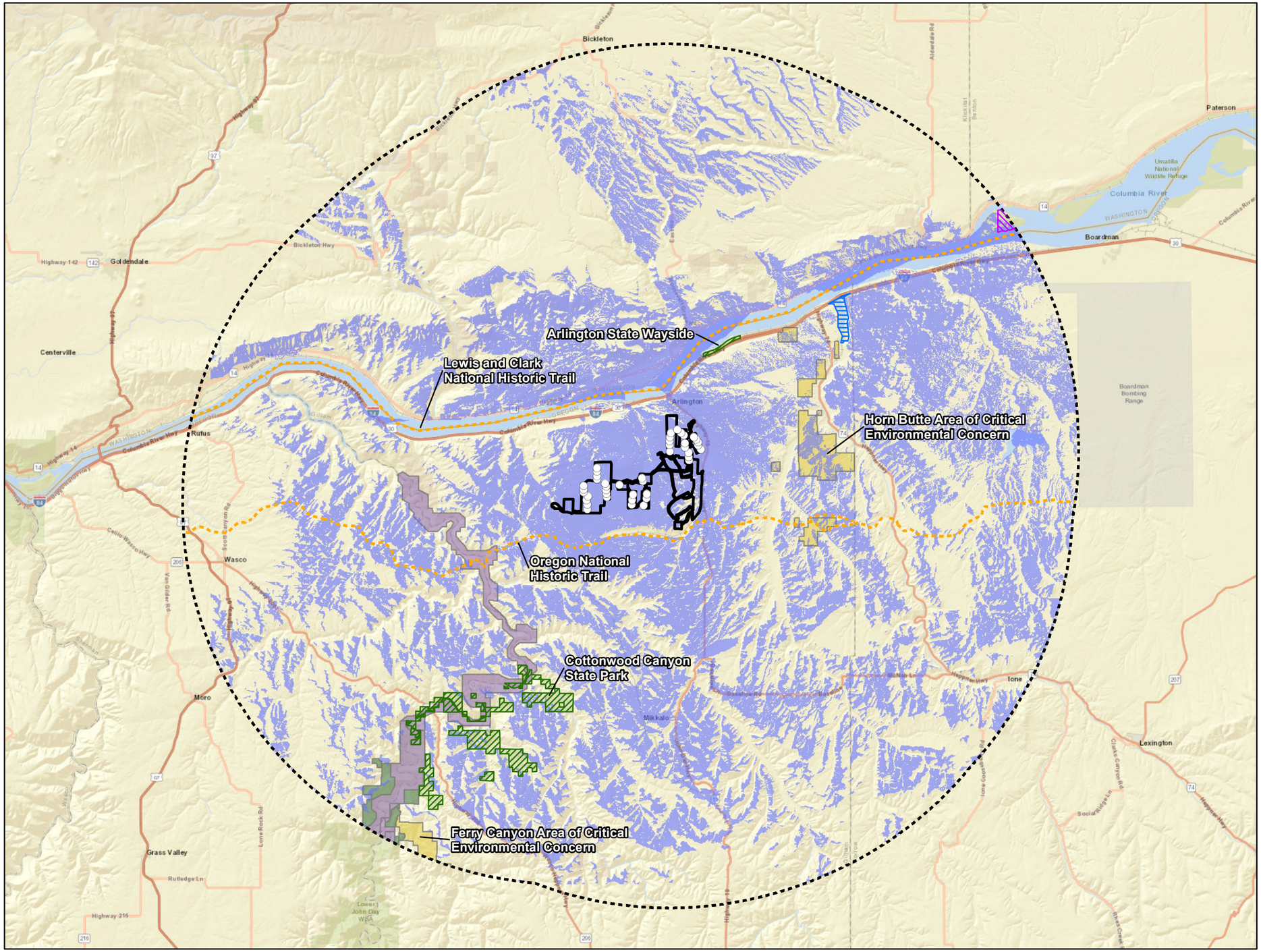

Legend

- Site Boundary
- Existing Turbine
- Protected Areas Analysis Area (20 miles)
- Area of Potential Project Visibility

Protected Areas

- Area of Critical Environmental Concern
- John Day Wild and Scenic River
- Lower John Day Wilderness Study Area
- State Park or Wayside
- Umatilla National Wildlife Refuge
- Willow Creek Wildlife Area
- National Historic Trail

N

0 2.5 5 10

Miles

Figure 6C
Protected Areas: Potential Visibility or ZVI
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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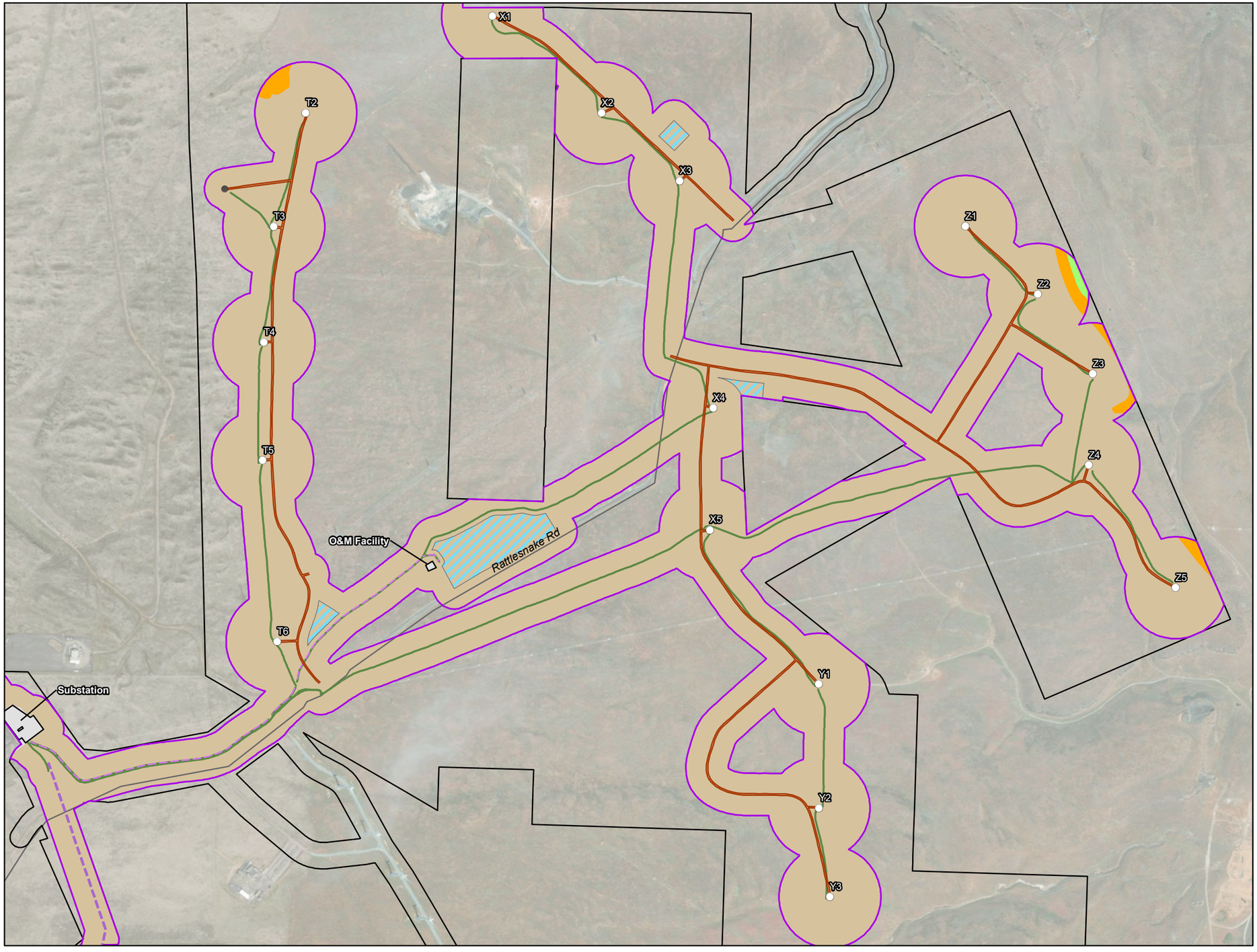

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Habitat Types

- Developed
- Exposed Basalt Rock
- Grassland
- Shrub-Steppe

N

0 500 1,000 2,000

Feet

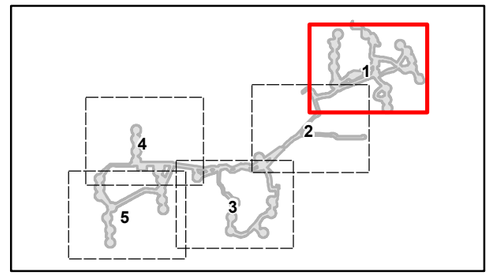

Figure 7A Page 1 of 5
2023 Habitat Site Reconnaissance Results
Habitat Types
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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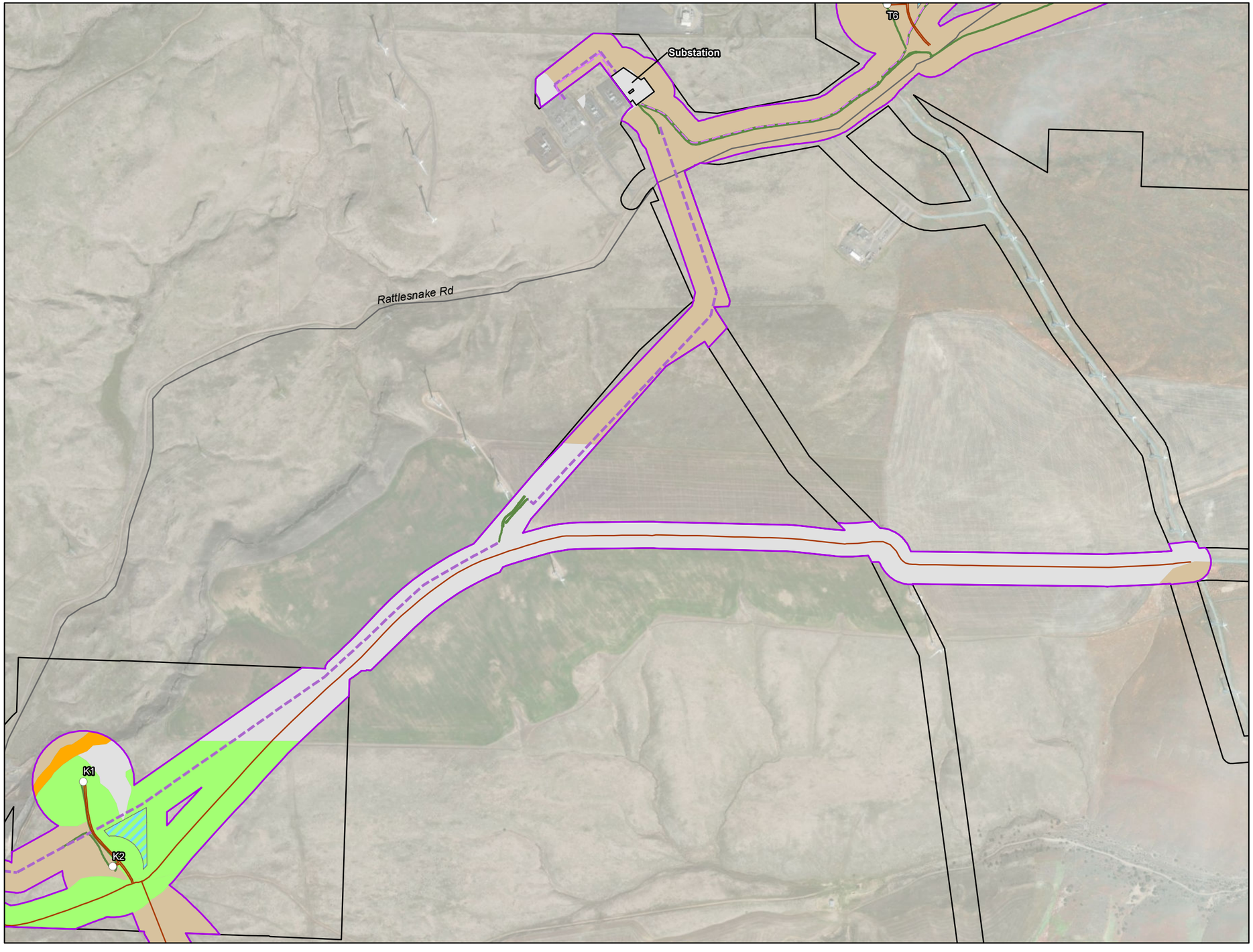

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Habitat Types

- Developed
- Exposed Basalt Rock
- Grassland
- Shrub-Steppe

N

0 500 1,000 2,000

Feet

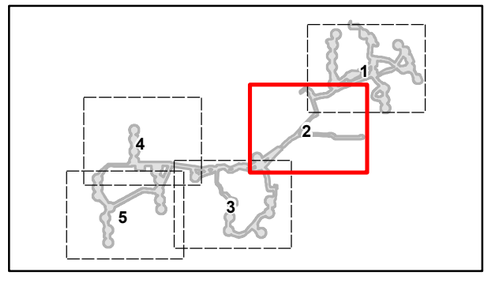

Figure 7A Page 2 of 5
2023 Habitat Site Reconnaissance Results
Habitat Types
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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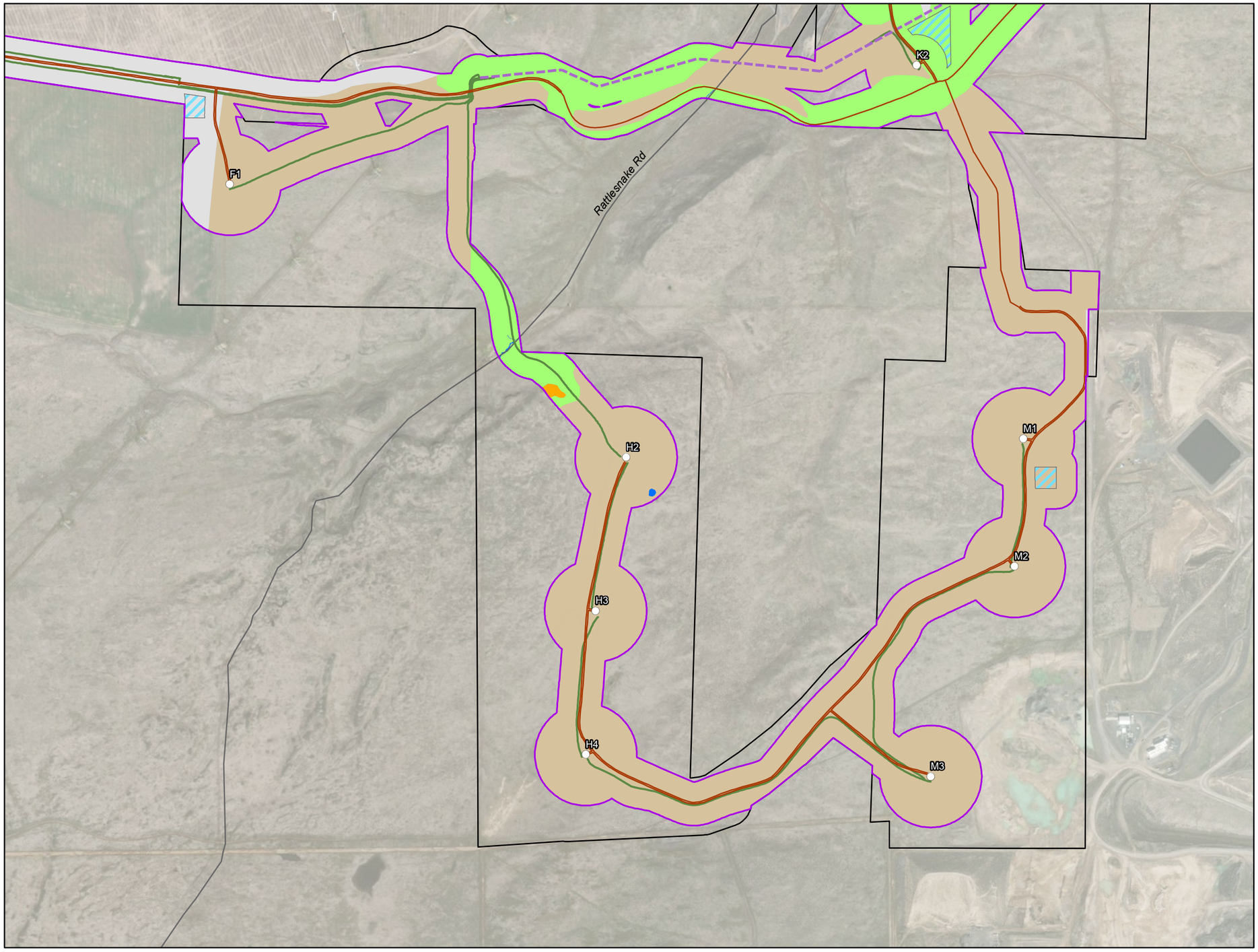

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Habitat Types

- Developed
- Exposed Basalt Rock
- Grassland
- Shrub-Steppe
- Wetlands and Waters

N

0 500 1,000 2,000

Feet

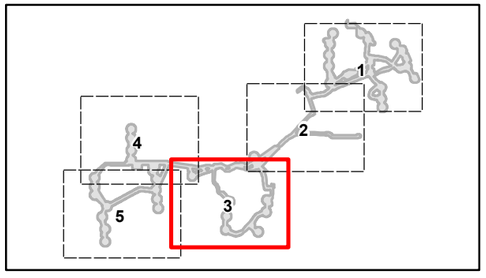

Figure 7A Page 3 of 5
2023 Habitat Site Reconnaissance Results
Habitat Types
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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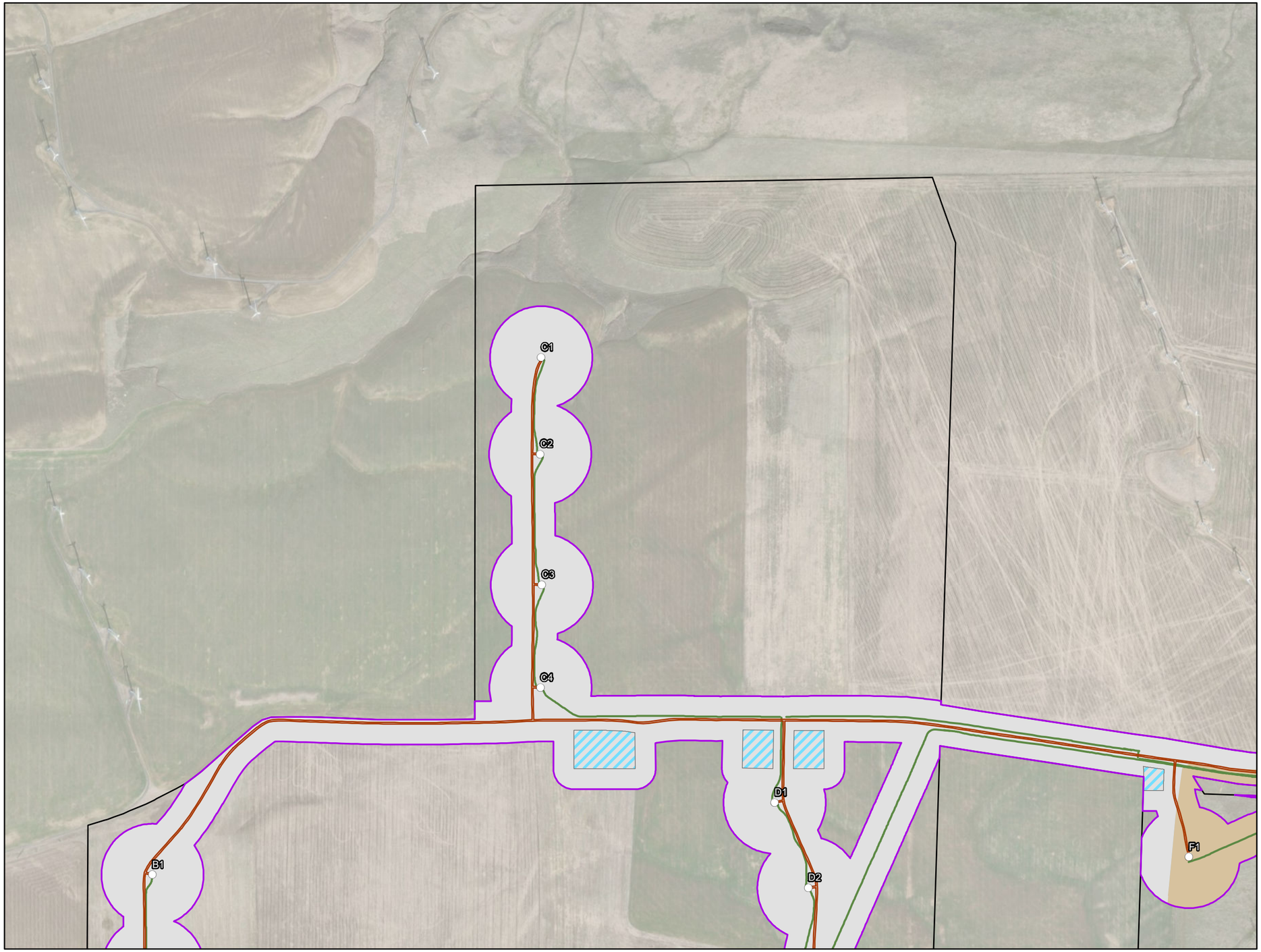

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Habitat Types

- Developed
- Shrub-Steppe

N

0 500 1,000 2,000

Feet

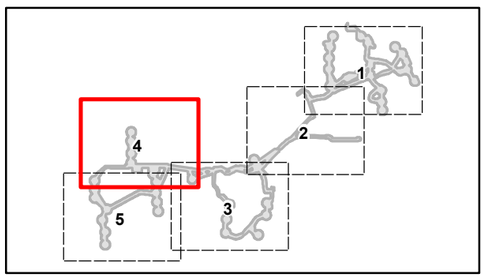

Figure 7A Page 4 of 5
2023 Habitat Site Reconnaissance Results
Habitat Types
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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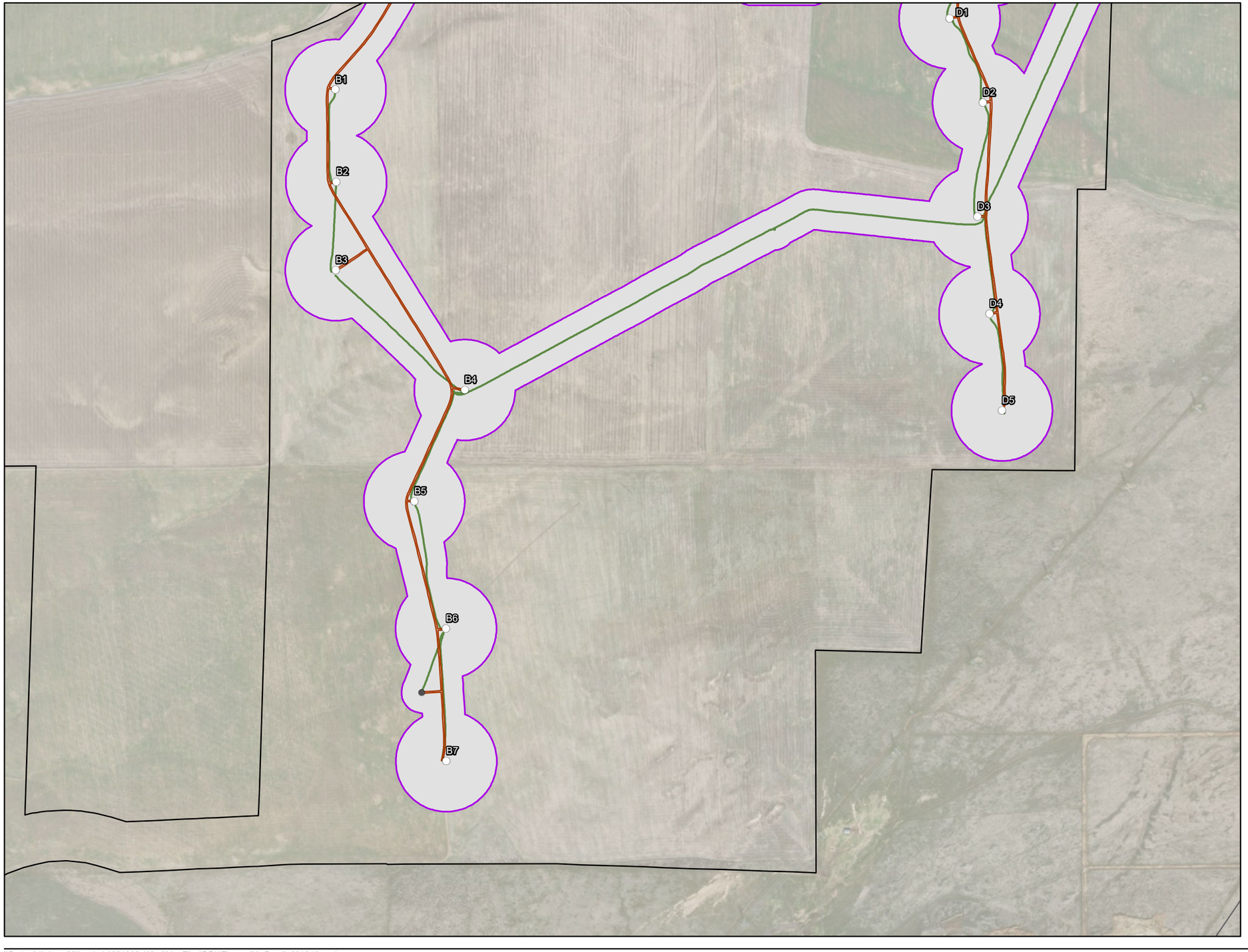

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Habitat Types

- Developed

N

0 500 1,000 2,000

Feet

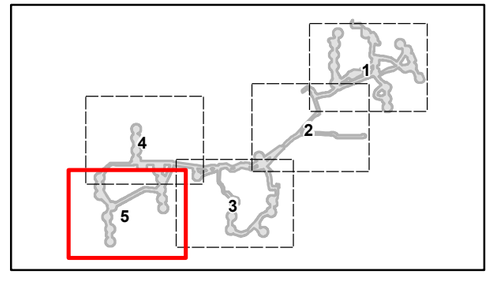

Figure 7A Page 5 of 5
2023 Habitat Site Reconnaissance Results
Habitat Types
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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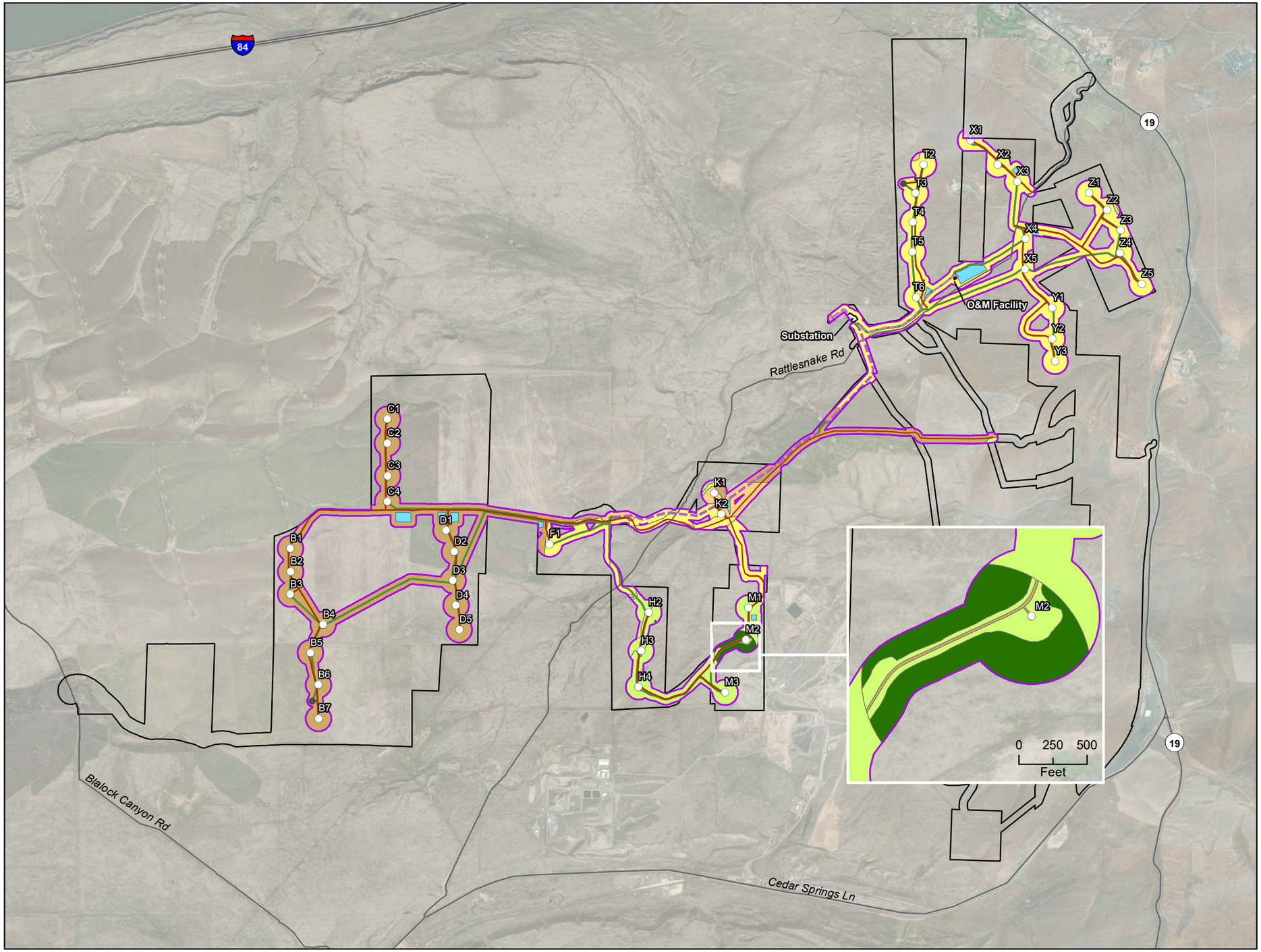

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Habitat Categories (Habitat Subtypes)

- Category 1 (SSA, ES, HW)
- Category 2 (ESC, SSA, SSC)
- Category 3 (EB, AG, SSA, SSB)
- Category 4 (EB, AG)
- Category 6 (DW, DX)

Habitat Subtype Codes

AG: Annual Grass and Weeds
EB: Exposed Basalt
ES: Ephemeral Stream
ESC: Escarpment
DW: Dryland Wheat
DX: Developed (Other)
HW: Herbaceous Wetland
SSA: Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass
SSB: Rabbitbrush-Snakeweed-Eriogonum/Bunchgrass
SSC: Erigonum/Poa sandbergii-Annual Grass

N

0 0.5 1 2
Miles

Figure 7B
2023 Habitat Site Reconnaissance Results
Habitat Categories
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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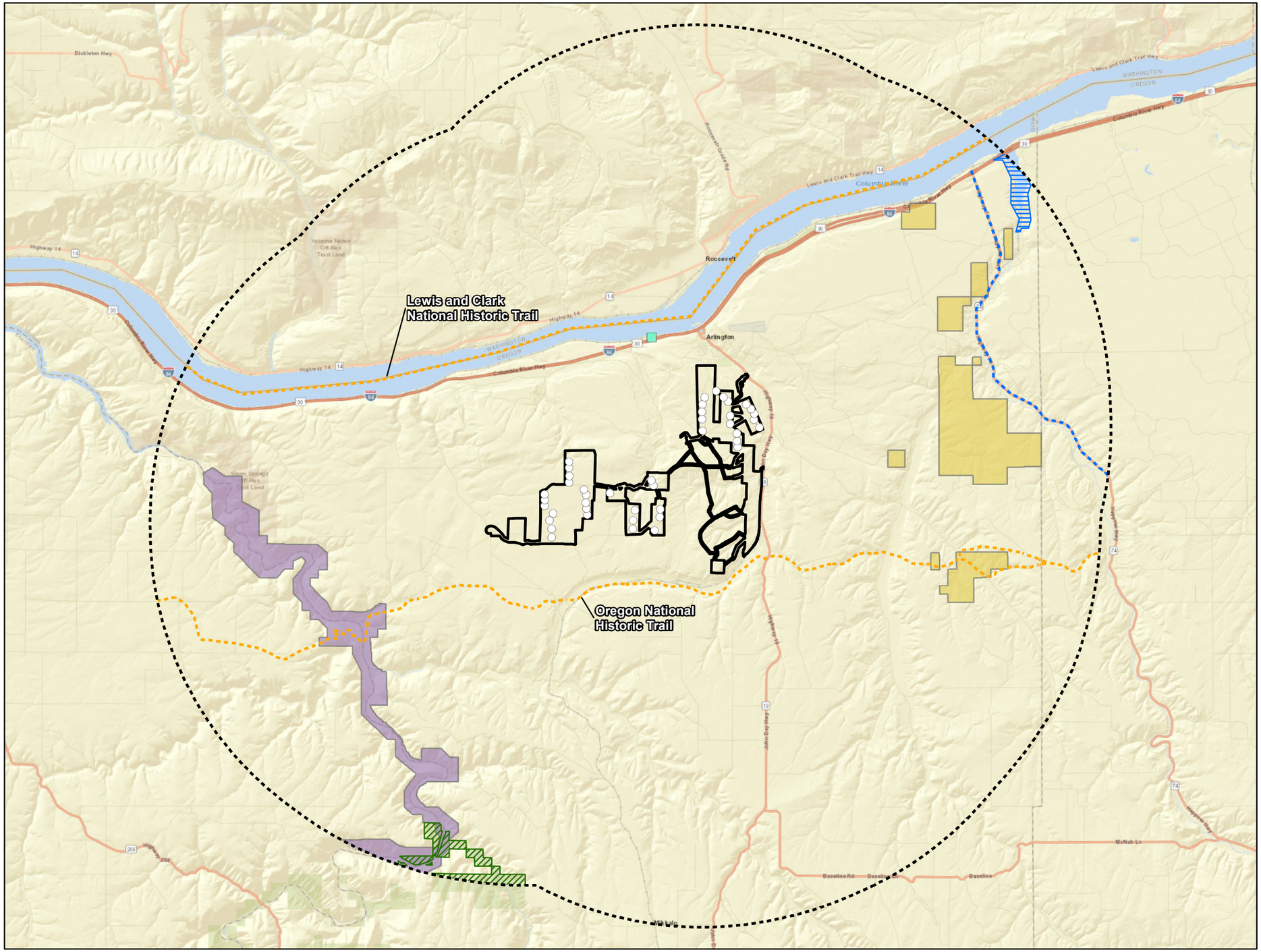

Legend

- Site Boundary
- Existing Turbine
- Scenic and Aesthetic Areas Analysis Area (10 miles)

Scenic Resources

- Columbia River - Jones Canyon View Point
- National Historic Trail
- Blue Mountain Scenic Byway
- Willow Creek Wildlife Area
- Cottonwood Canyon State Park
- Horn Butte Area of Critical Environmental Concern
- John Day Wild and Scenic River

N

0 1.5 3 6

Miles

Figure 8A
Scenic and Aesthetic Areas
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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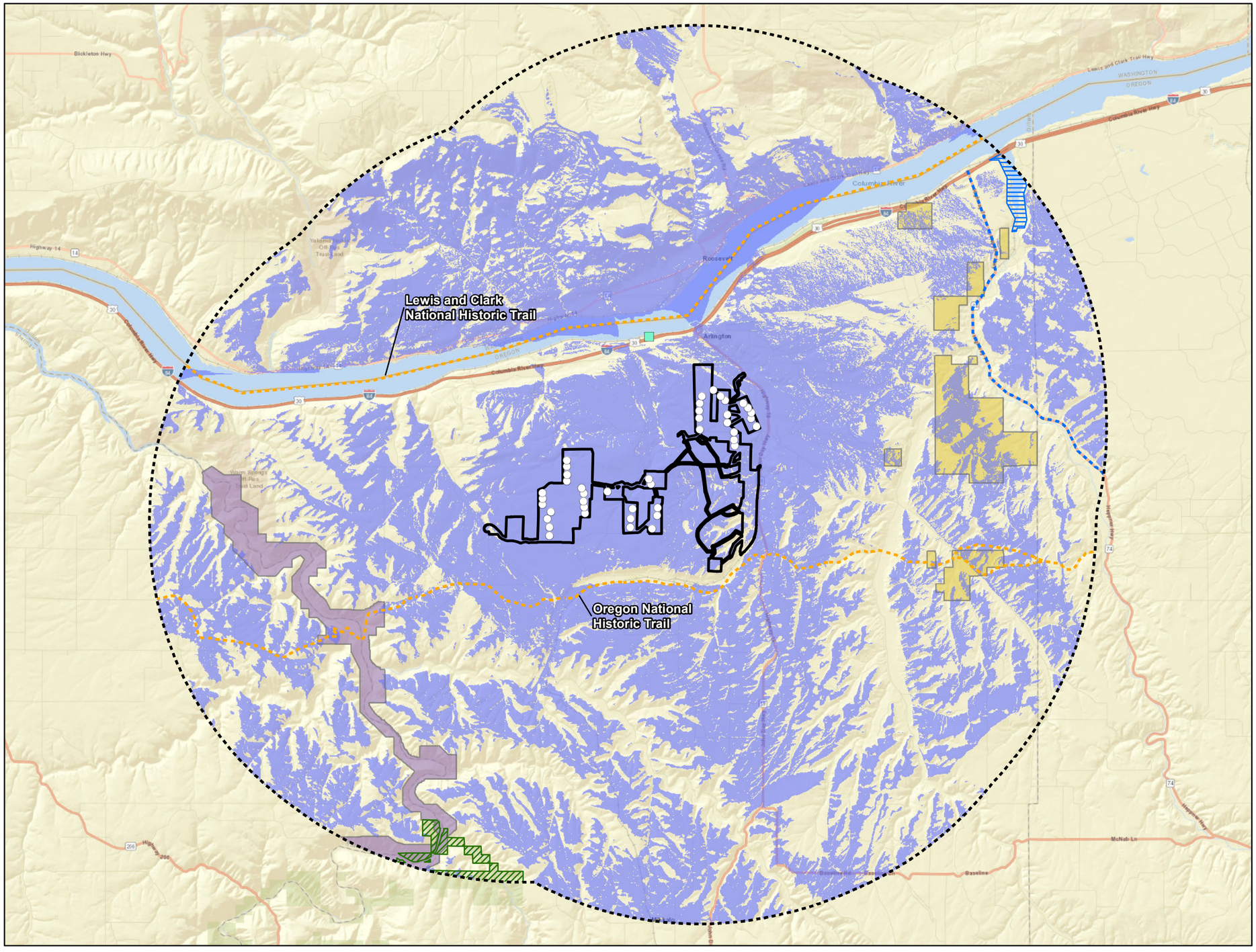

Legend

- Site Boundary
- Existing Turbine
- Scenic and Aesthetic Areas Analysis Area (10 miles)
- Area of Potential Project Visibility

Scenic Resources

- Columbia River - Jones Canyon View Point
- National Historic Trail
- Blue Mountain Scenic Byway
- Willow Creek Wildlife Area
- Cottonwood Canyon State Park
- Horn Butte Area of Critical Environmental Concern
- John Day Wild and Scenic River

N

0 1.5 3 6

Miles

Figure 8B
Scenic and Aesthetic Areas: Potential Visibility or ZVI
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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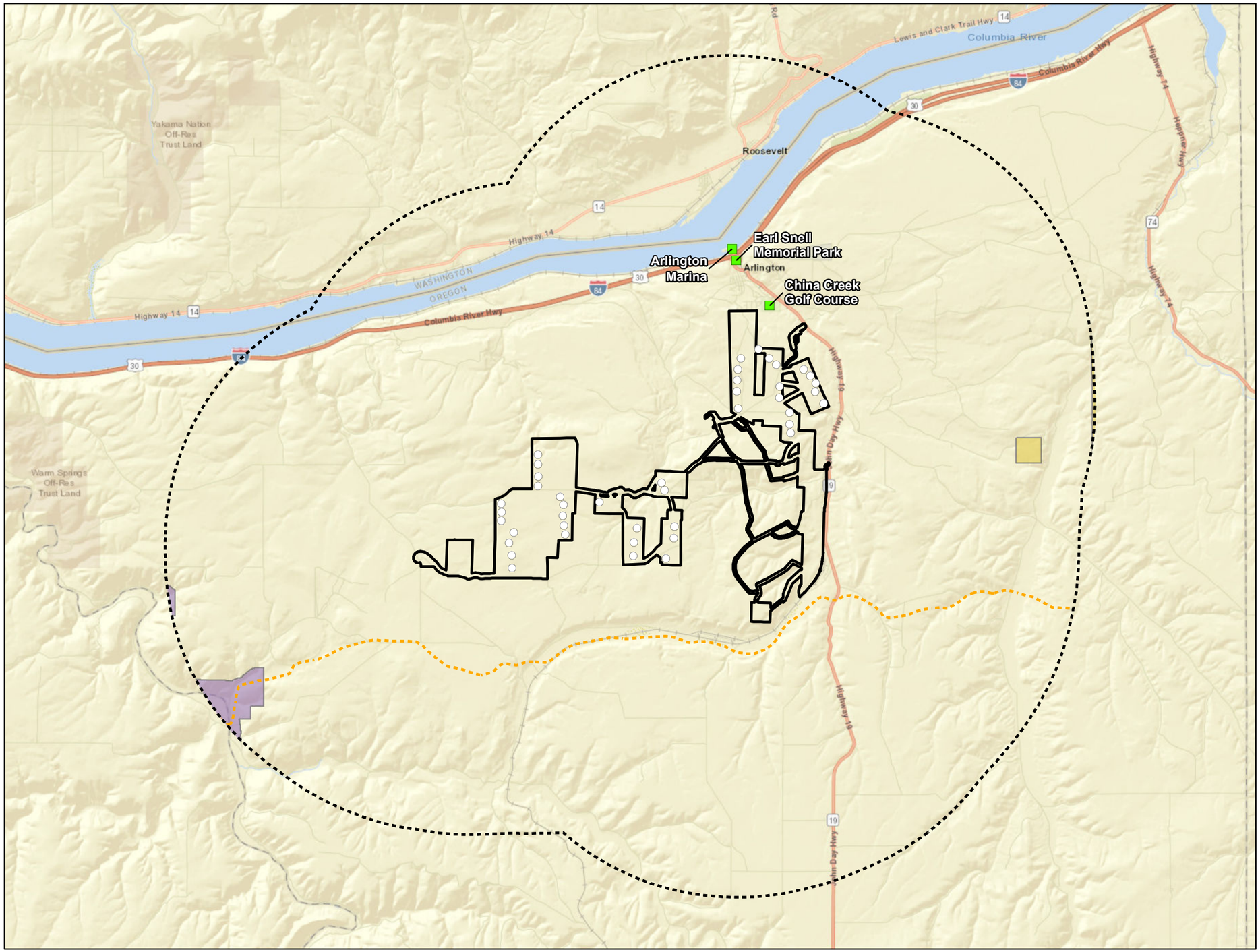

Legend

- Site Boundary
- Existing Turbine
- Recreational Opportunities Analysis Area (5 miles)

Recreational Opportunities

- Recreation Area
- Oregon National Historic Trail
- Horn Butte Area of Critical Environmental Concern
- John Day Wild and Scenic River

N

0 1 2 4

Miles

Figure 9A
Recreational Opportunities
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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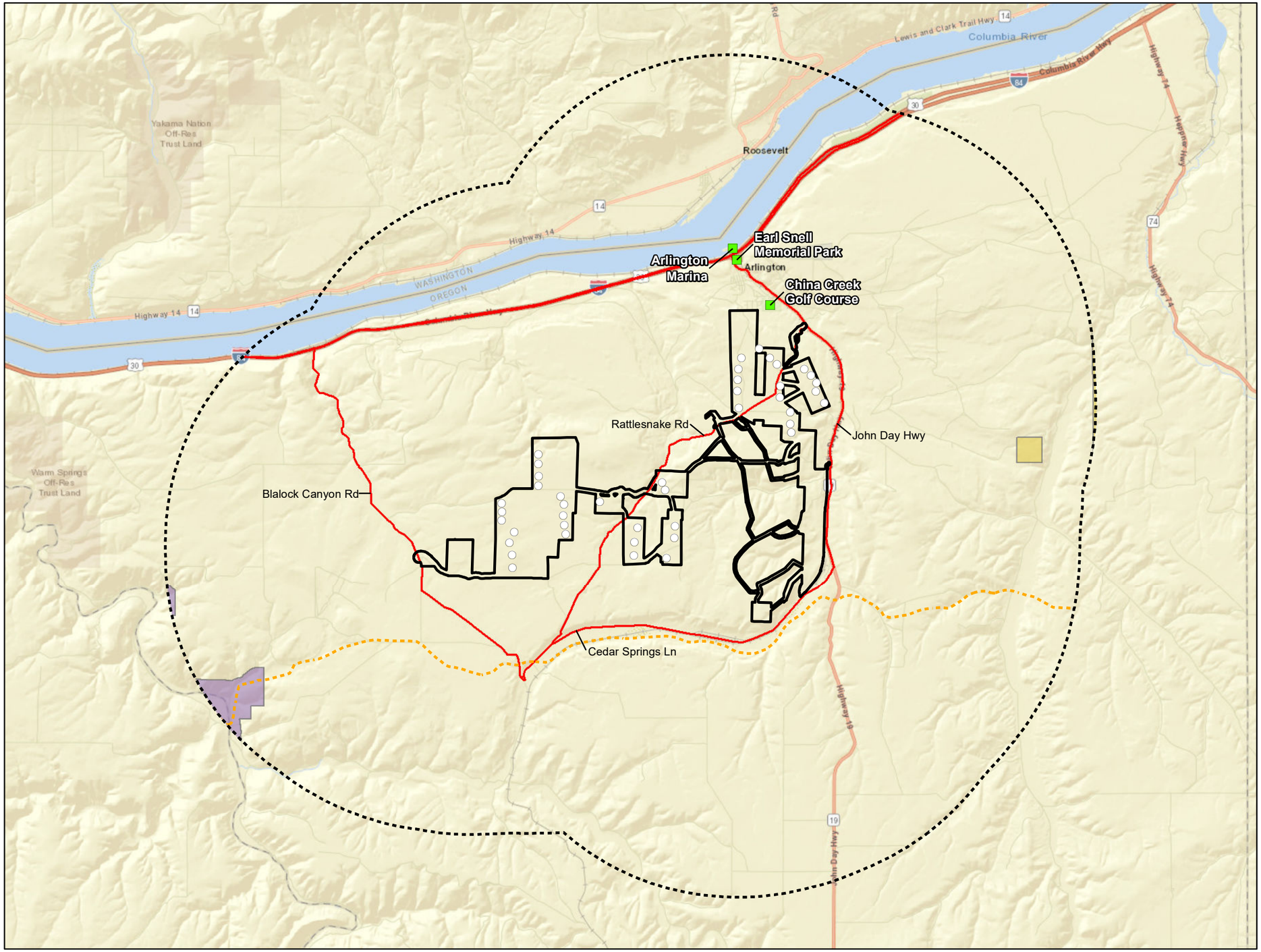

Legend

- Site Boundary
- Existing Turbine
- Recreational Opportunities Analysis Area (5 miles)

Recreational Opportunities

- Recreation Area
- Oregon National Historic Trail
- Horn Butte Area of Critical Environmental Concern
- John Day Wild and Scenic River
- Transportation Route

N

0 1 2 4
Miles

Figure 9B
Recreational Opportunities: Transportation Routes
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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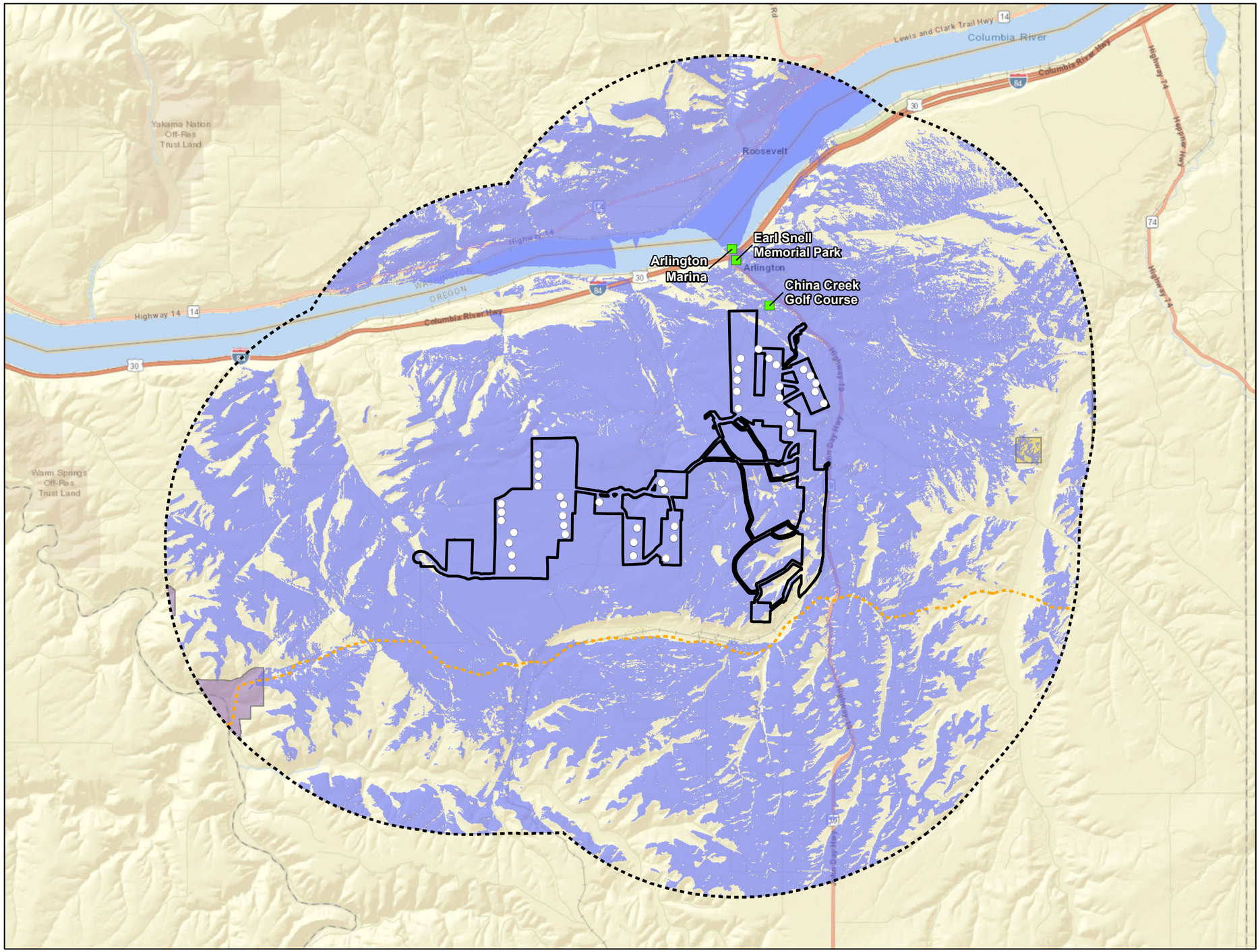

Legend

- Site Boundary
- Existing Turbine
- Recreational Opportunities Analysis Area (5 miles)
- Area of Potential Project Visibility

Recreational Opportunities

- Recreation Area
- Oregon National Historic Trail
- Horn Butte Area of Critical Environmental Concern
- John Day Wild and Scenic River

N

0 1 2 4

Miles

Figure 9C
Recreational Opportunities:
Potential Visibility or ZVI
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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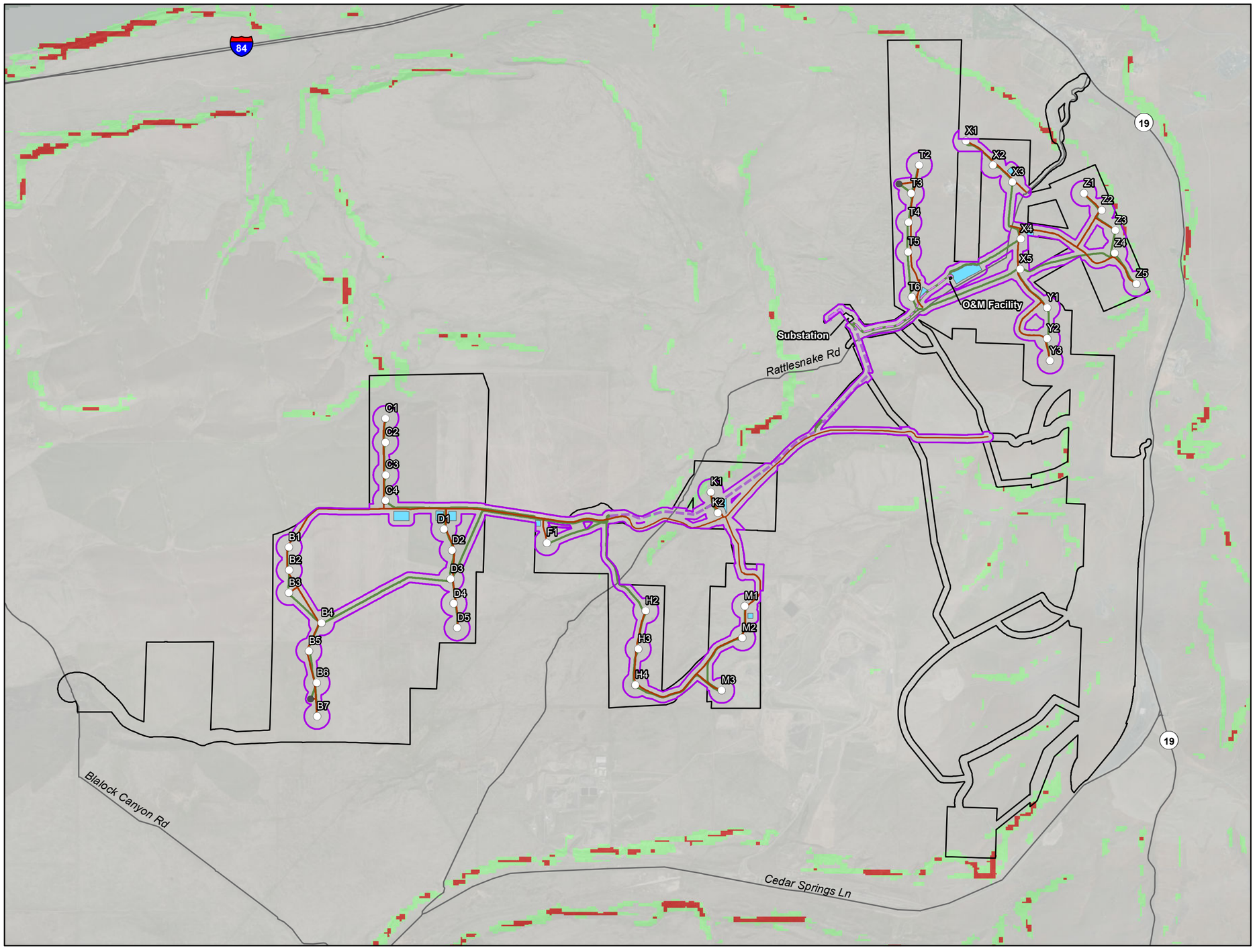

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Hazard: Slope

- 0-25%
- 26-40%
- 40%+

N

0 0.5 1 2

Miles

Figure 10A
Slopes
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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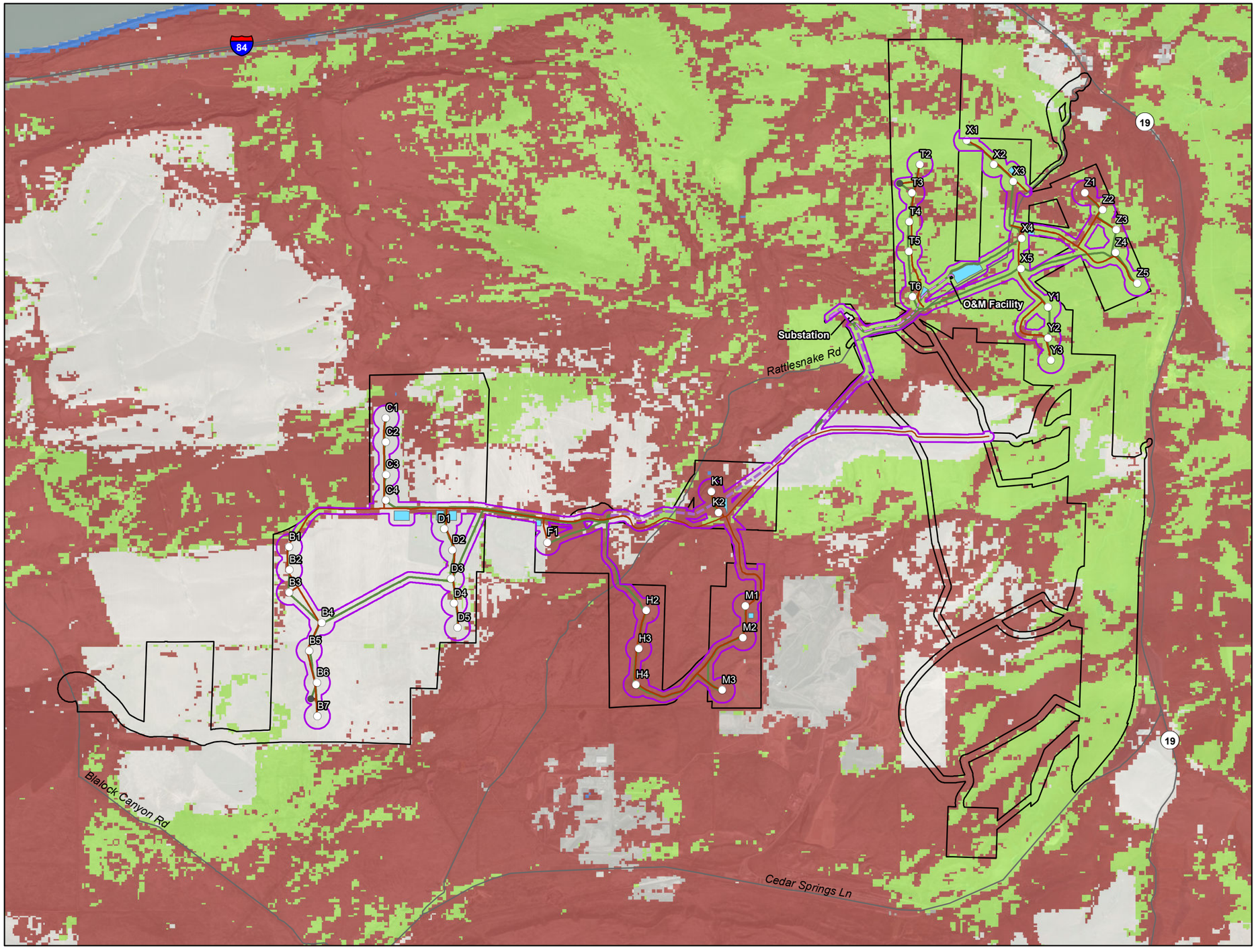

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Hazard: Fire Behavior Fuel Model

- Unknown
- FBFM 1
- FBFM 2
- FBFM 4
- FBFM 5
- FBFM 6
- FBFM 8
- FBFM 9
- FBFM 10
- FBFM 10
- Residential
- Perenial ice or snow
- Open water
- Bare rock

N

0 0.5 1 2

Miles

Figure 10B
Fuel Models
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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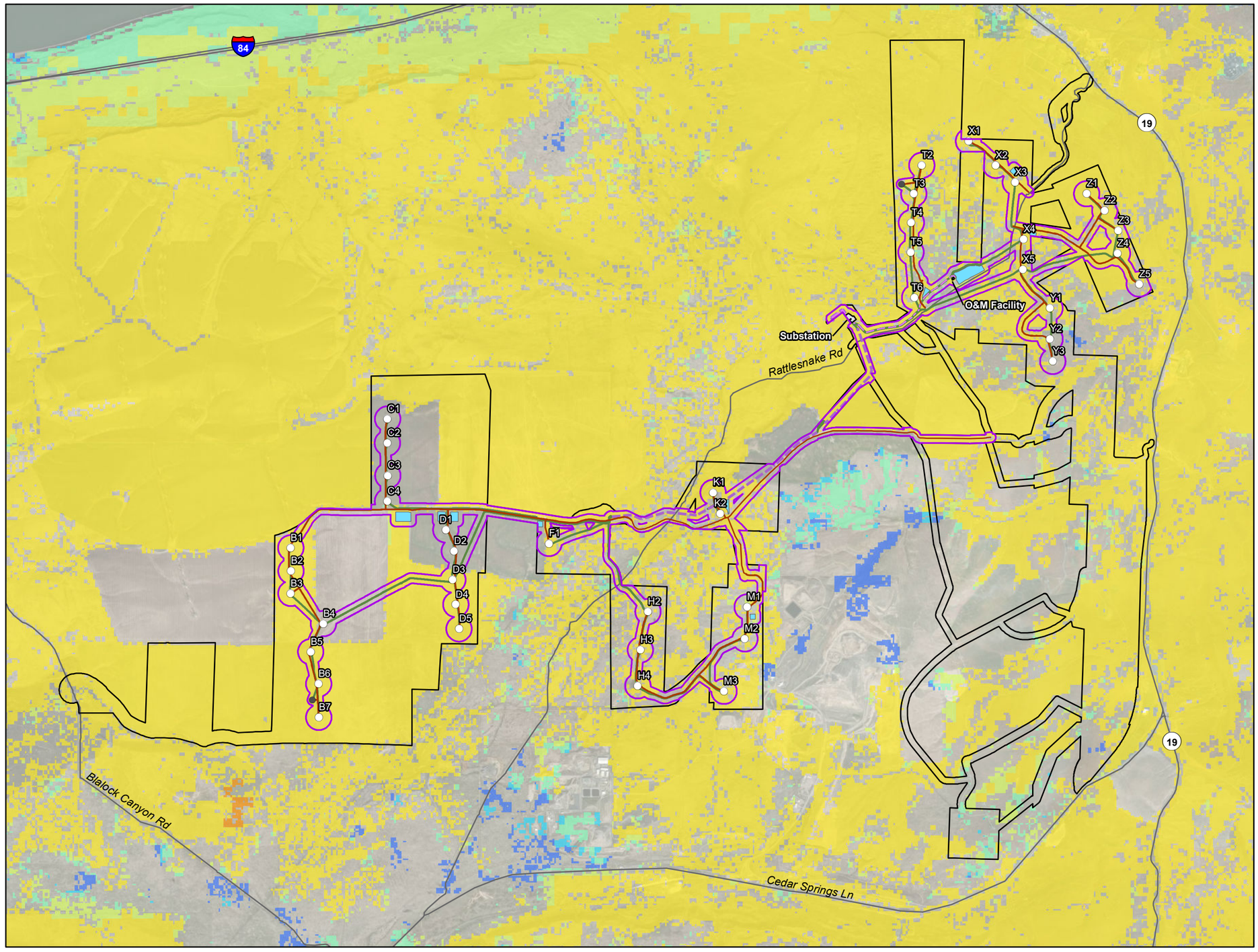

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Burn Probability

- 0
- Low (<= 1-in-10,000)
- Low (1-in-10,000 to 1-in-5,000)
- Moderate (1-in-5,000 to 1-in-1,000)
- Moderate (1-in-1,000 to 1-in-500)
- High (1-in-500 to 1-in-100)
- High (1-in-100 to 1-in-50)
- Very High (1-in-50 to 1-in-25)

N

0 0.5 1 2

Miles

Figure 10C
Burn Probability
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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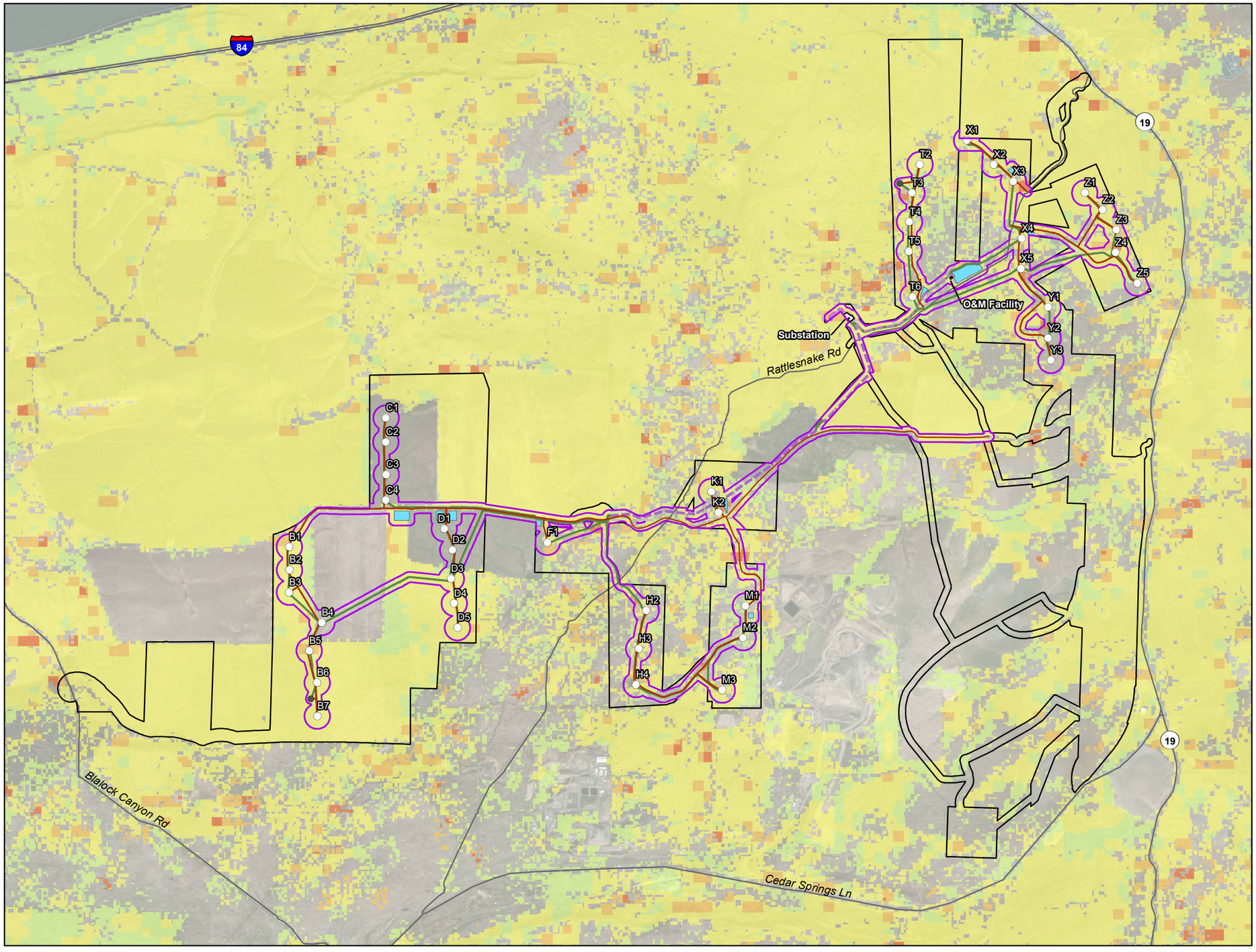

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Average Flame Length

- 0
- >0 - 4 ft
- 4 - 8 ft
- 8 - 11 ft
- > 11 ft

N

0 0.5 1 2

Miles

Figure 10D
Average Flame Length
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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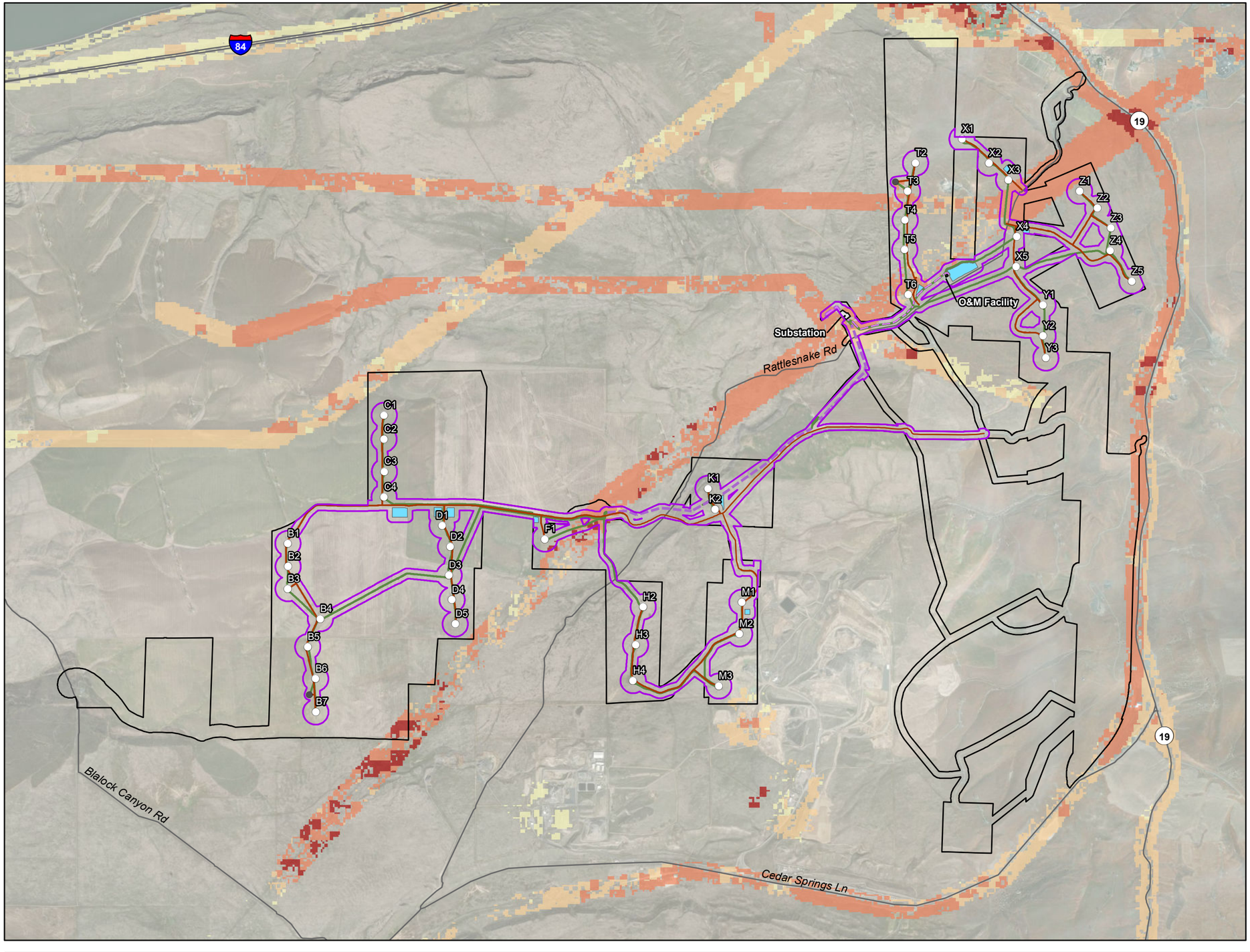

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Wildfire Risk to Assets

- Very High
- High
- Moderate
- Low

N

0 0.5 1 2

Miles

Figure 10E
Wildfire Risk to Assets
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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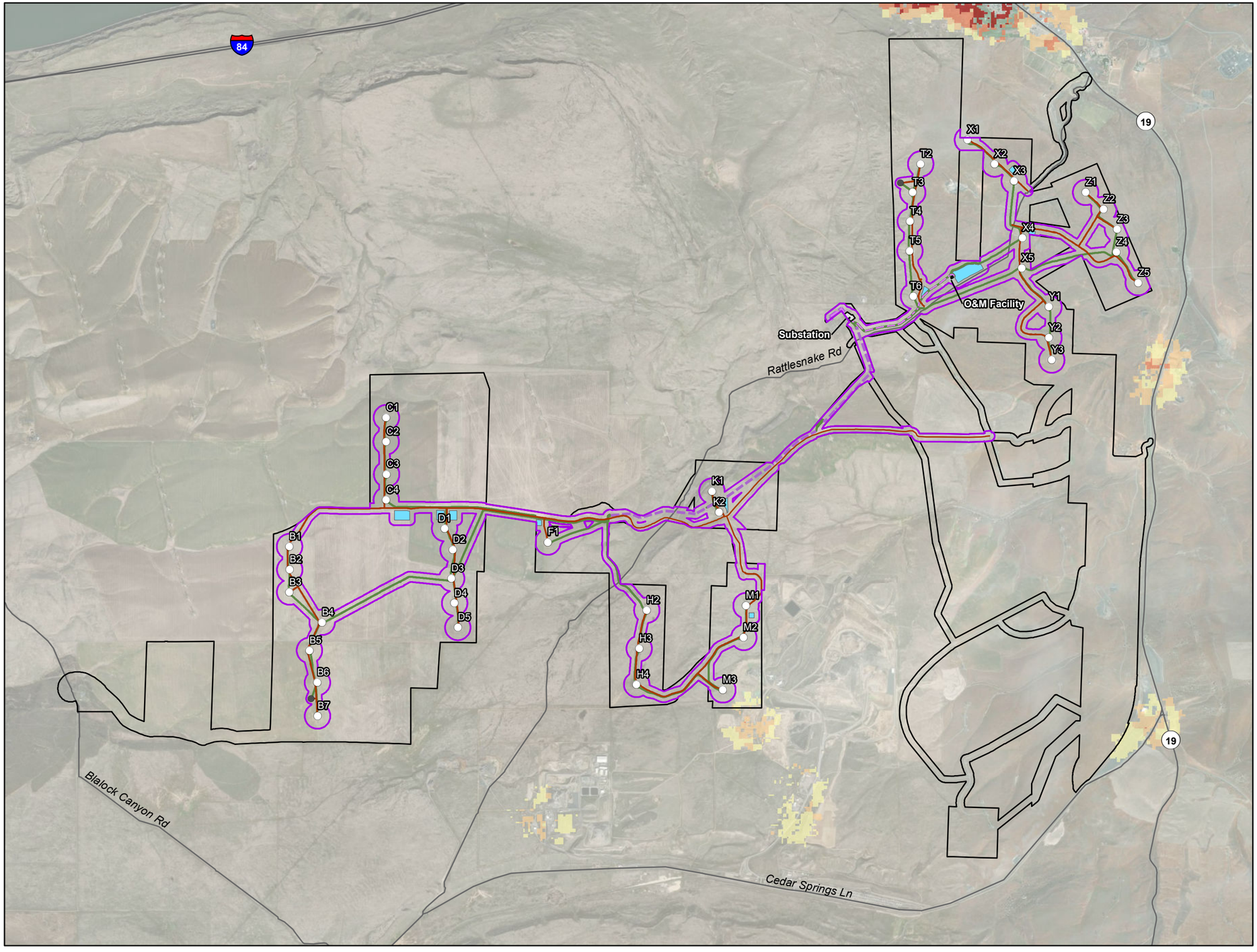

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Potential Impact to People and Property

- Very High
- High
- Moderate
- Low

N

0 0.5 1 2

Miles

Figure 10F
Wildfire Potential Impacts to People and Property
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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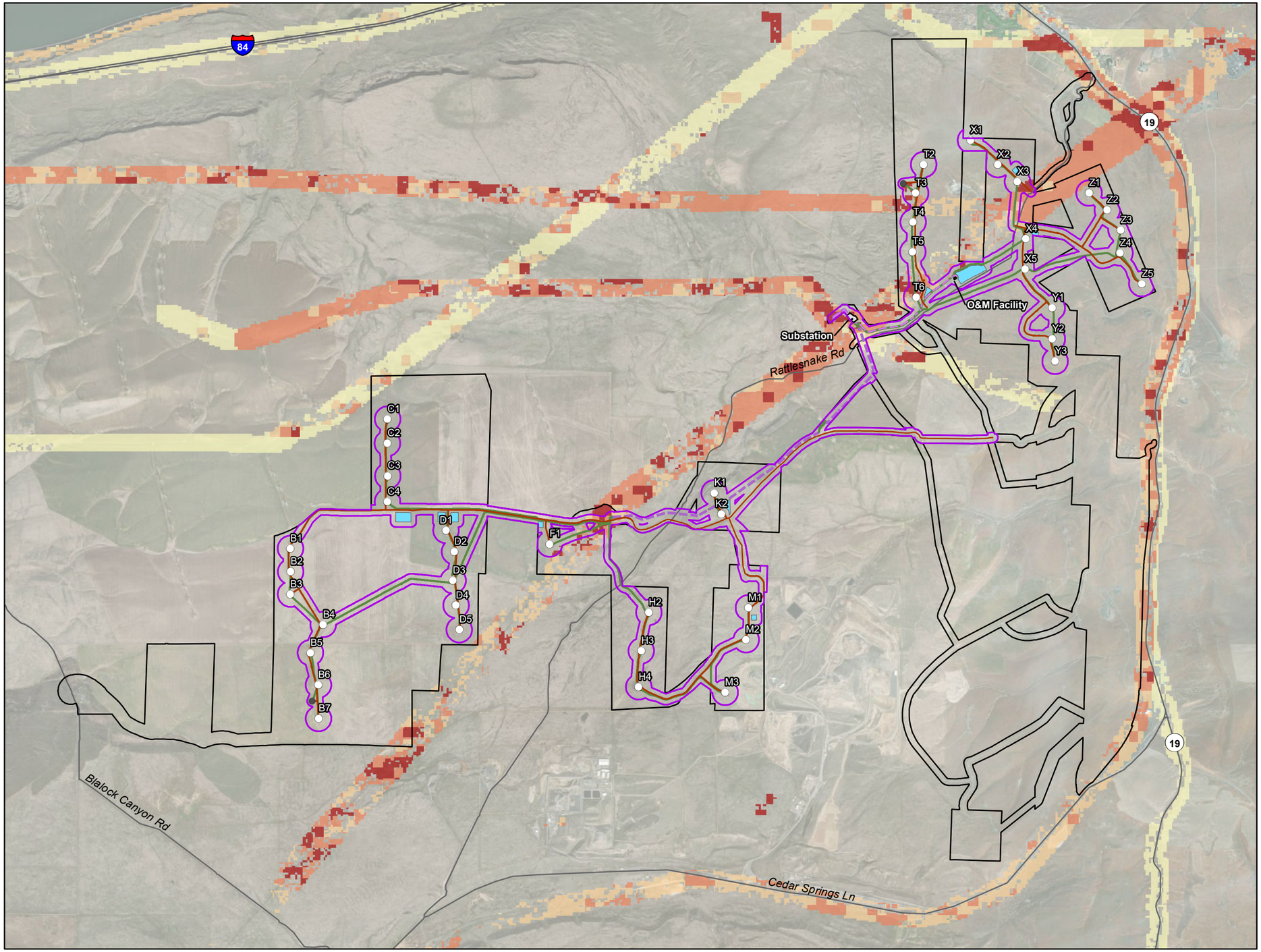

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Potential Impact to Infrastructure

- Very High
- High
- Moderate
- Low

N

0 0.5 1 2

Miles

Figure 10G
Wildfire Potential Impacts to Infrastructure
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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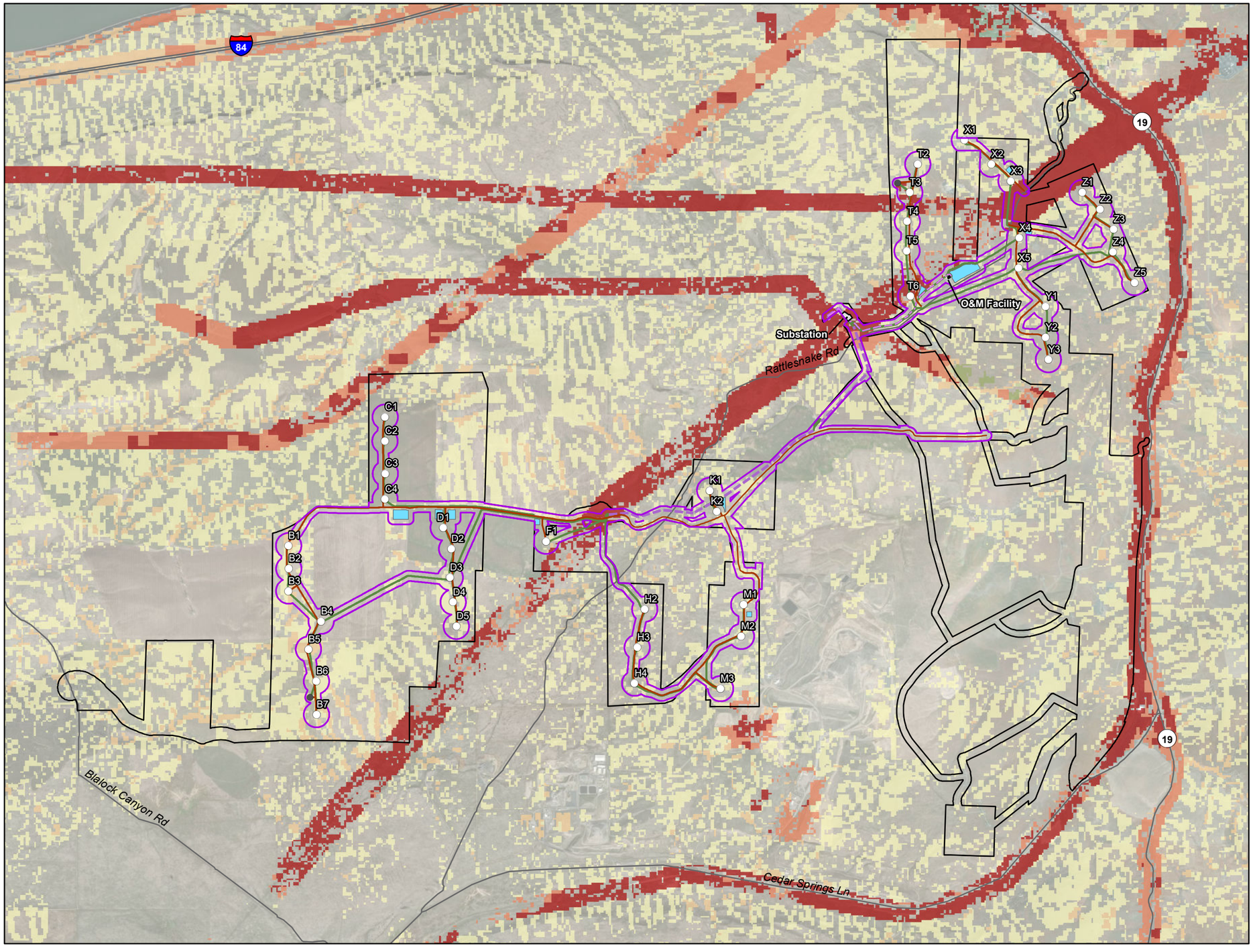

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Overall Wildfire Risk

- Very high
- High
- Moderate
- Low
- Low benefit
- Benefit

N

0 0.5 1 2

Miles

Figure 10H
Overall Fire Risk
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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Attachment 1
Redlined Site Certificate

ENERGY FACILITY SITING COUNCIL

OF THE

STATE OF OREGON

Third Amended Site Certificate for the Leaning Juniper IIA Wind Power Facility

June 21, 2013

Internal Use

The Oregon Energy Facility Siting Council

SITE CERTIFICATE

FOR THE LEANING JUNIPER IIA WIND POWER FACILITY

I. INTRODUCTION

The Oregon Energy Facility Siting Council (Council) issues this site certificate for the Leaning Juniper IIA Wind Power Facility (the facility) in the manner authorized under ORS Chapter 469. This site certificate is a binding agreement between the State of Oregon (State), acting through the Council, and Leaning Juniper Wind Power II LLC (certificate holder) authorizing the certificate holder to construct and operate the facility in Gilliam County, Oregon.

The findings of fact, reasoning and conclusions of law underlying the terms and conditions of this site certificate are set forth in the following documents, incorporated herein by this reference: (a) the Council's *Final Order on the Application* for the facility issued on September 21, 2007, (b) the Council's *Final Order on Amendment #1 for LJF*, ~~and~~ (c) the Council's *Final Order on Amendment #2 for LJF*; and (d) the Council's *Final Order on Amendment #3 for LJIIA*. In interpreting this site certificate, any ambiguity will be clarified by reference to the following, in order of priority: (1) this ~~Amended~~ Site Certificate, (2) the *Final Order on Amendment #3*, (3) the *Final Order on Amendment #2 for LJF*, (4~~3~~) the *Final Order on Amendment #1 for LJF*, (5~~4~~) the *Final Order on the Application for LJF*, and (6~~5~~) the record of the proceedings that led to the Final Orders on the Application, Amendment #1, ~~and~~ Amendment #2 for LJF, and Amendment #3 for LJIIA.

The definitions in ORS 469.300 and OAR 345-001-0010 apply to terms used in this site certificate, except where otherwise stated or where the context clearly indicates otherwise.

II. SITE CERTIFICATION

1. To the extent authorized by state law and subject to the conditions set forth herein, the State authorizes the certificate holder to construct, operate and retire a wind energy facility, together with certain related or supporting facilities, at the site in Gilliam County, Oregon, as described in Section III of this site certificate. ORS 469.401(1).

2. This site certificate is effective until it is terminated under OAR 345-027-0110 or the rules in effect on the date that termination is sought or until the site certificate is revoked under ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered. ORS 469.401(1).

3. This site certificate does not address, and is not binding with respect to, matters that were not addressed in the Council's Final Orders on the Application and Amendment #1 for LJF, ~~and~~ Amendment #2 for LJF, and Amendment #3 for LJIIA. Such matters include, but are not limited to: building code compliance, wage, hour and other labor regulations, local government fees and charges and other design or operational issues that do not relate to siting the facility

Internal Use

(ORS 469.401(4)) and permits issued under statutes and rules for which the decision on

compliance has been delegated by the federal government to a state agency other than the Council. 469.503(3).

4. Both the State and the certificate holder shall abide by local ordinances, state law and the rules of the Council in effect on the date this site certificate is executed. ORS 469.401(2). In addition, upon a clear showing of a significant threat to public health, safety or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules. ORS 469.401(2).

5. For a permit, license or other approval addressed in and governed by this site certificate, the certificate holder shall comply with applicable state and federal laws adopted in the future to the extent that such compliance is required under the respective state agency statutes and rules. ORS 469.401(2).

6. Subject to the conditions herein, this site certificate binds the State and all counties, cities and political subdivisions in Oregon as to the approval of the site and the construction, operation and retirement of the facility as to matters that are addressed in and governed by this site certificate. ORS 469.401(3).

7. Each affected state agency, county, city and political subdivision in Oregon with authority to issue a permit, license or other approval addressed in or governed by this site certificate shall, upon submission of the proper application and payment of the proper fees, but without hearings or other proceedings, issue such permit, license or other approval subject only to conditions set forth in this site certificate. ORS 469.401(3).

8. After issuance of this site certificate, each state agency or local government agency that issues a permit, license or other approval for the facility shall continue to exercise enforcement authority over such permit, license or other approval. ORS 469.401(3).

9. After issuance of this site certificate, the Council shall have continuing authority over the site and may inspect, or direct the Oregon Department of Energy (Department) to inspect, or request another state agency or local government to inspect, the site at any time in order to ensure that the facility is being operated consistently with the terms and conditions of this site certificate. ORS 469.430.

III. DESCRIPTION

1. The Facility

(a) The Energy Facility

The energy facility is an operating electric power generating plant with an average electric generating capacity of approximately 30 megawatts and up to an approved peak generating capacity of 124 ~~not more than 90.3 277~~ megawatts that produces power from wind energy. ~~The facility consists of not more than 43 127 wind turbines. The maximum peak generating capacity of each turbine is not more than 2.1 3.0 megawatts.~~ The energy facility is described further in

the Final Orders on the Application, ~~and~~ Amendment #1 for the LJF, Amendment #2 for LJF, and Amendment #3 for LJIA. ~~[Amendment #2 (LJF)]~~

(b) Wind Turbine Repower

Wind turbine repowering includes removal and replacement of wind turbine blades, nacelles, and other associated wind turbine components on up to 36 existing turbines. Of the 43 approved turbines, following the repower, 40 turbines will remain operational with 36 turbines repowered, 3 decommissioned to retirement level, and 4 as originally constructed. Wind turbine repower requires temporary disturbance within the previously approved micrositing corridors and site boundary. In addition to the previously approved related or supporting facilities described below, the repower will require:

- Temporary Repower Staging Areas
- Temporary Crane Walks
- A new 34.5 kV power collection system to be installed adjacent to the existing collector system

(cb) Related or Supporting Facilities

The facility includes the following related or supporting facilities described below and in greater detail in the Final Order on Amendment #32 for LJIIA:

- Power collection system
- Substations and interconnection system
- Meteorological towers
- Operations and maintenance facilities
- Control system
- Access roads

Power Collection System

A power collection system operating at 34.5 kilovolts (kV) transports power from each turbine to a collector substation. To the extent practicable, the collection system is installed underground at a depth of at least three feet. Not more than 30 percent of the collector system is installed aboveground.

Substations and Interconnection System

The facility includes a substation located near the Bonneville Power Administration (BPA) Jones Canyon Switching Station. An aboveground transmission line carries the power from the substation to a BPA switching station and an interconnection with the regional transmission grid through BPA's McNary-Santiam 230-kV transmission line.

Meteorological Towers

The facility includes two permanent meteorological (met) towers. The met towers are non-guyed steel towers approximately 80 meters in height.

Operations and Maintenance Facilities

The facility includes one operations and maintenance (O&M) building with approximately two acres of fenced, graveled parking and storage area.

Control System

A fiber optic communications network links the wind turbines to a central computer at the O&M buildings. A "supervisory, control and data acquisition" (SCADA) system collects

Internal Use

operating and performance data from each wind turbine and from the project as a whole and allows remote operation of the wind turbines.

Access Roads

The facility includes access roads to provide access to the turbine strings.

4.2. Location of the Proposed Facility

The facility is located southwest of Arlington, in Gilliam County, Oregon. The site is in Townships 2 and 3 North and Ranges 20 and 21 East. The facility is located on land subject to lease agreements with landowners.

IV. CONDITIONS REQUIRED BY COUNCIL RULES

This section lists conditions required by OAR 345-027-0020 (Mandatory Conditions in Site Certificates), OAR 345-027-0023 (Site Specific Conditions), OAR 345-027-0028 (Monitoring Conditions) and OAR Chapter 345, Division 26 (Construction and Operation Rules for Facilities). These conditions should be read together with the specific facility conditions listed in Section V to ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to protect the public health and safety. In these conditions, "Office of Energy" means the Oregon Department of Energy, and the other definitions in OAR 345-001-0010 apply.

The obligation of the certificate holder to report information to the Department or the Council under the conditions listed in this section and in Section V is subject to the provisions of ORS 192.502 *et seq*. and ORS 469.560. To the extent permitted by law, the Department and the Council will not publicly disclose information that may be exempt from public disclosure if the certificate holder has clearly labeled such information and stated the basis for the exemption at the time of submitting the information to the Department or the Council. If the Council or the Department receives a request for the disclosure of the information, the Council or the Department, as appropriate, will make a reasonable attempt to notify the certificate holder and will refer the matter to the Attorney General for a determination of whether the exemption is applicable, pursuant to ORS 192.450.

In addition to these conditions, the site certificate holder is subject to all conditions and requirements contained in the rules of the Council and in local ordinances and state law in effect on the date the certificate is executed. Under ORS 469.401(2), upon a clear showing of a significant threat to the public health, safety or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules.

The Council recognizes that many specific tasks related to the design, construction, operation and retirement of the facility will be undertaken by the certificate holder's agents or contractors. Nevertheless, the certificate holder is responsible for ensuring compliance with all provisions of the site certificate.

1 OAR 345-027-0020(1): The Council shall not change the conditions of the site certificate except as provided for in OAR Chapter 345, Division 27.

2 OAR 345-027-0020(2): The certificate holder shall submit a legal description of the site to the Department of Energy within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identifies the outer boundaries that contain all parts of the facility.

3 OAR 345-027-0020(3): The certificate holder shall design, construct, operate and retire the facility:

(a) Substantially as described in the site certificate;

(b) In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the site certificate is issued; and

(c) In compliance with all applicable permit requirements of other state agencies.

4 OAR 345-027-0020(4): The certificate holder shall begin and complete construction of the facility by the dates specified in the site certificate. *(See conditions 25 and 26.)*

5 OAR 345-027-0020(5): Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under this section, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the certificate holder has construction rights on all parts of the site. For the purpose of this rule, "construction rights" means the legal right to engage in construction activities. For wind energy facilities, transmission lines or pipelines, if the certificate holder does not have construction rights on all parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-0010, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and:

(a) The certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of a transmission line or pipeline occurs during the certificate holder's negotiations to acquire construction rights on another part of the site; or

(b) The certificate holder would construct and operate part of a wind energy facility on that part of the site even if other parts of the facility were modified by amendment of the site certificate or were not built.

6 OAR 345-027-0020(6): If the Council requires mitigation based on an affirmative finding under any standards of Division 22 or Division 24 of this chapter, the certificate holder shall consult with affected state agencies and local governments designated by the

Council and shall develop specific mitigation plans consistent with Council findings under the relevant standards. The certificate holder must submit the mitigation plans to the Office and receive Office approval before beginning construction or, as appropriate, operation of the facility.

7 OAR 345-027-0020(7): The certificate holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder.

8 OAR 345-027-0020(8): Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility. *(See Condition 30.)*

9 OAR 345-027-0020(9): The certificate holder shall retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder shall retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder shall pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the site certificate of an estimated amount required to restore the site.

10 OAR 345-027-0020(10): The Council shall include as conditions in the site certificate all representations in the site certificate application and supporting record the Council deems to be binding commitments made by the applicant.

11 OAR 345-027-0020(11): Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for facility operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility.

12 OAR 345-027-0020(12): The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. As used in this rule "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement and subsidence.

13 OAR 345-027-0020(13): The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ

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significantly from those described in the application for a site certificate. After the Department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division and to propose mitigation actions.

14 OAR 345-027-0020(14): The certificate holder shall notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site.

15 OAR 345-027-0020(15): Before any transfer of ownership of the facility or ownership of the site certificate holder, the certificate holder shall inform the Department of the proposed new owners. The requirements of OAR 345-027-0100 apply to any transfer of ownership that requires a transfer of the site certificate

16 OAR 345-027-0020(16): If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council shall notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Office within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed a final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in section (8) to restore the site to a useful, non-hazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council shall issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan.

17 OAR 345-027-0023(4): If the facility includes any transmission line under Council jurisdiction:

(a) The certificate holder shall design, construct and operate the transmission line in accordance with the requirements of the National Electrical Safety Code (American National Standards Institute, Section C2, 1997 Edition); and

(b) The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the line.

18 OAR 345-027-0023(5): If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a pipeline or transmission line, the Council shall specify an approved corridor in the site certificate and shall allow the certificate

holder to construct the pipeline or transmission line anywhere within the corridor, subject to the conditions of the site certificate. If the applicant has analyzed more than one corridor in its application for a site certificate, the Council may, subject to the Council's standards, approve more than one corridor.

19 OAR 345-027-0028: The following general monitoring conditions apply:

(a) The certificate holder shall consult with affected state agencies, local governments and tribes and shall develop specific monitoring programs for impacts to resources protected by the standards of Divisions 22 and 24 of this chapter and resources addressed by applicable statutes, administrative rules and local ordinances. The certificate holder must submit the monitoring programs to the Department of Energy and receive Department approval before beginning construction or, as appropriate, operation of the facility.

(b) The certificate holder shall implement the approved monitoring programs described in section (a) and monitoring programs required by permitting agencies and local governments.

(c) For each monitoring program described in sections (1) and (2), the certificate holder shall have quality assurance measures approved by the Department before beginning construction or, as appropriate, before beginning commercial operation.

(d) If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and any affected site certificate conditions.

20 OAR 345-026-0048: Following receipt of a site certificate or an amended site certificate, the certificate holder shall implement a plan that verifies compliance with all site certificate terms and conditions and applicable statutes and rules. As a part of the compliance plan, to verify compliance with the requirement to begin construction by the date specified in the site certificate, the certificate holder shall report promptly to the Department of Energy when construction begins. Construction is defined in OAR 345-001-0010. In reporting the beginning of construction, the certificate holder shall describe all work on the site performed before beginning construction, including work performed before the Council issued the site certificate, and shall state the cost of that work. For the purpose of this exhibit, "work on the site" means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor. The certificate holder shall document the compliance plan and maintain it for inspection by the Department or the Council.

21 OAR 345-026-0080: The certificate holder shall report according to the following requirements:

(a) General reporting obligation for energy facilities under construction or operating:

(i) Within six months after beginning construction, and every six months thereafter during construction of the energy facility and related or supporting facilities, the certificate holder shall submit a semiannual construction progress report to the

Department of Energy. In each construction progress report, the certificate holder shall describe any significant changes to major milestones for construction. The certificate holder shall include such information related to construction as specified in the site certificate. When the reporting date coincides, the certificate holder may include the construction progress report within the annual report described in this rule.

(ii) By April 30 of each year after beginning construction, the certificate holder shall submit an annual report to the Department addressing the subjects listed in this rule. The Council Secretary and the certificate holder may, by mutual agreement, change the reporting date.

(iii) To the extent that information required by this rule is contained in reports the certificate holder submits to other state, federal or local agencies, the certificate holder may submit excerpts from such other reports to satisfy this rule. The Council reserves the right to request full copies of such excerpted reports.

(b) In the annual report, the certificate holder shall include the following information for the calendar year preceding the date of the report:

(i) Facility Status: An overview of site conditions, the status of facilities under construction and a summary of the operating experience of facilities that are in operation. In this section of the annual report, the certificate holder shall describe any unusual events, such as earthquakes, extraordinary windstorms, major accidents or the like that occurred during the year and that had a significant adverse impact on the facility.

(ii) Reliability and Efficiency of Power Production: For electric power plants, the plant availability and capacity factors for the reporting year. The certificate holder shall describe any equipment failures or plant breakdowns that had a significant impact on those factors and shall describe any actions taken to prevent the recurrence of such problems

(iii) Fuel Use: For thermal power plants:

(A) The efficiency with which the power plant converts fuel into electric energy. If the fuel chargeable to power heat rate was evaluated when the facility was sited, the certificate holder shall calculate efficiency using the same formula and assumptions, but using actual data; and

(B) The facility's annual hours of operation by fuel type and, every five years after beginning operation, a summary of the annual hours of operation by fuel type as described in OAR 345-024-0590(5).

(iv) Status of Surety Information: Documentation demonstrating that bonds or letters of credit as described in the site certificate are in full force and effect and will remain in full force and effect for the term of the next reporting period.

(v) Monitoring Report: A list and description of all significant monitoring and mitigation activities performed during the previous year in accordance with site certificate terms and conditions, a summary of the results of those activities and a discussion of any significant changes to any monitoring or mitigation program, including the reason for any such changes.

(vi) Compliance Report: A description of all instances of noncompliance with a site certificate condition. For ease of review, the certificate holder shall, in this section of the report, use numbered subparagraphs corresponding to the applicable sections of the site certificate.

(vii) Facility Modification Report: A summary of changes to the facility that the certificate holder has determined do not require a site certificate amendment in accordance with OAR 345-027-0050.

(viii) Nongenerating Facility Carbon Dioxide Emissions: For nongenerating facilities that emit carbon dioxide, a report of the annual fuel use by fuel type and annual hours of operation of the carbon dioxide emitting equipment as described in OAR 345-024-0630(4).

22 OAR 345-026-0105: The certificate holder and the Department of Energy shall exchange copies of all correspondence or summaries of correspondence related to compliance with statutes, rules and local ordinances on which the Council determined compliance, except for material withheld from public disclosure under state or federal law or under Council rules. The certificate holder may submit abstracts of reports in place of full reports; however, the certificate holder shall provide full copies of abstracted reports and any summarized correspondence at the request of the Department.

23 OAR 345-026-0170: The certificate holder shall notify the Department of Energy within 72 hours of any occurrence involving the facility if:

(a) There is an attempt by anyone to interfere with its safe operation;

(b) A natural event such as an earthquake, flood, tsunami or tornado, or a human-caused event such as a fire or explosion affects or threatens to affect the public health and safety or the environment; or

(c) There is any fatal injury at the facility.

V. SPECIFIC FACILITY CONDITIONS

The conditions listed in this section include conditions based on representations in the site certificate application and supporting record. The Council deems these representations to be binding commitments made by the applicant. These conditions are required under OAR 345-027-0020(10). The certificate holder must comply with these conditions in addition to the conditions listed in Section IV. This section includes other specific facility conditions the Council finds necessary to ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to protect public health and safety. For conditions that require subsequent review and approval of a future action, ORS 469.402 authorizes the Council to delegate the future review and approval to the Department if, in the Council's discretion, the delegation is warranted under the circumstances of the case.

1. Certificate Administration Conditions

24 [Condition Deleted Amendment #2 (LJF)]

25 The certificate holder shall begin construction of the facility by September 24, 2010. Under OAR 345-015-0085(9), a site certificate is effective upon execution by the Council

Chair and the applicant. The Council may grant an extension of the deadline to begin construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted. [Amendment #1 (LJF)]

26 The certificate holder shall complete construction of the facility by September 24, 2013. Construction is complete when: 1) the facility is substantially complete as defined by the certificate holder's construction contract documents, 2) acceptance testing has been satisfactorily completed and 3) the energy facility is ready to begin continuous operation consistent with the site certificate. The certificate holder shall promptly notify the Department of the date of completion of construction. The Council may grant an extension of the deadline for completing construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted. [Amendment #1 (LJF)]

27 The certificate holder shall construct a facility substantially as described in the site certificate and may select turbines of any type, subject to the following restrictions:

(a) The total number of turbines at the facility must not exceed 47 turbines.

(b) The peak generating capacity of each turbine must not exceed 3.0 megawatts.

(c) The combined peak generating capacity of the facility must not exceed 124 megawatts.

(d) The turbine hub height must not exceed 100 meters, and the turbine blade tip height must not exceed 150 meters.

(e) The minimum blade tip clearance must be 30 meters above ground.

(f) The certificate holder shall request an amendment of the site certificate to increase the combined peak generating capacity of the facility or to increase the number of wind turbines or the dimensions of wind turbines at the facility.

[Amendment #1 (LJF)]

28 The certificate holder shall obtain all necessary federal, state and local permits or approvals required for construction, operation and retirement of the facility or ensure that its contractors obtain the necessary federal, state and local permits or approvals.

29 Before beginning construction, the certificate holder shall notify the Department in advance of any work on the site that does not meet the definition of "construction" in OAR 345-001-0010 or ORS 469.300 and shall provide to the Department a description of the work and evidence that its value is less than $250,000.

30 Before beginning construction of the LJIIA components as described in the *Final Order on Amendment #1 for LJF*, the certificate holder shall submit to the State of Oregon through the Council a bond or letter of credit in the amount described herein naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The

initial bond or letter of credit amount is $8.847 million (in 2006 dollars), adjusted to the date of issuance as described in (b), or the amount determined as described in (a). The certificate holder shall adjust the amount of the bond or letter of credit on an annual basis thereafter as described in (b).

(a) The certificate holder may adjust the amount of the bond or letter of credit based on the final design configuration of the LJIIA components by applying the unit costs and general costs illustrated in Table 2 and Table 3 of the Final Order on the Application to the final design and calculating the financial assurance amount as described in that order, adjusted to the date of issuance as described in (b) and subject to approval by the Department.

(b) The certificate holder shall adjust the amount of the bond or letter of credit, using the following calculation and subject to approval by the Department:

(i) Adjust the Subtotal component of the bond or letter of credit amount (expressed in 2006 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency (the "Index") and using the annual average index value for 2006 dollars and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the Index is no longer published, the Council shall select a comparable calculation to adjust 2006 dollars to present value.

(ii) Add 1 percent of the adjusted Subtotal (i) for the adjusted performance bond amount to determine the adjusted Gross Cost.

(iii) Add 10 percent of the adjusted Gross Cost for the adjusted administration and project management costs and 10 percent of the adjusted Gross Cost for the adjusted future developments contingency.

(iv) Add the adjusted Gross Cost (ii) to the sum of the percentages (iii) and round the resulting total to the nearest $1,000 to determine the adjusted financial assurance amount.

(c) The certificate holder shall use a form of bond or letter of credit approved by the Council.

(d) The certificate holder shall use an issuer of the bond or letter of credit approved by the Council.

(e) The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under Condition 21.

(f) The bond or letter of credit shall not be subject to revocation or reduction before retirement of the facility site.

[Amendment #2(LJF)]

31 If the certificate holder elects to use a bond to meet the requirements of Condition 30 or Condition 101, the certificate holder shall ensure that the surety is obligated to comply with the requirements of applicable statutes, Council rules and this site certificate when the surety exercises any legal or contractual right it may have to assume construction, operation or retirement of the energy facility. The certificate

holder shall also ensure that the surety is obligated to notify the Council that it is exercising such rights and to obtain any Council approvals required by applicable statutes, Council rules and this site certificate before the surety commences any activity to complete construction, operate or retire the energy facility. [Amendment #1 (LJF)]

32 Before beginning construction, the certificate holder shall notify the Department of the identity and qualifications of major construction contractor(s) for specific portions of the work. The certificate holder shall select contractors that have substantial experience in the design and construction of similar facilities. The certificate holder shall report to the Department any change of major construction contractors.

33 The certificate holder shall contractually require all construction contractors and subcontractors involved in the construction of the facility to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. Such contractual provisions shall not operate to relieve the certificate holder of responsibility under the site certificate.

34 During construction, the certificate holder shall have an on-site assistant construction manager who is qualified in environmental compliance to ensure compliance with all construction-related site certificate conditions. During operation, the certificate holder shall have a project manager who is qualified in environmental compliance to ensure compliance with all ongoing site certificate conditions. The certificate holder shall notify the Department of the name, telephone number, fax number and e-mail address of these managers and shall keep the Department informed of any change in this information.

35 Within 72 hours after discovery of conditions or circumstances that may violate the terms or conditions of the site certificate, the certificate holder shall report the conditions or circumstances to the Department.

2. Land Use Conditions

36 The certificate holder shall cooperate with the Gilliam County Road Department to ensure that any unusual damage or wear to county roads that is caused by construction of the facility is repaired by the certificate holder. Upon completion of construction, the certificate holder shall restore county roads to pre-construction condition or better, to the satisfaction of the County Road Department.

37 During construction, the certificate holder shall implement measures to reduce traffic impacts, including:

(a) Providing notice to adjacent landowners when heavy construction traffic is anticipated.

(b) Providing appropriate traffic safety signage and warnings.

(c) Requiring flaggers to be at appropriate locations at appropriate times during construction to direct traffic reduce accident risks.

(d) Using traffic diversion equipment (such as advanced signage and pilot cars) when slow or oversize construction loads are anticipated.

(e) Maintaining at least one travel lane at all times to the extent reasonably possible so that roads will not be closed to traffic because of construction vehicles. [Amendment #1 (LJF)]

(f) Encouraging carpooling for the construction workforce.

(g) Including traffic control procedures in contract specifications for construction of the facility.

(h) Keeping the access from Highway 19 free of gravel that tracks out onto the highway.

38 The certificate holder shall ensure that no equipment or machinery is parked or stored on any county road except while in use.

39 The certificate holder shall construct all facility components in compliance with the following setback requirements:

(a) All facility components must be at least 3,520 feet from the property line of properties zoned residential use or designated in the Gilliam County Comprehensive Plan as residential.

(b) Where (a) does not apply, the certificate holder shall maintain a minimum distance of 110-percent of maximum blade tip height, measured from the centerline of the turbine tower to the nearest edge of any public road right-of-way. The certificate holder shall assume a minimum right-of-way width of 60 feet.

(c) Where (a) does not apply, the certificate holder shall maintain a minimum distance of 1,320 feet, measured from the centerline of the turbine tower to the center of the nearest residence existing at the time of tower construction.

(d) Where (a) does not apply, the certificate holder shall maintain a minimum distance of 110-percent of maximum blade tip height, measured from the centerline of the turbine tower to the nearest boundary of the certificate holder's lease area.

(e) The certificate holder shall maintain a minimum distance of 250 feet measured from the center line of each turbine tower to the nearest edge of any railroad right-of-way or electrical substation.

(f) The certificate holder shall maintain a minimum distance of 250 feet measured from the center line of each meteorological tower to the nearest edge of any public road right-of-way or railroad right-of-way, nearest boundary of the certificate holder's lease area or nearest electrical substation.

(g) The certificate holder shall maintain a minimum distance of 50 feet measured from any facility O&M building to the nearest edge of any public road right-of-way or railroad right-of-way or the nearest boundary of the certificate holder's lease area.

(h) The certificate holder shall maintain a minimum distance of 50 feet measured from any substation to the nearest edge of any public road right-of-way or railroad right-of-way or the nearest boundary of the certificate holder's electrical substation easement or, if there is no easement, the nearest boundary of the certificate holder's lease area.

[Amendment #1 (LJF)]

40 The certificate holder shall consult with area landowners and lessees during construction and operation of the facility and shall implement measures to reduce or avoid any adverse impacts to farm practices on surrounding lands and to avoid any increase in farming costs.

41 The certificate holder shall locate access roads and temporary construction laydown and staging areas to minimize disturbance with farming practices and, wherever feasible, shall place turbines and transmission interconnection lines along the margins of cultivated areas to reduce the potential for conflict with farm operations.

42 Before beginning construction of any phase of the facility, the certificate holder shall record in the real property records of Gilliam County a Covenant Not to Sue with regard to generally accepted farming practices on farmland adjacent to the construction area consistent with Gilliam County Zoning Ordinance 7.020(T)(4)(a)(5). [Amendment #1 (LJF)]

43 The certificate holder shall install lockable gates at the substation and on private access roads.

44 Within 90 days after beginning operation of any phase of the facility, the certificate holder shall provide to the Department and to the Gilliam County Planning Director the actual latitude and longitude location or Stateplane NA D 83(91) coordinates of each turbine tower, connecting line and transmission line built in that phase. In addition, the certificate holder shall provide to the Department and to the Gilliam County Planning Director, a summary of as-built changes in the facility compared to the original plan, if any. [Amendment #1 **(LJF)]**

3. Cultural Resource Conditions

45 Before beginning construction of the LJIIA components as described in the *Final Order on Amendment #1* ***for LJF***, the certificate holder shall provide to the Department a map showing the final design locations of all LJIIA components and areas that would be disturbed during their construction and also showing the LJIIA areas that were surveyed in 2004, 2005 and 2006 for cultural resources as described in the site certificate application. If areas to be disturbed during construction lie outside of the surveyed areas, the certificate holder shall hire qualified personnel to conduct field investigation of those areas. The certificate holder shall provide a written report of the field investigation to the Department and to the State Historic Preservation Office (SHPO). If any historic, cultural or archaeological resources are found during the field investigation, the certificate holder shall ensure that construction and operation of the facility will have no impact on the resources. The certificate holder shall instruct all construction personnel to avoid the areas where resources were identified in the 2004-2006 surveys or were found during pre-construction investigations and shall implement other appropriate measures to protect the resources. [Amendment #**2 (LJF)]**

46 The certificate holder shall ensure that a qualified person instructs construction personnel in the identification of cultural materials and avoidance of accidental damage to identified resource sites.

47 The certificate holder shall ensure that construction personnel cease all ground-disturbing activities in the immediate area if any archaeological or cultural resources are found during construction of the facility until a qualified archaeologist can evaluate the significance of the find. The certificate holder shall notify the Department and the State Historic Preservation Office (SHPO) of the find. If the archaeologist determines that the resource is significant, the certificate holder shall make recommendations to the Council for mitigation, including avoidance or data recovery, in consultation with the Department, SHPO and other appropriate parties. The certificate holder shall not restart work in the affected area until the certificate holder has demonstrated to the Department that it has complied with the archaeological permit requirements administered by SHPO.

48 During construction of the LJIIA components as described in the *Final Order on Amendment #1* ***for LJF***, the certificate holder shall label all identified historic, cultural or archaeological resource sites on construction maps and drawings as "no entry" areas, and if construction activities will occur within 200 feet of an identified site, the certificate holder shall flag a 50-foot buffer around the site. **[**Amendment #2 **(LJF)]**

4. Geotechnical Conditions

49 Before beginning construction ~~of any phase~~ of the facility, the certificate holder shall conduct site-specific geotechnical investigation of that phase and shall report its findings to the Oregon Department of Geology & Mineral Industries (DOGAMI). The certificate holder shall conduct the geotechnical investigation after consultation with DOGAMI and in general accordance with DOGAMI open file report 00-04 "Guidelines for Engineering Geologic Reports and Site-Specific Seismic Hazard Reports." **[Amendment #2 (LJF)]**

50 The certificate holder shall design and construct the facility in accordance with requirements set forth by the State of Oregon's Building Code Division and any other applicable codes and design procedures. The certificate holder shall design all components of the facility to meet or exceed the minimum standards required by the 2003 International Building Code.

51 The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by non-seismic hazards. As used in this condition, "non-seismic hazards" include settlement, landslides, flooding and erosion.

5. Hazardous Materials, Fire Protection & Public Safety Conditions

52 The certificate holder shall notify the Department within 72 hours of any accidents including mechanical failures on the site associated with construction or operation of the facility that may result in public health and safety concerns.

53 Before beginning construction of any phase of the facility, the certificate holder shall submit Notices of Proposed Construction or Alteration to the Federal Aviation Administration (FAA) and the Oregon Department of Aviation identifying the proposed final locations of the turbines and related or supporting facilities in that phase of construction. The certificate holder shall promptly notify the Department of the responses from the FAA and the Oregon Department of Aviation. [Amendment #1 **(LJF)]**

54 To protect the public from electrical hazards, the certificate holder shall enclose the facility substations with appropriate fencing and locked gates.

55 The certificate holder shall construct turbine towers that are smooth steel structures with no exterior ladders or access to the turbine blades and shall install locked access doors accessible only to authorized personnel.

56 The certificate holder shall follow manufacturers' recommended handling instructions and procedures to prevent damage to towers or blades that could lead to failure.

57 The certificate holder shall have an operational safety monitoring program and shall inspect turbine blades on a regular basis for signs of wear. The certificate holder shall repair turbine blades as necessary to protect public safety.

58 The certificate holder shall install and maintain self-monitoring devices on each turbine, linked to sensors at the operations and maintenance building, to alert operators to potentially dangerous conditions, and the certificate holder shall immediately remedy any dangerous conditions. The certificate holder shall maintain automatic equipment protection features in each turbine that would shut down the turbine and reduce the chance of a mechanical problem causing a fire.

59 The certificate holder shall install generator step-up transformers at the base of each tower in locked cabinets designed to protect the public from electrical hazards and shall design the cabinets to avoid creation of artificial habitat for raptor prey.

60 The certificate holder shall construct turbines on concrete pads with a minimum of 10 feet of non-flammable and non-erosive ground cover on all sides. The certificate holder shall cover turbine pad areas with non-erosive material immediately following exposure during construction and shall maintain the pad area covering during operation of the facility.

61 During construction and operation of the facility, the certificate holder shall develop and implement fire safety plans in consultation with the North Gilliam County Rural Fire Protection District and the Arlington Fire Department to minimize the risk of fire and to respond appropriately to any fires that occur on the facility site. In developing the fire safety plans, the certificate holder should take into account the dry nature of the region

and should address risks on a seasonal basis. The certificate holder shall meet annually with District and Fire Department personnel to discuss emergency planning and shall invite District and Fire Department personnel to observe any emergency drill or tower rescue training conducted at the facility.

62 During construction and operation of the facility, the certificate holder shall ensure that the O&M buildings and all service vehicles are equipped with shovels and portable fire extinguishers of a 4A5OBC or equivalent rating.

63 During construction, the certificate holder shall ensure that construction vehicles and equipment are operated on graveled areas to the extent possible and that open flames, such as cutting torches, are kept away from dry grass areas.

64 Upon the beginning of operation of the facility, the certificate holder shall provide to North Gilliam County Rural Fire Protection District and the Arlington Fire Department a site plan indicating the identification number assigned to each turbine and the location of all facility structures. During operation, the certificate holder will ensure that appropriate District and Fire Department personnel have an up-to-date list of the names and telephone numbers of facility personnel available to respond on a 24-hour basis in case of an emergency on the facility site.

65 During operation, the certificate holder shall ensure that all on-site employees receive annual fire prevention and response training, including tower rescue training, by qualified instructors or members of the local fire department and that all employees are instructed to keep vehicles on roads and off dry grassland, except when off-road operation is required for emergency purposes.

66 During construction, the certificate holder shall require that all on-site construction contractors develop and implement a site health and safety plan that informs workers and others on-site what to do in case of an emergency and that includes the locations of fire extinguishers and nearby hospitals, important telephone numbers and first aid techniques. The certificate holder shall ensure that construction contractors have personnel on-site who are trained and equipped for tower rescue and who are first aid and CPR certified.

67 During operation, the certificate holder shall develop and implement a site health and safety plan that informs employees and others on-site what to do in case of an emergency and that includes the locations of fire extinguishers and nearby hospitals, important telephone numbers and first aid techniques.

68 The certificate holder shall handle any hazardous materials used on the site in a manner that protects public health, safety and the environment and shall comply with all applicable local, state and federal environmental laws and regulations.

69 If a spill or release of hazardous materials occurs during construction or operation of the facility, the certificate holder shall notify the Department within 72 hours and shall clean up the spill or release and dispose of any contaminated soil or other materials according

to applicable regulations. The certificate holder shall make sure that spill kits containing items such as absorbent pads are located on equipment and storage facilities to respond to accidental spills and shall instruct employees handling hazardous materials in the proper handling, storage and cleanup of these materials.

6. Water, Soils, Streams & Wetlands Conditions

70 The certificate holder shall conduct all construction work in compliance with an Erosion and Sediment Control Plan (ESCP) satisfactory to the Oregon Department of Environmental Quality and as required under the National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge General Permit #1200-C. The certificate holder shall include in the ESCP any procedures necessary to meet local erosion and sediment control requirements and storm water management requirements.

71 During construction, the certificate holder shall limit truck traffic to designated existing and improved road surfaces to avoid soil compaction, to the extent possible.

72 During construction, the certificate holder shall avoid impacts to waters of the state in the following manner:

(a) The certificate holder shall avoid any disturbance, including the placement of poles for the collector line, within 25 feet of the stream channel in the area identified as "S5" on Figure J-1 of the Site Certificate Application.

(b) The certificate holder shall avoid any disturbance to the six wetland areas identified as "W1" through "W6" on Figure J-1 of the Site Certificate Application [Amendment #**2 (LJF)**].

(c) The certificate holder shall avoid any disturbance to the stream channels identified as "S24" and "S25" on Figure J-1 of the Site Certificate Application.

(d) Before beginning construction affecting the location identified as "S27" on Figure J-1 of the Site Certificate Application, the certificate holder shall apply for and obtain a Removal/Fill Permit from the Department of State Lands, which, in accordance with ORS 469.401, shall issue the permit substantially in the form of Attachment F of the *Final Order on the Application* and subject only to the conditions of this site certificate including substantive requirements listed in that attachment.

(e) Before beginning construction of any phase of the facility, the certificate holder shall determine whether any construction disturbance in that phase would occur in locations not previously investigated for potential jurisdictional waters as described in the Final Orders on the Application and Amendment #1 **for LJF.** The certificate holder shall conduct pre-construction investigations to determine whether any jurisdictional waters exist in those locations. The certificate holder shall submit a written report on the pre-construction investigation to the Department of Energy and to the Department of State Lands for approval before beginning construction of any phase of the facility and shall ensure that construction of that phase would have no impact on any jurisdictional water identified in the report. [Amendment #**2 (LJF)**]

73 During construction, the certificate holder shall ensure that the wash down of concrete trucks occurs only at a contractor-owned batch plant or at tower foundation locations. If such wash down occurs at tower foundation locations, then the certificate holder shall ensure that wash down wastewater does not run off the construction site into otherwise undisturbed areas and that the wastewater is disposed of on backfill piles and buried underground with the backfill over the tower foundation.

74 The certificate holder shall restore areas outside the permanent footprint that are disturbed during construction according to the methods and monitoring procedures described in the *Revegetation Plan* that is incorporated in the *Final Order on Amendment #**2 for LJF*** as Attachment F and as amended from time to time. [Amendment #**2 (LJF)**]

75 During facility operation, the certificate holder shall routinely inspect and maintain all roads, pads and trenched areas and, as necessary, maintain or repair erosion control measures. The certificate holder shall restore areas that are temporarily disturbed during facility maintenance or repair activities to pre-disturbance condition or better.

76 During facility operation, the certificate holder shall obtain water for on-site uses from one or more on-site wells, subject to compliance with any applicable permit requirements, not exceeding 5,000 gallons per day. The certificate holder shall not change the source of water for on-site uses without prior Department approval.

77 During facility operation, if blade-washing becomes necessary, the certificate holder shall ensure that there is no runoff of wash water from the site or discharges to surface waters, storm sewers or dry wells. The certificate holder shall not use more than 50 gallons of water per blade and shall not wash more than eight turbines (24 blades) per week. The certificate holder shall not use acids, bases or metal brighteners with the wash water. The certificate may use biodegradable, phosphate-free cleaners sparingly.

7. Transmission Line & EMF Conditions

78 The certificate holder shall install the 34.5-kV collector system underground to the extent practical. The certificate holder shall install underground segments of the collector system at a minimum depth of three feet. Where geotechnical conditions or other engineering considerations require, the certificate holder may install segments of the collector system aboveground, but the total length of aboveground segments must not exceed 30 percent of the collector system. The certificate holder shall construct aboveground segments of the collector system using single or double circuit monopole design as described in the site certificate application. [Amendment #**2 (LJF)**]

79 At least 30 days before beginning preparation of detailed design and specifications for the electrical transmission lines, the certificate holder shall consult with the Oregon Public Utility Commission staff to ensure that transmission line designs and specifications are consistent with applicable codes and standards.

80 To protect public safety, the certificate holder shall design and maintain the transmission lines so that:

(a) Alternating current electric fields during operation do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public.

(b) Induced voltages during operation are as low as reasonably achievable.

81 The certificate holder shall take reasonable steps to reduce or manage human exposure to electromagnetic fields, including but not limited to:

(a) Constructing all aboveground transmission lines at least 200 feet from any residence or other occupied structure.

(b) Ensuring that the area near the facility substation is inaccessible to the public by fencing the area.

(c) Constructing aboveground 34.5-kV transmission lines with a minimum clearance of 25 feet from the ground.

(d) Constructing all aboveground 230-kV transmission lines with a minimum clearance of 30 feet from the ground.

(e) Providing to landowners a map of underground and overhead transmission lines on their property and advising landowners of possible health risks.

[Amendment #1 **(LJF)]**

8. Plants, Wildlife & Habitat Protection Conditions

82 During construction and operation of the facility, the certificate holder shall implement a plan to control the introduction and spread of noxious weeds. The certificate shall develop the weed control plan in consultation with the Gilliam County Weed Control Board.

83 The certificate holder shall design all aboveground transmission line support structures following the practices suggested by the Avian Powerline Interaction Committee (2006) and shall install anti-perching devices on transmission pole tops and cross arms where the poles are located within ½ mile of turbines. [Amendment #1 (LJF)]

84 The certificate holder may construct turbines and other facility components within the site boundary as described in the Final Orders on the Application and Amendment #1 **for the LJF**, subject to the following requirements addressing potential habitat impact:

(a) The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.

(b) The certificate holder shall design and construct facility components that are the minimum size needed for safe operation of the energy facility.

(c) In the final design of the facility within micrositing areas, the certificate holder shall reduce impact on essential or important habitat (Category 4 and above) to the extent practical.

(d) As a protective measure during construction, the certificate holder shall install exclusion fencing around confirmed populations

sessile mousetail

(identified in Figure Q-3 of the site certificate application). The certificate holder shall not install facility components or cause temporary disturbance within these areas. Before beginning construction, the certificate holder shall verify the protected status of sessile mousetail and notify the Department. If the species has been upgraded to threatened or endangered under State or federal law, the certificate holder shall take appropriate mitigation actions, subject to Department approval. **[Amendment #2 (LJF)]**

(e) If construction would affect locations within the micrositing areas that were not previously surveyed for the occurrence of State or federal threatened or endangered species as described in the Final Orders on the Application and Amendment #**1 for LJF,** the certificate holder shall conduct additional pre-construction surveys of those locations, notify the Department of the findings and implement appropriate avoidance or mitigation measures for any threatened or endangered species detected, subject to Department approval.
[Amendment #**2 (LJF)**]

85 The certificate holder shall implement measures to mitigate impacts to sensitive wildlife habitat during construction and operation including, but not limited to, the following:

(a) Preparing maps to show sensitive areas, such as nesting or denning areas for sensitive wildlife species, that are off limits to construction personnel.

(b) Before beginning construction of any phase of the facility, the certificate holder shall have a qualified biologist place exclusion markers around sensitive wildlife habitat areas for that phase of construction, including Category 1 Washington ground squirrel (WGS) areas and an appropriate buffer around these areas. The certificate holder shall maintain the exclusion markings until that phase of construction has been completed.

(c) Ensuring that a qualified person instructs construction and operations personnel to be aware of wildlife in the area and to take precautions to avoid injuring or destroying wildlife or sensitive wildlife habitat.

(d) Avoiding unnecessary road construction, temporary disturbance and vehicle use. Posting and maintaining speed limit signs (not to exceed 20 miles per hour) on access roads throughout the site. The certificate holder shall ensure that all construction and operations personnel are instructed to observe caution when driving in the facility area to avoid injury or disturbance to wildlife enforce and for personal safety.
[Amendment #1 **(LJF)]**

86 During construction of any phase of the facility, the certificate holder shall protect the area within a 1300-foot buffer around active nests of the following species during the sensitive period, as provided in this condition:

Species	**Sensitive Period**	**Early Release Date**
Swainson's hawk	April 1 to August 15	May 31
Ferruginous hawk	March 15 to August 15	May 31
Burrowing owl	April 1 to August 15	July 15

During the year in which construction of any phase of the facility occurs, the certificate holder shall use a protocol approved by the Oregon Department of Fish and Wildlife (ODFW) to determine whether there are any active nests of these species within a half-mile of any areas that would be disturbed during construction of that phase. If a nest is occupied by any of these species after the beginning of the sensitive period, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading or other major ground disturbance) or allow high levels of construction traffic within 1300 feet of the nest site. In addition, the certificate holder will flag the boundaries of the 1300-foot buffer area and shall instruct construction personnel to avoid any unnecessary activity within the buffer area. The certificate holder shall hire an independent biological monitor to observe the active nest sites during the sensitive period for signs of disturbance and to notify the Department of any non-compliance with this condition. If the monitor observes nest site abandonment or other adverse impact to nesting activity, the certificate holder shall implement appropriate mitigation, in consultation with ODFW and subject to the approval of the Department, unless the adverse impact is clearly shown to have a cause other than construction activity. The certificate holder may begin or resume high-impact construction activities before the ending day of the sensitive period if any known nest site is not occupied by the early release date. If a nest site is occupied, then the certificate holder may begin or resume high-impact construction before the ending day of the sensitive period with the approval of ODFW, after the young are fledged. The certificate holder shall use a protocol approved by ODFW to determine when the young are fledged (the young are independent of the core nest site).

[Amendment #1 **(LJF)]**

87 The certificate holder shall conduct wildlife monitoring as described in the *Wildlife Monitoring and Mitigation Plan* that is incorporated in the *Final Order on Amendment #**2for LJF*** as Attachment D and as amended from time to time. [Amendment #**2 (LJF)**]

88 Before beginning construction of the LJIIA components as described in the *Final Order on Amendment #1 **for LJF***, the certificate holder shall obtain an Incidental Take Permit (ITP) letter from the Oregon Department of Fish and Wildlife (ODFW) that incorporates the terms and commitments of the ITP application as set forth in Attachment E of the Final Order on the Application. [Amendment #**2 (LJF)**]

89 The certificate holder shall acquire the legal right to create, enhance, maintain and protect a habitat mitigation area as long as the site certificate is in effect by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Department. Within the habitat mitigation area, the certificate holder shall improve the habitat quality as described in the *Habitat Mitigation Plan* that is incorporated in the *Final Order on Amendment #**2for LJF*** as Attachment E and as amended from time to time. [Amendment #**2 (LJF)**]

9. Visual Effects Conditions

90 To reduce the visual impact of the facility, the certificate holder shall:

(a) Mount nacelles on smooth steel towers, painted uniformly in a neutral white color.

(b) Paint substation structures in a neutral color to blend with the surrounding landscape.

(c) Not allow any advertising on any part of the facility.

(d) Use only those signs required for facility safety or required by law, except that the certificate holder may erect a sign to identify the facility.

(e) Maintain any signs allowed under this condition in good repair.

91 The certificate holder shall design and construct the operation and maintenance buildings to be generally consistent with the character of similar buildings used by commercial farmers or ranchers in the area and shall paint the building in a neutral color to blend with the surrounding landscape.

92 The certificate holder shall not use exterior lighting at the facility except:

(a) The minimum turbine tower lighting required or recommended by the Federal Aviation Administration.

(b) Security lighting at the operations and maintenance buildings and at the substations, provided that such lighting is shielded or downward-directed to reduce glare.

(c) Minimum lighting necessary for repairs or emergencies.

(d) Minimum lighting necessary for construction directed to illuminate the work area and shielded or downward-directed to reduce glare.

[Amendment #**1 (LJF)**]

10. Noise Control Conditions

93 To reduce noise impacts at nearby residential areas, the certificate holder shall:

(a) Confine the noisiest operation of heavy construction equipment to the daylight hours.

(b) Require contractors to install and maintain exhaust mufflers on all combustion engine-powered equipment; and

(c) Establish a complaint response system at the construction manager's office to address noise complaints.

94 Before beginning construction of any phase of the facility, the certificate holder shall provide to the Department:

(a) Information that identifies the final design locations of all turbines to be built in that phase of construction.

(b) The maximum sound power level of the turbines and substation transformers based on manufacturers' warranties or confirmed by other means acceptable to the Department.

(c) The results of noise analysis of the facility to be built according to the final design performed in a manner consistent with the requirements of OAR 340-035-0035(1)(b)(B)(iii)(IV) and (VI) demonstrating to the satisfaction of the Department that the total noise generated by the facility (including the noise from turbines and substation transformers) would meet the ambient noise degradation test and maximum allowable test at the appropriate measurement point for all potentially-affected noise sensitive properties.

(d) For each noise-sensitive property where the certificate holder relies on a noise waiver to demonstrate compliance in accordance with OAR 340-035-0035(1)(b)(B)(iii)(III), a copy of the a legally effective easement or real covenant pursuant to which the owner of the property authorizes the certificate holder's operation of the facility to increase ambient statistical noise levels L_{10} and L_{50} by more than 10 dBA at the appropriate measurement point. The legally-effective easement or real covenant must: include a legal description of the burdened property (the noise sensitive property); be recorded in the real property records of the county; expressly benefit the certificate holder; expressly run with the land and bind all future owners, lessees or holders of any interest in the burdened property; and not be subject to revocation without the certificate holder's written approval.

[Amendment #1 **(LJF)]**

95 During operation, the certificate holder shall maintain a complaint response system to address noise complaints. The certificate holder shall promptly notify the Department of any complaints received regarding facility noise and of any actions taken by the certificate holder to address those complaints.

11. Waste Management Conditions

96 The certificate holder shall provide portable toilets for on-site sewage handling during construction and shall ensure that they are pumped and cleaned regularly by a licensed contractor who is qualified to pump and clean portable toilet facilities.

97 During operation, the certificate holder shall discharge sanitary wastewater generated at the O&M building to a licensed on-site septic system in compliance with county permit requirements. The certificate holder shall design the septic system design with a capacity that is less than 2,500 gallons per day.

98 The certificate holder shall implement a waste management plan during construction that includes but is not limited to the following measures:

(a) Training construction personnel to minimize and recycle solid waste.

(b) Minimizing the generation of wastes from construction through detailed estimating of materials needs and through efficient construction practices.

(c) Recycling steel and other metal scrap.

(d) Recycling wood waste.

(e) Recycling packaging wastes such as paper and cardboard.

(f) Collecting non-recyclable waste for transport to a landfill by a licensed waste hauler.

(g) Segregating all hazardous wastes such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous wastes.

99 The certificate holder may dispose of waste concrete on site with the permission of the landowner and in accordance with OAR 340-093-0080 and other applicable regulations. The certificate holder shall dispose of waste concrete on site by placing the material in an excavated hole, covering it with at least three feet of topsoil and grading the area to match existing contours. If the waste concrete is not disposed of on site, the certificate holder shall arrange for proper disposal in a landfill.

100 The certificate holder shall implement a waste management plan during operation that includes but is not limited to the following measures:

(a) Training employees to minimize and recycle solid waste.

(b) Recycling paper products, metals, glass and plastics.

(c) Recycling used oil and hydraulic fluid.

(d) Collecting non-recyclable waste for transport to a landfill by a licensed waste hauler.

(e) Segregating all hazardous, non-recyclable wastes such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous wastes.

VI. CONDITIONS ADDED BY AMENDMENT #1 FOR LJF

101 [Condition deleted by Amendment #2 (LJF)].

102 [Condition deleted by Amendment #2 (LJF)].

Internal Use

103 [Condition deleted by Amendment #2 (LJF)]

104 [Condition deleted by Amendment #2 (LJF)].

VII. CONDITIONS ADDED BY AMENDMENT #3 FOR LJIIA REPOWER

The general and specific conditions remain applicable to the repower activities described in the Final Order on Amendment 3 for LJIIA. In addition, the certificate holder shall comply with the following conditions for the repower activities as it was required to do for original facility construction activities.

a. Certificate Administration Conditions

105 Before beginning repower activities as described in the Final Order on Amendment on Amendment 3 for LJIIA, the certificate holder shall comply with Condition 30 for repower activities.

106 The certificate holder shall comply with Condition 32 for repower activities.

107 The certificate holder shall comply with Condition 34 for repower activities.

108 The certificate holder shall comply with Condition 36 for repower activities.

109 The certificate holder shall comply with Condition 37 for repower activities.

b. Land Use Conditions

112 The certificate holder shall cooperate with the Gilliam County Road Department to ensure that any unusual damage or wear to county roads that is caused by repower activities are repaired by the certificate holder. Upon completion of repower activities, the certificate holder shall restore county roads to pre-repower conditions or better, to the satisfaction of the County Road Department.

113 The certificate holder shall comply with Condition 37 for repower activities.

c. Cultural Resource Conditions

112 The certificate holder shall comply with Conditions 46 and 47 for repower activities.

d. Hazardous Materials, Fire Protection & Public Safety Conditions

113 The certificate holder shall comply with Condition 53 for repower activities.

114 Prior to the start of repower activities, the certificate holder shall update the fire safety plans developed in consultation with the North Gilliam County Rural Fire Protection District and the Arlington Fire Department in accordance with Condition 61.

115 The certificate holder shall comply with Conditions 63 and 66 for repower activities.

f. Water, Soils, Streams, & Wetland Conditions

116 The certificate holder shall comply with Conditions 70, 71, and 73 for repower activities.

117 The certificate holder shall restore areas outside the permanent footprint that are disturbed during repower activities according to the methods and monitoring procedures described in the Repower Revegetation and Noxious Weed Control Plan that is incorporated in the Final Order on Amendment 3 for LJIIA, as Attachment ___.

g. Plants, Wildlife & Habitat Protection Conditions

118 The certificate holder shall implement the Repower Revegetation and Noxious Weed Control Plan that is incorporated into the Final Order on Amendment 3 for LJIIA, as Attachment ___.

119 The certificate holder shall, to the extent practical, schedule vegetation clearing activities to occur before the critical period for ground-nesting birds (April 15-September 1) to avoid disturbing active nests. If vegetation clearing activities are necessary between April 15 to September 1, the certificate holder shall hire a qualified biologist to conduct a clearance survey for nesting birds prior to vegetation removal. The certificate holder shall ensure that active nest sites identified during the clearance survey are flagged and marked as sensitive on construction maps.

120 The certificate holder shall avoid temporary disturbance to Category 1 habitat and limit temporary impacts to previously disturbed footprints to the extent practical. Following the completion of the repower activities, the certificate holder shall restore temporarily disturbed areas consistent with Repower Revegetation Plan Update and implement the Repower Habitat Mitigation Plan Update.

121 The certificate holder shall comply with Condition 85 for repower activities. If offroad or off-hard surface activities are necessary, the certificate holder shall avoid grading or blading and implement additional preventative measures (e.g., erosion control mats) to minimize impacts to soil and vegetation.

122 The certificate holder shall implement protective measures during the repower activities to avoid and minimize impacts to WGSs, consistent with the Incidental Take, Permit issued ODFW and dated June 23, 2008.

123 The certificate holder shall comply with Condition 86 during repower activities with the exception the certificate holder shall survey within 0.25 miles of the of any area that would be disturbed during repower activities.

h. Noise Control Condition

124 The certificate holder shall comply with Condition 94 prior to the start of repower activities.

VIII. SUCCESSORS AND ASSIGNS

To transfer this site certificate or any portion thereof or to assign or dispose of it in any other manner, directly or indirectly, the certificate holder shall comply with OAR 345-027-0100.

IX~~VIII~~. SEVERABILITY AND CONSTRUCTION

If any provision of this agreement and certificate is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the agreement and certificate did not contain the particular provision held to be invalid.

IX. GOVERNING LAW AND FORUM

This site certificate shall be governed by the laws of the State of Oregon. Any litigation or arbitration arising out of this agreement shall be conducted in an appropriate forum in Oregon.

X. EXECUTION

This site certificate may be executed in counterparts and will become effective upon signature by the Chair of the Energy Facility Siting Council and the authorized representative of the certificate holder.

IN WITNESS WHEREOF, this site certificate has been executed by the State of Oregon, acting by and through its Energy Facility Siting Council, and by Leaning Juniper Wind Power II**,** LLC.

ENERGY FACILITY SITING COUNCIL

By: _____

W. Bryan Wolfe, Chair

Oregon Energy Facility Siting Council

Date: _____

LEANING JUNIPER WIND POWER II, LLC

By: _____

Print: _____

Date: _____

and

By: _____

Print: _____

Date: _____

Attachment 2
Articles of Organization

330078-99

ARTICLES OF ORGANIZATION

OF

LEANING JUNIPER WIND POWER II, LLC

an Oregon Limited Liability Company

FILED
DEC 22 2005
OREGON
SECRETARY OF STATE

ARTICLE I

The name of the limited liability company (the "Company") is Leaning Juniper Wind Power II, LLC.

ARTICLE II

The Company shall have perpetual existence.

ARTICLE III

The name of the initial registered agent is CT Corporation System and the address of the initial registered office is 388 State Street, Suite 420, Salem, Oregon 97301.

ARTICLE IV

The address where the Division may mail notices is c/o Office of General Counsel, 825 NE Multnomah, Suite 1900, Portland, Oregon 97232.

ARTICLE V

The Company shall be managed by one or more managers.

ARTICLE VI

The name and address of the organizer is Douglas A. Kusyk, 825 NE Multnomah, Suite 1900, Portland, Oregon 97232

ARTICLE VII

ORS 63.185(4) shall not apply in the event an additional or substitute member is admitted to the Company.

FILED: DEC 22, 2005
OREGON SECRETARY OF STATE

33007899-8298523

LEANING JUNIPER WIND POWER... NEWORG

12-22

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ARTICLE VIII

These Articles of Organization may be amended, restated or modified from time to time by members holding more than fifty percent (50%) of the votes held by members then entitled to vote, consent to or otherwise decide any matter submitted to the members, as determined pursuant to the operating agreement of the Company; provided that any amendment to these Articles of Organization that would or could have the effect of changing the number of managers or any person specified as a manager under the operating agreement of the Company, changing a required voting percentage for approval of any matter or a member's voting rights or altering the interest of one or more members in profits, losses, similar items or any Company distribution shall require the affirmative vote of all members then entitled to vote.

ARTICLE IX

To the fullest extent the Oregon Limited Liability Company Act, as it exists on the date hereof or may hereafter be amended, permits the limitation or elimination of liability of managers or members, a manager or member shall not be liable to the Company or the other members for monetary damages for conduct as a manager or member. Any amendment to or repeal of this Article IX shall not adversely affect any right or protection of a manager or member for or with respect to any acts or omissions of such manager or member occurring prior to such amendment or repeal.

ARTICLE X

The effective date of the Company's existence is the date of filing of these Articles of Organization by the Secretary of State.

DATED this 21st day of December, 2005.

Douglas A. Kusyk, Organizer

Attachment 3a
Operating Agreement

OPERATING AGREEMENT

OF

LEANING JUNIPER WIND POWER II, LLC

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OPERATING AGREEMENT
OF
LEANING JUNIPER WIND POWER II, LLC

This OPERATING AGREEMENT of LEANING JUNIPER WIND POWER II, LLC, an Oregon limited liability company (the **"Company"**), entered into by PPM Energy, Inc., an Oregon corporation and the initial Member of the Company (the **"Initial Member"**), and any other Members or successors to interests in the Company, is effective December 22, 2005 (this **"Agreement"**). Capitalized terms used in this Agreement shall have the meanings ascribed thereto in **Schedule A**.

ARTICLE 1
ORGANIZATION AND PURPOSES OF COMPANY

1.1 Organization.

The Company was created by the execution and filing of the Articles under the Act. The Initial Member agrees to conduct the Company's business and affairs consistent with this Agreement, the Act and the Articles. The Initial Member shall from time to time contribute such Property to the Company as is agreed upon by the Company and the Initial Member.

1.2 Purposes and Powers.

The Company shall have all powers provided for in the Act and may engage in any lawful business permitted by the Act or the laws of any jurisdiction in which the Company may do business.

1.3 No Personal Liability.

The Company is an Oregon limited liability company and not a general or limited partnership. No Member shall have personal liability for any Company operations, debts, obligations or liability merely as a result of being a Member.

ARTICLE 2
MANAGEMENT

2.1 Management by Manager.

Pursuant to the Articles, the Company is manager-managed. The Company shall have one Manager, who may but need not be a Member, may be a natural person or an Entity and need not be a resident of Oregon. The Manager shall initially be PPM Energy, Inc.

2.2 Authority.

The Manager shall have full and complete authority, power and discretion to manage and control the business, affairs and properties of the Company, to make all decisions regarding those matters listed below in this Section 2.2 or that this Agreement or the Act does not make

expressly subject to approval by the Members, and to perform any and all other acts or activities necessary, customary, desirable or incident to the management of the Company's business. Notwithstanding any provision of the Act to the contrary, the Manager shall have authority to take the following actions on behalf of the Company without any consent of the Members:

(a) To cause the Company to borrow money for any purpose of the Company from financial institutions, the Manager, a Member, or any affiliate of the Manager or a Member on such terms and conditions as are commercially reasonable in the judgment of the Manager;

(b) In connection with any borrowing by the Company, to hypothecate, encumber and grant security interests in any or all of the Company Property to secure repayment of the borrowed sums;

(c) To acquire, improve, manage, charter, operate, lease, sell, transfer, exchange, encumber, pledge or dispose of any or all Company Property (whether in any such case in a single transaction of all or substantially all of the Company Property or in individual transactions), including without limitation in a transaction on terms and conditions that are commercially reasonable in the judgment of the Manager between the Company and either the Manager or a Member;

(d) To cause the Company to merge or otherwise combine with any other entity on terms and conditions that are commercially reasonable in the judgment of the Manager; and

(e) To execute instruments and documents, including without limitation checks, drafts, notes and other negotiable instruments, leases, mortgages or deeds of trust, security agreements, financing statements, deeds, assignments, bills of sale and other documents providing for the acquisition, mortgage or disposition of Company Property, partnership agreements, operating agreements of other limited liability companies, power purchase or sale agreements and any other instruments or documents necessary, in the opinion of the Manager, to the business of the Company.

Unless authorized to do so by this Agreement or by the Manager, no Member, employee or other agent of the Company shall have any power or authority to bind the Company in any way, to pledge its credit or to render it liable for any purpose.

2.3 Limitation of Liability.

The Manager shall not be personally liable for any debt, obligation or liability of the Company merely by reason of being the Manager.

2.4 Discharge of Management Duties.

The Manager shall discharge the duties of manager in good faith, with the care an ordinarily prudent person in a like position would exercise under similar circumstances and in a manner the Manager reasonably believes to be in the best interests of the Company. The

Manager shall devote to the Company and apply to the accomplishment of Company purposes so much of time and attention as in the judgment of the Manager is reasonably necessary to manage and operate properly and prudently the affairs of the Company. The Manager may delegate the oversight and management of the day-to-day operations of the Company to such designees as the Manager may determine from time to time and may cause any such designee to be an officer of the Company with such powers and authority as the Manager may from time to time prescribe in writing.

2.5 Compensation and Reimbursement.

During the term of this Agreement, the Manager may receive a management fee in such amount as is determined from time to time by the Manager. The Manager shall also be reimbursed on a monthly basis, or such other basis as the Manager may determine, for all out-of-pocket expenses the Manager incurs on behalf of the Company and for other expenses incurred by the Manager (such as rent and other office expenses, travel expenses, compensation expenses of employees and agents, accounting and legal fees, and general overhead) to the extent that such expenses are, in the reasonable judgment of the Manager, allocable to the Company.

2.6 Indemnification.

To the fullest extent provided or allowed by the laws of Oregon, the Company shall indemnify the organizer, the Manager, each officer of the Company performing the duties of the Manager pursuant to Section 2.4 and each Member from and against all costs, losses, liabilities, damages, claims and expenses (including without limitation attorneys' fees and costs as incurred on trial and on appeal) incurred in the capacity of organizer, manager, officer or member or in any other capacity on behalf of the Company, including without limitation claims arising from any such Person's actions or inactions taken or omitted as organizer or a manager, officer or member or in any other capacity in furtherance of the business or affairs of the Company, whether taken prior to or subsequent to the formation of the Company; provided that the foregoing shall not eliminate or limit any such Person's liability for:

(a) Any breach of the duty of loyalty to the Company or the Members as described in this Agreement;

(b) Acts or omissions not in good faith which involve intentional misconduct or a knowing violation of law;

(c) Any unlawful distribution under the Act; or

(d) Any transaction not expressly approved or ratified by a Majority of the Members or permitted under this Agreement from which the Manager derives an improper personal benefit.

2.7 Signature Authority.

The signature of the Manager or of any officer of the Company then serving pursuant to Section 2.4 and authorized by the Manager shall be necessary and sufficient to bind the Company, and a copy of this Agreement may be shown to the appropriate parties in order to confirm the same.

ARTICLE 3
RIGHTS OF MEMBERS

3.1 Voting Rights.

All Members (other than a Member that, pursuant to Section 6.4(b), has ceased to be entitled to vote) shall be entitled to vote on or consent to any matter submitted to a vote of, or requiring consent from, the Members. A Member entitled to vote may exercise by vote or consent that number of votes determined by multiplying the decimal equivalent of the Percentage Interest of the Member by 100.

3.2 Economic Rights.

The Members shall share in profits, losses or any other items allocable to any period and in distributions of Company Property in accordance with Percentage Interests. Notwithstanding the foregoing, however, distributions following any dissolution of the Company shall be made in accordance with Section 7.2.

3.3 Approval of Members.

Any action or transaction that requires the approval of the Members under this Agreement shall be authorized upon the affirmative vote, implementing action or written consent of a Majority of the Members unless either this Agreement or the Articles expressly imposes a higher standard for approval by the Members, in which case the specified approval of the Members shall be required for such action or transaction. Any Member (including the Manager) that has an interest in the outcome of a matter submitted to the Members for a vote may vote and have such vote as a Member counted upon such matter.

3.4 Meetings; Other Action by Members.

Any Member or Manager may call a meeting of the Members, and the meeting shall be held in the principal executive office of the Company or at such other place and at such time as is specified in the notice of such meeting given by such Member or Manager. Members may participate in or conduct meetings through telephonic or other means of communication by which all authorized representatives (or proxy holders) of the Members participating may simultaneously communicate with each other. Members may take any action without a meeting, either by written consent describing the action taken or by implementing action (including but not limited to execution of documents), effective as of the date of signature by the necessary Members or such other date as is set forth therein. Any such consent or evidence of

implementing action shall be maintained in the Company records. The attendance of a Member at a meeting shall constitute a waiver of objection to lack of notice or defective notice of the meeting, unless the Member objects at the beginning of the meeting to holding the meeting or transacting business at the meeting. A waiver of notice by a Member, given either before or after a meeting, shall be equivalent to the giving of notice of the meeting to such Member. There shall be no quorum requirement for any meeting of Members but any action that requires a vote of Members shall be approved at a meeting only upon receiving the vote of a Majority of the Members or such other vote as is required under this Agreement. Action not within the purposes described in a meeting notice may be taken at the meeting provided that such action is approved at the meeting by a Majority of the Members or such other vote as is required under this Agreement.

3.5 Withdrawal.

Notwithstanding any provision of the Act to the contrary, no Member has the power to withdraw voluntarily from the Company. A Member that purports to withdraw voluntarily from the Company prior to any dissolution of the Company shall be in breach of this Agreement, shall be liable to the Company for any damages arising directly or indirectly from such purported withdrawal, shall cease to be a Member but shall continue to hold Economic Rights in the Company as an Assignee and shall not be entitled to any distribution from the Company by reason of such withdrawal.

ARTICLE 4
CONFLICTS OF INTEREST

4.1 Duty of Loyalty.

The Manager and each Member may engage in other business activities and may pursue business opportunities competitive with the business and operations of the Company without presenting any such opportunity to the Company or the Members, and the Company, the Manager and each Member hereby waives any right or claim to participate therein. Notwithstanding the foregoing, however, unless otherwise expressly approved or ratified by a Majority of the Members or otherwise permitted under this Agreement, the Manager and each Member shall account to the Company and hold as trustee for the Company any benefit or any profits derived by such Member or Manager from any transaction connected with the formation, conduct or winding up of the Company or from any use of Company Property by such Member or Manager, including without limitation any information developed for the Company or any opportunity expressly offered to the Company.

4.2 Loans and Other Transactions with Company.

The Company may borrow money or transact other business with the Manager or a Member on terms that are commercially reasonable determined by the Manager in its reasonable discretion. The rights and obligations of a Member or Manager that lends money to or transacts business with the Company shall be the same as those of a Person that is not a Member or Manager, subject to other applicable law. No transaction with the Company shall

be voidable solely because a Member or a Manager has a direct or indirect interest in the transaction if the transaction is expressly permitted by this Agreement or is approved or ratified as provided in this Agreement or in the Act.

ARTICLE 5
ADDITIONAL MEMBERS

One or more Additional Members may be admitted only if the Manager and all of the Members consent to any such admission, which consent may be given or arbitrarily withheld in the sole and absolute discretion of the Manager and each Member. Any Additional Member shall make such contribution to the Company in cash or other Property as is agreed upon in writing by the Manager, the Members and the Additional Member, which writing shall specify the value of the Additional Member's contribution, the time for making such contribution, the respective Percentage Interest of each Member following such contribution and, if the admission of the Additional Member will cause there to be more than two "Members" for tax purposes, the partnership tax provisions governing the Company effective upon the admission of the Additional Member (unless such provisions have been adopted in connection with any earlier admission of an Additional Member or Substitute Member). Notwithstanding the foregoing, a Person shall not become an Additional Member unless and until such Person becomes a party to this Agreement as a Member by signing a counterpart signature page to this Agreement and executing such documents and instruments as the Manager reasonably may request to confirm such Person as a Member in the Company and such Person's agreement to be bound by the terms and conditions of this Agreement.

ARTICLE 6
TRANSFERS OF INTERESTS

6.1 Restriction on Transfers.

Except as otherwise permitted by Section 6.2, no Member or Assignee shall Transfer all or any portion of such Person's interest in the Company. Any purported Transfer not permitted under Section 6.2 shall be null and void and of no force or effect whatsoever.

6.2 Permitted Transfers.

Subject to the conditions and restrictions set forth in Sections 6.3 and 6.4, a Member or Assignee may at any time Transfer all or any portion of such Person's interest in the Company:

(a) To any other Member;

(b) In the case of the Initial Member, or any successor to any or all of the interest of the Initial Member in the Company, to any transferee acceptable to the Initial Member or such successor in the sole and arbitrary discretion of such Member or successor, whichever is the Assignor;

(c) In any involuntary Transfer by operation of law; or

(d) To any transferee upon the consent of the Manager and a Majority of the Members, taking into account, in the case of the latter, only the non-Transferring Members.

Notwithstanding any provision of this Section 6.2 apparently to the contrary, any permitted Assignee under this Section 6.2 shall be admitted as a Substitute Member only in accordance with Section 6.5 except that (i) an Assignee described in Section 6.2(a), 6.2(b) or 6.2(c) shall be automatically admitted as a Substitute Member with respect to the interest acquired without any action pursuant to Section 6.5, unless otherwise expressly provided in connection with such Transfer, and (ii) an Assignee in a Transfer described in Section 6.2(d) that is approved by a vote sufficient under both of Sections 6.2(d) and 6.5(a) shall, unless otherwise expressly provided in connection with such vote, be automatically admitted as a Substitute Member without a separate vote pursuant to Section 6.5(a).

6.3 Conditions to Permitted Transfers.

A Transfer shall not be permitted under Section 6.2 unless and until each of the following conditions are satisfied:

(a) The Assignor and Assignee have executed and delivered to the Company such documents and instruments of conveyance as may be necessary or appropriate in the opinion of counsel to the Company to effect such Transfer and to confirm the agreement of the Assignee to be bound by the provisions of this Agreement and, if the Transfer will cause there to be more than two "Members" for tax purposes, all of the Members have agreed in writing on the partnership tax provisions governing the Company effective upon the admission of the Substitute Member (unless such provisions have been adopted in connection with any earlier admission of an Additional Member or Substitute Member).

(b) The Assignor and/or Assignee have reimbursed the Company for all costs and expenses that the Company reasonably incurs in connection with the Transfer.

(c) The Assignor and Assignee have provided to the Company the Assignee's taxpayer identification number, sufficient information to determine the Assignee's initial tax basis in the interest Transferred and any other information reasonably necessary to permit the Company to file all required federal and state tax returns and other legally required information statements or returns. Without limiting the generality of the foregoing, the Company shall not be required to make any distribution otherwise provided for in this Agreement with respect to any interest Transferred until it has received such information.

6.4 Rights and Obligations of Assignees and Assignors.

(a) A Transfer by any Member or other Person shall not itself dissolve the Company or, except as otherwise provided in this Agreement, entitle the Assignee to become a Member or exercise any rights of a Member, including without limitation any Management Rights.

(b) A Transfer by any Member, including without limitation any involuntary Transfer, shall eliminate the Transferring Member's power and right to vote (in proportion to the extent of the interest Transferred) on any matter submitted to the Members, and, for voting purposes, such interest shall not be counted as outstanding in proportion to the extent of the interest Transferred. The Transfer shall also eliminate the Member's entitlement to any Management Rights associated with the Transferred interest, including without limitation rights to information, but shall not cause the Member to be released from any liability to the Company solely as a result of the Transfer.

(c) An Assignee not admitted as a Substitute Member shall be entitled only to the Economic Rights with respect to the interest Transferred and shall have no Management Rights (including without limitation rights to any information or accounting of the affairs of the Company or to inspect the books or records of the Company) with respect to the interest Transferred. If an Assignee becomes a Substitute Member, the voting rights associated with the interest Transferred shall be restored and be held by the Substitute Member along with all other Management Rights with respect to the interest Transferred. The Assignee shall have no liability as a Member solely as a result of the Transfer.

(d) If a court of competent jurisdiction charges an interest in the Company with the payment of an unsatisfied amount of a judgment, to the extent so charged the judgment creditor shall be treated as an Assignee.

6.5 Admission of Assignee as Substitute Member.

Subject to any other applicable provisions of this Article 6, an Assignee may be admitted to the Company as a Substitute Member, with all of the Management Rights of a Member, but only upon satisfaction of all of the following conditions:

(a) The Manager and a Majority of the non-Transferring Members consent to such admission, which consent may be given or arbitrarily withheld in the sole and absolute discretion of the Manager and each such Member;

(b) The Assignee becomes a party to this Agreement as a Member by executing a counterpart signature page to this Agreement and executing such documents and instruments as the Manager may reasonably request as necessary or appropriate to confirm such Assignee as a Member in the Company and such Assignee's agreement to be bound by the terms and conditions of this Agreement;

(c) The Assignee pays or reimburses the Company for all reasonable legal, filing and publication costs that the Company incurs in connection with the admission of the Assignee as a Member with respect to the interest Transferred; and

(d) If the Assignee is not a natural person of legal majority, the Assignee provides the Company with evidence reasonably satisfactory to counsel for the Company of the authority of the Assignee to become a Member and to be bound by the terms and conditions of this Agreement.

6.6 Effect of Admission of Substitute Member.

A Substitute Member shall have, to the extent of the interest Transferred, the rights and powers, and be subject to the restrictions and liabilities, of a Member and shall be liable for any obligations of the Assignor to make contributions but shall not be obligated for liabilities unknown to the Substitute Member at the time of becoming a Member.

ARTICLE 7
DISSOLUTION AND WINDING UP

7.1 Dissolution Events.

Pursuant to the Articles, the duration of the Company is perpetual. However, the Company shall nevertheless dissolve and commence winding up and liquidating upon the first to occur of any of the following (each, a **"Dissolution Event"**):

(a) The sale of all or substantially all of the Company Property other than in the ordinary course of business, as determined by the Manager in the Manager's sole discretion; or

(b) The vote of the Manager and a Majority of the Members to dissolve, wind up and liquidate the Company.

Notwithstanding anything in the Act to the contrary, to the maximum extent permitted by law, the Dissolution Events are the exclusive events that may cause the Company to dissolve, and the Company shall not dissolve prior to the occurrence of a Dissolution Event notwithstanding the occurrence of any event specified in the Act or any other event that might otherwise cause a dissolution.

7.2 Winding Up.

Upon the occurrence of a Dissolution Event, the Company shall continue solely for the purposes of winding up its affairs in an orderly manner, satisfying the claims of its creditors and Members and liquidating or distributing its assets to the extent necessary therefor. Neither the Manager nor any Member shall take any action that is inconsistent with, or not necessary to or appropriate for, the orderly winding up of the Company's business and affairs. The Manager (or, if there is none then serving, a Majority of the Members, acting as Manager) shall oversee the winding up and dissolution of the Company, provide a full accounting of the Company's liabilities and Property, cause the Company Property to be distributed in kind or to be liquidated as promptly as is consistent with obtaining the fair value thereof and shall cause any net proceeds therefrom and any remaining Property to be applied and distributed in the following order:

(a) First, to the payment and discharge of all of the Company's debts and liabilities to creditors, including to any Member to the extent permitted under the Act;

(b) Second, to the payment and discharge of any remaining debts or liabilities of the Company to any Member; and

(c) Third, to the sole Member, or, if there is more than one Member, to the Members in accordance with positive capital account balances after giving effect to all contributions, distributions and allocations for all periods.

The Manager or a Member that performs more than *de minimis* services in completing the winding up and termination of the Company pursuant to this Article 7 shall be entitled to receive reasonable compensation for the services performed.

7.3 Establishment of Trust or Reserves.

In the reasonable discretion of the Manager a pro rata portion of the distributions that would otherwise be made to the Members pursuant to this Article 7 may be:

(a) Distributed to a trust established for the benefit of the Members for the purposes of liquidating Company assets, collecting amounts owed to the Company and paying any contingent or unforeseen liabilities or obligations of the Company. The assets of any such trust shall be distributed to the Members from time to time, in the reasonable discretion of the Manager in the same proportions as the amount distributed to such trust by the Company would otherwise have been distributed to the Members pursuant to Section 7.2; or

(b) Withheld to provide a reasonable reserve for Company liabilities (contingent or otherwise) and to reflect the unrealized portion of any installment obligations owed to the Company; provided that such withheld amounts shall be distributed to the Members as soon as practicable.

7.4 Notices of Dissolution Event, Etc.

If any Dissolution Event occurs, the Manager shall, within thirty (30) days thereafter, provide notice thereof to each Member and take such other actions as the Manager determines to be necessary or appropriate.

ARTICLE 8
BOOKS, RECORDS AND ACCOUNTINGS

8.1 Books and Records.

At the expense of the Company, the Manager shall maintain records and accounts of all operations and expenditures of the Company. At a minimum the Company shall keep at its principal place of business the following records:

(a) A current list of the full name and last known business, residence or mailing address of each Member and Manager, both past and present;

(b) A copy of the Articles and all amendments thereto, together with executed copies of any powers of attorney pursuant to which any amendment has been executed;

(c) Copies of the Company's federal, state and local income tax returns and reports, if any, for the three (3) most recent years;

(d) Copies of the Company's currently effective written Operating Agreement and all amendments thereto, copies of any writings permitted or required under the Act and copies of any financial statements of the Company for the three (3) most recent years;

(e) Minutes of every meeting of the Members and any consents obtained from Members for actions taken without a meeting; and

(f) To the extent not contained in this Agreement, a statement prepared and certified as accurate by the Manager that describes (i) the amount of cash and a description and statement of the agreed value of other Property or consideration contributed by each Member or that each Member has agreed to contribute in the future, (ii) the times at which or events on the occurrence of which any additional contributions agreed to be made by each Member, if any, are to be made and (iii) if agreed upon, the time at which or the events upon which the Company is to be dissolved and its affairs wound up.

8.2 Reports.

Within ninety (90) days after the end of each fiscal year of the Company, the Company shall furnish to each Member an annual report consisting of at least the following to the extent applicable:

(a) A copy of the Company's federal income tax return for that fiscal year, if any;

(b) Profit and loss statements;

(c) A balance sheet showing the Company's financial position as of the end of that fiscal year; and

(d) Any additional information that the Members may require for the preparation of their individual federal and state income tax returns.

In addition, if the Company indemnifies or advances expenses to a Manager or Member in connection with a proceeding by or in the right of the Company, the Company shall report the indemnification or advance in writing to the Members.

8.3 Rights of Members; Inspection.

Each Member shall have the right to receive the reports and information required to be provided by the Act, the Articles or this Agreement. Upon reasonable request, each Member,

and any authorized representative of any Member, shall have the right, during ordinary business hours, to inspect and copy, at the requesting Member's expense, the books and records that the Company is required to maintain and keep by the Act, the Articles or this Agreement.

ARTICLE 9
AMENDMENT

This Agreement and the Articles may be amended, restated or modified from time to time by a Majority of the Members then entitled to vote, consent to or otherwise decide any matter submitted to the Members, as determined pursuant to this Agreement; provided that any amendment that would change the number of managers of the Company or any Person specified as the Manager under Section 2.1, change a required voting percentage for approval of any matter or a Member's voting rights or alter the interest of one or more Members in profits, losses, similar items or any Company distribution shall require the affirmative vote of all Members then entitled to vote. Subject to the foregoing, neither the Manager nor any Member shall have any vested rights under this Agreement that can not be modified from time to time through an amendment to this Agreement.

ARTICLE 10
MISCELLANEOUS

10.1 Application of Oregon Law.

This Agreement, and the application or interpretation hereof, shall be governed exclusively by its terms and by the laws of Oregon, and specifically the Act, without regard to choice of law rules.

10.2 Construction.

Whenever required by the context in this Agreement, the singular number shall include the plural and vice versa, and any gender shall include the masculine, feminine and neuter genders. The term "Member" when used in any provision relating to capital accounts or any other tax or financial matter shall be deemed to include any Person having Economic Rights under this Agreement.

10.3 Counterparts; Facsimiles.

This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which shall constitute one and the same instrument. Facsimile signatures of the parties on this Agreement or any amendment of this Agreement shall be deemed original signatures, and each Member or other party shall forward the original signed version of such document promptly following facsimile transmission.

10.4 Waiver of Partition.

Each Member specifically waives any direct or indirect right of partition such Member may have or may hereafter acquire that would enable such Member to cause any Company Property to be the subject of a suit for partition.

10.5 Execution of Additional Instruments.

Each Member hereby agrees to execute such other and further statements of interest and holdings, designations, powers of attorney and other instruments necessary to effectuate the purposes of this Agreement or comply with any laws, rules or regulations applicable to the Company.

10.6 Headings.

The headings in this Agreement are inserted for convenience only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this Agreement or any provision hereof.

10.7 Heirs, Successors and Assigns.

Each and all of the covenants, terms, provisions and agreements contained in this Agreement shall be binding upon and inure to the benefit of the parties and, to the extent permitted by this Agreement, their respective heirs, legal representatives and permitted successors and assigns.

10.8 Notices and Consents, Etc.

Any notice, demand or communication required or permitted to be given by any provision of this Agreement shall be in writing and shall be deemed to have been sufficiently given or served for all purposes if delivered personally to the party or to an executive officer of the party to which the same is directed or, if sent by registered or certified mail, postage and charges prepaid, addressed to the Manager's, Member's or Company's address, as shown in the records of the Company. Except as otherwise provided herein, any such notice shall be deemed to be given five (5) Business Days after the date on which the same was deposited in the United States mails.

10.9 Severability.

If any provision of this Agreement or the application thereof to any person or circumstance shall be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application thereof shall not be affected and shall be enforceable to the fullest extent permitted by law.

10.10 Waivers.

The failure of any party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Agreement shall not prevent a subsequent act, which would have originally constituted a violation, from having the effect of an original violation.

10.11 Entire Agreement.

The Articles, this Agreement and any other document to be furnished pursuant to the provisions hereof embody the entire agreement and understanding of the parties as to the subject matter contained herein. There are no restrictions, promises, representations, warranties, covenants or undertakings other than those expressly set forth or referred to in such documents. This Agreement and such documents supersede all prior agreements and understandings with respect to the subject matter hereof.

IN WITNESS WHEREOF, the Initial Member has executed this Agreement effective as of the date first set forth above.

Initial Member:

PPM ENERGY, INC.

By:_____
Peter C. van Alderwerelt
Senior Vice President

Acknowledged and Appointment Accepted:

Manager:

PPM ENERGY, INC.

By:_____
Peter C. van Alderwerelt
Senior Vice President

Schedule A

TABLE OF DEFINITIONS

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DEFINITIONS

The following terms used in the foregoing Operating Agreement shall have the following meanings (unless otherwise expressly provided therein):

"Act" shall mean the Oregon Limited Liability Company Act, as amended.

"Additional Member" shall mean a Member, other than a Substitute Member, that has acquired both Economic Rights and Management Rights from the Company after the date of this Agreement.

"Agreement" shall mean this Operating Agreement, as amended from time to time.

"Articles" shall mean the Articles of Organization of the Company previously filed with the Secretary of State of Oregon, as amended or restated from time to time.

"Assignee" shall mean an Owner of Economic Rights that has not been admitted as a Substitute Member, including an owner of Economic Rights pursuant to a Transfer permitted under Article 6.

"Assignor" shall mean a Person that either voluntarily or involuntarily Transfers an interest in the Company.

"Business Day" shall mean any day other than Saturday, Sunday or any legal holiday on which banks in Portland, Oregon are closed.

"Company" shall mean the Oregon limited liability company governed by this Agreement.

"Company Property" shall mean any Property owned by the Company.

"Dissolution Event" shall mean any of the events described in Section 7.1 as causing a dissolution of the Company.

"Economic Rights" shall mean a Member's share of the profits, losses or any other items allocable to any period and distributions of Company Property pursuant to the Act, the Articles and this Agreement but shall not include any Management Rights.

"Entity" shall mean any general partnership, limited partnership, limited liability company, corporation, joint venture, trust, business trust, cooperative or other association or entity, including without limitation any foreign trust or foreign business organization.

"Initial Member" shall have the meaning set forth in the first paragraph of this Agreement.

"Majority of the Members" shall mean, at any time, the Member or Members (including any proxy holder acting on behalf of a Member) holding more than 50 percent of the

votes held by Members then entitled to vote, consent to or otherwise decide any matter submitted to the Members.

"Management Rights" shall mean the right of a Member to participate in the management of the Company, including rights to information and to consent or approve actions of the Members.

"Manager" shall mean the Manager provided for in Section 2.1.

"Member" shall mean each Member named herein and any Person that may hereafter become an Additional or Substitute Member, but only for so long as such Member is a Member under the terms of this Agreement.

"Percentage Interest" shall mean the percentage interest for each Member set forth below unless and until adjusted by agreement of all of the Members then entitled to vote or, in respect of any Member, reduced or increased by reason of any Transfer permitted under this Agreement:

Member	Percentage Interest
PPM Energy, Inc.	100%

"Person" shall mean any natural person or Entity, and the heirs, executors, administrators, legal representatives, successors and assigns of each such Person where the context so permits.

"Property" shall mean any property, real or personal, tangible or intangible, including cash and any legal or equitable interest in such property.

"Substitute Member" shall mean an owner of Economic Rights admitted to all rights of membership in the Company and thereby the holder of Management Rights of a Member.

"Transfer" shall mean with respect to any interest in the Company, as a noun, any voluntary or involuntary assignment, sale or other transfer or disposition of such interest (but shall not include a pledge, or the granting of a security interest, lien or other encumbrance in or against, any interest in the Company) and, as a verb, voluntarily or involuntarily to assign, sell or otherwise transfer or dispose of such interest.

Attachment 3b
Name Change Evidence

State of Oregon

OFFICE OF THE SECRETARY OF STATE
Corporation Division

Certified Copy 549P373P4

I, SHEMIA FAGAN, Secretary of State of Oregon, and Custodian of the Seal of said State, do hereby certify:

That the attached

Document File

for

AVANGRID RENEWABLES, LLC

is a true copy of the original document(s).

In Testimony Whereof, I have hereunto set my hand and affixed hereto the Seal of the State of Oregon.

SHEMIA FAGAN, SECRETARY OF STATE

10/13/2021

#748526-89

FILED

MAR 15 1995

SECRETARY OF STATE

ARTICLES OF INCORPORATION

OF

PACIFICORP POWER MARKETING, INC.

The undersigned, being over the age of 18 years, hereby adopts these Articles of Incorporation in accordance with the provisions of the Oregon Business Corporation Act (the "Act").

ARTICLE I
Corporate Name

The name of the corporation is PacifiCorp Power Marketing, Inc.

ARTICLE II
Corporate Purpose

The purposes of this corporation are to engage in any lawful activities for which corporations may be organized under the Act as from time to time constituted.

ARTICLE III
Registered Agent

The initial registered agent of this corporation for service of process is Sally A. Nofziger, whose street address is 700 NE Multnomah, Suite 1600, Portland, Oregon 97232-1000, which address is the initial registered office of this corporation.

ARTICLE IV
Mailing Address

The mailing address of this corporation to which the Corporate Division may mail notices until the principal office of the corporation has been designated in an annual report is PacifiCorp Power Marketing, Inc., 700 NE Multnomah, Suite 1600, Portland, Oregon 97232, Attention: Secretary.

ARTICLE V
Incorporator

The name and address of the incorporator executing these Articles of Incorporation is Sanjiv N. Kripalani, whose address is 900 SW Fifth Avenue, Suite 2300, Portland, Oregon 97204-1268.

PDX1-171104.1 20014 0018

IBERDROLA RENEWABLES, LLC

44852689-1606344 NEW

03/15

VOID IF ALTERED OR ERASED
VOID IF ALTERED OR ERASED
VOID WITHOUT WATERMARK OR IF ALTERED OR ERASED

#4852689

ARTICLE VI
Shares

(a) The total number of shares of stock which the corporation shall have authority to issue is 1,000 shares of common stock.

(b) Each share of the common stock of this corporation, after the consideration therefore as fixed by the Board of Directors has been fully paid in, shall be non-assessable and shall not be subject to assessment to pay the debts of the corporation.

(c) Subject to statutory or other limitations on shareholder distributions that may be applicable at the time of acquisition, the corporation is authorized to acquire its own shares. Shares so acquired shall constitute authorized but unissued shares. The corporation is authorized to reissue from time to time shares that it acquires.

ARTICLE VII
Indemnification

(a) The corporation shall indemnify to the fullest extent then permitted by law any person who is made, or threatened to be made, a party to any threatened, pending, or completed action, suit, or proceeding, whether civil, criminal, administrative, investigative, or otherwise (including an action, suit, or proceeding by or in the right of the corporation) by reason of the fact that the person is or was a director or officer of the corporation or is or was serving at the request of the corporation as a director or officer of another corporation, partnership, joint venture, trust, or other enterprise against all expenses (including attorneys' fees), judgments, amounts paid in settlement, and fines actually and reasonably incurred in connection therewith.

(b) Expenses incurred in connection with an action, suit, or proceeding may be paid or reimbursed by the corporation in advance of final disposition of such action, suit, or proceeding upon receipt of an undertaking by or on behalf of the director or officer to repay such amounts if it shall ultimately be determined that such person is not entitled to be indemnified by the corporation.

(c) The indemnification provided hereby shall not be deemed exclusive of any other rights to which those indemnified may be entitled under any statute, bylaw, agreement, vote of shareholders or directors, or otherwise, both as to action in any official capacity and as to action in another capacity while holding an office, and shall continue as to a person who has ceased to be a director or officer and shall inure to the benefit of the heirs, executors, and administrators of such person.

VOID IF ALTERED OR ERASED
VOID IF ALTERED OR ERASED
VOID WITHOUT WATERMARK OR IF ALTERED OR ERASED

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(d) The corporation shall have power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee, or agent of the corporation, or fiduciary with respect to any employee benefit plans of the corporation, or is or was serving at the request of the corporation as a director, officer, employee, or agent, or as a fiduciary of an employee benefit plan, of another corporation, partnership, joint venture, trust, or other enterprise, against any liability asserted against and incurred by the person in any such capacity, or arising out of the person's status as such, whether or not the corporation would have the power to indemnify the person against such liability under the provisions of this Article or the Act.

(e) Any person other than a director or officer who is or was an employee or agent of the corporation, or fiduciary within the meaning of the Employee Retirement Income Security Act of 1974 with respect to any employee benefit plans of the corporation, or it or was serving at the request of the corporation as an employee or agent of another corporation, partnership, joint venture, trust, or other enterprise, may be indemnified to such extent as the board of directors in its discretion at any time or from time to time may authorize.

ARTICLE VIII
Director's Liability

No director of the corporation shall be personally liable to the corporation or its shareholders for monetary damages for conduct as a director; provided that this Article shall not eliminate the liability of a director for any act or omission for which such elimination of liability is not permitted under the Act. No amendment to the Act which further limits the acts or omissions for which elimination of liability is permitted shall affect the liability of a director for any act or omission which occurs prior to the effective date of such amendment.

To evidence the adoption of these Articles of Incorporation, I have signed them on March 15, 1995.

Sanjiv Kripalani
Sanjiv N. Kripalani, Incorporator

SECRETARY OF STATE CORPORATION DIVISION STATE OF OREGON

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01/06/03 3:35PM 000#9265 ASO
BUSINESS REG $20.00

448526-89

ARTICLES OF AMENDMENT
to the
ARTICLES OF INCORPORATION
of
PACIFICORP POWER MARKETING, INC.

FILED
JAN 0 6 2003
OREGON
SECRETARY OF STATE

In accordance with ORS §60.437 and §60.447, PacifiCorp Power Marketing, Inc., a corporation organized and existing under the laws of the State of Oregon, does hereby certify as follows:

1. The Board of Directors of the Company, at a meeting held November 21, 2002, proposed and declared advisable the following amendment to the Company's Articles of Incorporation:

RESOLVED, that Article I of the Company's Articles of Incorporation shall be amended to read, in its entirety, as follows:

"ARTICLE I
Corporate Name

The name of the corporation is **PPM Energy, Inc.**"

2. The foregoing amendment was duly approved on November 21, 2002 by written consent of the Company's sole shareholder in accordance with ORS § 60.437. The sole shareholder of the Company holds all 100 shares of the Company's outstanding capital stock.

3. These Articles of Amendment shall be effective at 12:01 a.m. on January 15, 2003.

PACIFICORP POWER MARKETING, INC.

By: _____
I. Merrick Kerr
Chief Financial Officer

ATTEST:

By: _____
Jeffery B. Erb, Assistant Corporate Secretary

9F1-6

S:\LegalDept\Minutes\PPM\PPM ARTICLES OF AMEND.doc

IBERDROLA RENEWABLES, LLC

44852689-6213274 AMDART

SECRETARY OF STATE
STATE OF OREGON
CORPORATION DIVISION
VOID IF ALTERED OR ERASED
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VOID WITHOUT WATERMARK OR IF ALTERED OR ERASED

VOID IF ALTERED OR ERASED

APR 15 2008 3:56PM 000001#1699 000
BUSINESS REG $50.00

Phone: (503) 986-2200
Fax: (503) 378-4381

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilingInOregon.com

Articles of Amendment—Business/Professional/Nonprofit

Check the appropriate box below:

☒ BUSINESS/PROFESSIONAL CORPORATION
(Complete only 1, 2, 3, 4, 5, 7)

☐ NONPROFIT CORPORATION
(Complete only 1, 2, 3, 5, 6, 7)

FILED

APR 15 2008

OREGON
SECRETARY OF STATE

REGISTRY NUMBER: 448526-89

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in Black Ink.

1) ENTITY NAME: PPM Energy, Inc.

2) STATE THE ARTICLE NUMBER(S) AND SET FORTH THE ARTICLE(S) AS IT IS AMENDED TO READ. (Attach a separate sheet if necessary.)

ARTICLE I

The name of the Corporation is IBERDROLA RENEWABLES, Inc.

3) THE AMENDMENT WAS ADOPTED ON: March 10th, 2008

(If more than one amendment was adopted, identify the date of adoption of each amendment.)

BUSINESS/PROFESSIONAL CORPORATION ONLY

4) CHECK THE APPROPRIATE STATEMENT

☑ Shareholder action was required to adopt the amendment(s). The vote was as follows:

Class or series of shares	Number of shares outstanding	Number of votes entitled to be cast	Number of votes cast FOR	Number of votes cast AGAINST
Common	100	100	100	-0-

☐ Shareholder action was not required to adopt the amendment(s). The amendment(s) was adopted by the board of directors without shareholder action.

☐ The corporation has not issued any shares of stock. Shareholder action was not required to adopt the amendment(s). The amendment(s) was adopted by the incorporators or by the board of directors.

NONPROFIT CORPORATION ONLY

5) CHECK THE APPROPRIATE STATEMENT

☐ Membership approval was not required. The amendment(s) was approved by a sufficient vote of the board of directors or incorporators.

☐ Membership approval was required. The membership vote was as follows:

Class(es) entitled to vote	Number of members entitled to vote	Number of votes entitled to be cast	Number of votes cast FOR	Number of votes cast AGAINST

6) EXECUTION

Signature: W. Benjamin Lackey — Printed Name: W. Benjamin Lackey — Title: Assistant Secretary

7) CONTACT NAME (To receive questions with this filing.)

IBERDROLA RENEWABLES, LLC

44852689-10129447 AMDART

FEES

Required Processing Fee $50
No Fee for Nonprofit Type Change Only
Certification Copy (Optional) $5
Processing Fees are nonrefundable.
Please make check payable to "Corporation Division."
NOTE:
Fees may be paid with VISA or MasterCard. The card number and expiration date should be submitted on a separate sheet for your protection.

113 (Rev. 8/07)

CSB05 - 08/01/2007 CT System Online

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12/31/2009 10:48AM 000001#1391 0001
BUSINESS REG $50.00

Phone: (503) 986-2200
Fax: (503) 378-4381

Articles of Merger

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilinginOregon.com

Check the appropriate box below:

☒ MULTI ENTITY MERGER
(Complete only 1, 2, 3, 4, 10, 11)

☐ FOR PARENT AND 90% OWNED SUBSIDIARY WITHOUT SHAREHOLDER APPROVAL
(Complete only 5, 6, 7, 8, 9, 10, 11)

FILED
DEC 31 2009
OREGON
SECRETARY OF STATE

SURVIVOR
REGISTRY NUMBER: 448526-89

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

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Please Type or Print Legibly in Black Ink. Attach Additional Sheet if Necessary.

1) NAMES AND TYPES OF THE ENTITIES PROPOSING TO MERGE

NAME	TYPE	REGISTRY NUMBER
Iberdrola Renewables, Inc.	Oregon corporation	448526-89
Iberdrola Renewable Energies USA, Ltd.	Delaware corporation	4100753

2) NAME AND TYPE OF THE SURVIVING ENTITY Iberdrola Renewables, Inc., an Oregon corporation

☐ Check here if there is a name change in this plan of merger.

3) A COPY OF THE MERGER PLAN IS ATTACHED. See ORS 60.481(2)

4) THE PLAN OF MERGER WAS DULY AUTHORIZED AND APPROVED BY EACH ENTITY THAT IS A PARTY TO THIS MERGER.

☒ A copy of the vote required by each entity is attached.

FOR PARENT AND 90% OWNED SUBSIDIARY WITHOUT SHAREHOLDER APPROVAL

5) NAME OF PARENT CORPORATION _____

Oregon Registry Number _____

6) NAME OF SUBSIDIARY CORPORATION _____

Oregon Registry Number _____

7) NAME OF SURVIVING CORPORATION _____

8) COPY OF PLAN

☐ A copy of the plan of merger setting forth the manner and basis of converting shares of the subsidiary into shares, obligations, or other securities of the parent corporation or any other corporation or into cash or other property is attached.

9) CHECK THE APPROPRIATE BOX

☐ A copy of the plan of merger or summary was mailed to each shareholder of record of the subsidiary corporation on or before _____ Date

☐ The mailing of a copy of the plan or summary was waived by all outstanding shares.

10) EXECUTION

Signature _____ Printed Name W. Benjamin Lackey Title Secretary

11) CONTACT NAME (To resolve questions with this filing.)

Evangeline Kessler

DAYTIME PHONE NUMBER (Include area code.)

(503) 478-6305

FEES

Required Processing Fee $50 - Confirmation Copy (Optional) $5
Processing Fees are nonrefundable.
Please make check payable to "Corporation Division."

NOTE:
Fees may be paid with VISA or MasterCard. The card number and expiration date should be submitted on a separate sheet for your protection.

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IBERDROLA RENEWABLES, INC.
44852689-11535124 MER

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AGREEMENT AND PLAN OF MERGER

This AGREEMENT AND PLAN OF MERGER (the "Agreement"), dated as of this 30th day of December, 2009, pursuant to Title 8, Section 252 of the Delaware General Corporation Law and Title 7, Section 60.501 of the Oregon Business Corporation Act (the "OBCA") is entered into by and between Iberdrola Renewable Energies USA, Ltd., a Delaware corporation ("Iberdrola USA") and Iberdrola Renewables, Inc., an Oregon corporation ("Renewables" or "Surviving Corporation" and, together with Iberdrola USA, the "Constituent Entities").

WITNESSETH that:

WHEREAS, the Constituent Entities are hereby adopting a plan of merger, providing for the merger (the "Merger") of Iberdrola USA with and into Renewables, with Renewables being the surviving corporation and continuing its corporate existence under the OBCA. The Merger will be consummated in accordance with this Agreement and evidenced by (i) Articles of Merger to be filed with the Oregon Secretary of State and (ii) a Certificate of Merger to be filed with the Delaware Secretary of State.

NOW, THEREFORE, BE IT RESOLVED, that the Constituent Entities, parties to this Agreement, in consideration of the mutual covenants, agreements and provisions hereinafter contained, do hereby prescribe the terms and conditions of the Merger and mode of carrying the save into effect as follows:

FIRST: Iberdrola USA hereby merges with and into Renewables, and Renewables shall be the Surviving Corporation.

SECOND: The Articles of Incorporation of Renewables as in effect upon the effective time of the Merger shall continue in full force and effect as the Articles of Incorporation of the Surviving Corporation. The name of the Surviving Corporation shall be Iberdrola Renewables, Inc.

THIRD: The manner of converting the outstanding shares of the capital stock of Iberdrola USA into shares of the Surviving Corporation shall be as follows:

(a) Each share of capital stock in Iberdrola USA outstanding immediately prior to the effective time of the merger shall by virtue of the Merger and without any action on the part of any holder thereof, be canceled and no consideration shall be issued in respect thereof; and

(b) Each share of capital stock in Renewables outstanding immediately prior to the effective time of the Merger shall, by virtue of the Merger and without any action on the part of any holder thereof, remain unchanged and shall continue to remain outstanding as a share of capital stock in the Surviving Corporation.

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FOURTH: The terms and conditions of the Merger are as follows:

(a) The bylaws of Renewables as in effect upon the effective time of the Merger shall be and remain the bylaws of the Surviving Corporation until the same shall be altered, amended and repealed as therein provided.

(b) The directors and officers of Renewables prior to the effective time of the Merger shall continue as directors and officers of the Surviving Corporation upon the effective time of the Merger.

(c) Powers of attorney and any signature authorization policies of Renewables as in effect upon the effective time of the Merger shall be and remain in effect the powers of attorney and signature authorization policies of the Surviving Corporation; powers of attorney and signature authorization policies of Iberdrola USA shall be revoked and without effect on and after the effective time of the Merger.

(d) The Merger shall become effective on December 31, 2009.

(e) Upon the effective time of the Merger, all of the property, rights, privileges, franchises, patents, trademarks, licenses, registrations and other assets of every kind and description of Iberdrola USA shall be transferred to, vested in and devolve upon the Surviving Corporation without further act or deed, and all property, rights and every other interest of Iberdrola USA shall be as effectively the property of the Surviving Corporation as they were of Iberdrola USA. Iberdrola USA hereby agrees from time to time, as and when requested by the Surviving Corporation or by its successors or assigns, to execute and deliver or cause to be executed and delivered all such deeds and instruments and to take or cause to be taken such further or other action as the Surviving Corporation may deem to be necessary or desirable in order to vest in and confirm to the Surviving Corporation title to and possession of any property of Iberdrola USA acquired or to be acquired by reason of or as a result of the Merger herein provided for and otherwise to carry out the intent and purposes hereof, and the proper officers and directors of Iberdrola USA and the proper officers and directors of the Surviving Corporation are fully authorized in the name of the Iberdrola USA and Surviving Corporation respectively or otherwise to take any and all such action.

(f) Upon the effective time of the Merger, Iberdrola USA shall cease to serve and Renewables shall commence to serve as the sponsoring and petitioning employer for U.S. immigration law purposes with respect to individuals formerly employed by Iberdrola USA and hereafter offered employment by Renewables. As a result, Renewables shall therefore assume all immigration-related obligations and liabilities that have arisen or will hereafter arise in connection with the submission of petitions, applications or other filings to certain bureaus within the U.S. Department of Homeland Security (U.S. Citizenship and Immigration Services, Immigration and Customs Enforcement, and Customs and Border Protection), the U.S. Department of Labor or the U.S. Department of State (including any U.S. Embassy or consular post) requesting the grant of employment-based nonimmigrant and immigrant visa benefits on behalf of these

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persons. The Constituent Entities hereby intend that Renewables (by agreeing to hire the employees formerly employed by Iberdrola USA, and agreeing, as a sponsoring employer, to assume the immigration-related obligations and liabilities described above) shall be considered the successor in interest to Iberdrola USA for U.S. immigration law purposes.

IN WITNESS WHEREOF the parties have hereunto caused the Agreement to be duly executed as of the date first above written.

IBERDROLA RENEWABLE ENERGIES USA, LTD.

By: _____
Name: Ralph Currey
Title: Authorized Representative

By: _____
Name: Trevor Mihalik
Title: Authorized Representative

IBERDROLA RENEWABLES, INC.

By: _____
Name: Ralph Currey
Title: Authorized Representative

By: _____
Name: Trevor Mihalik
Title: Authorized Representative

VOID IF ALTERED OR ERASED
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448526-89

VOTE TO APPROVE
AGREEMENT AND PLAN OF MERGER
IBERDROLA RENEWABLE ENERGIES USA, LTD.
WITH AND INTO
IBERDROLA RENEWABLES, INC.

Iberdrola Renewables, Inc., an Oregon corporation ("IRI")

The merger requires the approval of the sole shareholder of IRI. The merger was approved by the sole shareholder of IRI by unanimous consent of its Board of Directors. By such approval, the Agreement and Plan of Merger was duly authorized and approved in accordance with the Oregon statutes governing IRI.

Iberdrola Renewable Energies USA, Ltd., a Delaware corporation ("IBE USA")

The merger requires the approval of the sole shareholder of IBE USA. The merger was approved by the sole shareholder of IBE USA by unanimous consent of its Board of Directors. By such approval, the Agreement and Plan of Merger was duly authorized and approved in accordance with the Delaware statutes governing IBE USA.

SECRETARY OF STATE
STATE OF OREGON
CORPORATION DIVISION
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10/21/2010 4:06PM 000001 #5841
0001
BUSINESS REG $100.00
CHECK $100.00

Phone: (503) 986-2200
Fax: (503) 378-4381

Articles of Merger

Secretary of State
Corporation Division
255 Capitol St. NE, Suite 151
Salem, OR 97310-1327
FilingInOregon.com

Check the appropriate box below:

☒ MULTI ENTITY MERGER
(Complete only 1, 2, 3, 4, 10, 11)

☐ FOR PARENT AND 90% OWNED SUBSIDIARY WITHOUT SHAREHOLDER APPROVAL
(Complete only 5, 6, 7, 8, 9, 10, 11)

FILED
OCT 21 2010
OREGON
SECRETARY OF STATE

SURVIVOR
REGISTRY NUMBER: 448526-89

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in Black Ink. Attach Additional Sheet if Necessary.

1) **NAMES AND TYPES OF THE ENTITIES PROPOSING TO MERGE**

NAME	TYPE	REGISTRY NUMBER
Iberdrola Renewables, Inc.	Oregon corporation	448526-89
Wind Ventures Holdings, LLC	Delaware LLC	3993361 NR

2) **NAME AND TYPE OF THE SURVIVING ENTITY** Iberdrola Renewables, Inc., an Oregon corporation

☐ Check here if there is a name change in this plan of merger.

3) **A COPY OF THE MERGER PLAN IS ATTACHED.** See ORS 60.481(2)

4) **THE PLAN OF MERGER WAS DULY AUTHORIZED AND APPROVED BY EACH ENTITY THAT IS A PARTY TO THE MERGER.**

☒ A copy of the vote required by each entity is attached.

FOR PARENT AND 90% OWNED SUBSIDIARY WITHOUT SHAREHOLDER APPROVAL

5) **NAME OF PARENT CORPORATION** _____

Oregon Registry Number _____

6) **NAME OF SUBSIDIARY CORPORATION** _____

Oregon Registry Number _____

7) **NAME OF SURVIVING CORPORATION** _____

8) **COPY OF PLAN**

☐ A copy of the plan of merger setting forth the manner and basis of converting shares of the subsidiary into shares, obligations, or other securities of the parent corporation or any other corporation or into cash or other property is attached.

9) **CHECK THE APPROPRIATE BOX**

☐ A copy of the plan of merger or summary was mailed to each shareholder of record of the subsidiary corporation on or before _____ Date

☐ The mailing of a copy of the plan or summary was waived by all outstanding shares.

10) **EXECUTION**

Signature	Printed Name	Title
	W. Benjamin Lackey	Secretary of Iberdrola Renewables, Inc.

11) **CONTACT NAME** (To resolve questions with this filing.)

Evangeline Kessler

DAYTIME PHONE NUMBER (Include area code.)

(503) 478-6305

FEES

Required Processing Fee $50 - Confirmation Copy (Optional) $5
Processing Fees are nonrefundable.
Please make check payable to "Corporation Division."

NOTE:
Fees may be paid with VISA or MasterCard. The card number and expiration date should be submitted on a separate sheet for your protection.

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IBERDROLA RENEWABLES, INC.

44852689-12202716 MER

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VOTE TO APPROVE
AGREEMENT AND PLAN OF MERGER
WIND VENTURES HOLDINGS, LLC
WITH AND INTO
IBERDROLA RENEWABLES, INC.

Iberdrola Renewables, Inc., an Oregon corporation ("IRI")

The merger requires the approval of the Board of Directors of IRI. The merger was approved by the Board of Directors of IRI by unanimous consent. By such approval, the Agreement and Plan of Merger was duly authorized and approved in accordance with the Oregon statutes governing IRI.

Wind Ventures Holdings, LLC ("Wind Ventures Holdings")

The merger requires the approval of the sole member manager of Wind Ventures Holdings. The merger was approved by the sole member manager of Wind Ventures Holdings by consent of said member manager. By such approval, the Agreement and Plan of Merger was duly authorized and approved in accordance with the Delaware statutes governing Wind Ventures Holdings.

SECRETARY OF STATE
STATE OF OREGON
CORPORATION DIVISION
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AGREEMENT AND PLAN OF MERGER

This AGREEMENT AND PLAN OF MERGER (the "Agreement"), dated effective 15-September-2010, pursuant to the Limited Liability Company Act of the State of Delaware and the Oregon Business Corporation Act, is entered into by and between Wind Ventures Holdings, LLC, a Delaware limited liability company ("Wind Ventures Holdings") and Iberdrola Renewables, Inc., an Oregon corporation ("Iberdrola Renewables" or the "Surviving Entity" and, together with Wind Ventures Holdings, the "Constituent Entities").

WITNESSETH that:

WHEREAS, the Constituent Entities are hereby adopting a plan of merger, providing for the merger (the "Merger") of Wind Ventures Holdings with and into Iberdrola Renewables, with Iberdrola Renewables being the surviving entity and continuing its corporate existence under the Oregon Business Corporation Act. The Merger will be consummated in accordance with this Agreement and evidenced by (i) Articles of Merger to be filed with the Oregon Secretary of State, and (Ii) a Certificate of Merger to be filed with the Delaware Secretary of State.

NOW, THEREFORE, BE IT RESOLVED, that the Constituent Entities, parties to this Agreement, in consideration of the mutual covenants, agreements and provisions hereinafter contained, do hereby prescribe the terms and conditions of the Merger and mode of carrying the same into effect as follows:

1. Wind Ventures Holdings hereby merges with and into Iberdrola Renewables, and Iberdrola Renewables shall be the Surviving Entity.

2. The Articles of Incorporation of Iberdrola Renewables as in effect upon the effective time of the Merger shall continue in full force and effect as the Articles of Incorporation of the Surviving Entity. The name of the Surviving Entity shall be Iberdrola Renewables, Inc.

3. The terms and conditions of the Merger are as follows:

a. The bylaws of Iberdrola Renewables as in effect upon the effective time of the Merger shall be and remain the bylaws of the Surviving Entity until the same shall be altered, amended and repealed as therein provided.

b. The directors and officers of Iberdrola Renewables prior to the effective time of the Merger shall continue as directors and officers of the Surviving Entity upon the effective time of the Merger.

c. Powers of attorney and any signature authorization policies of Iberdrola Renewables as in effect upon the effective time of the Merger shall be and remain in effect the powers of attorney and signature authorization policies of the Surviving Entity; powers of attorney and signature authorization policies of Wind Ventures Holdings shall be revoked and without effect on and after the effective time of the Merger.

d. The Merger shall become effective on 15-September-2010.

e. Upon the effective time of the Merger, all of the property, rights, privileges, franchises, patents, trademarks, licenses, registrations and other assets of every kind and description of

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448526-89

Wind Ventures Holdings shall be transferred to, vested in and devolve upon the Surviving Entity without further act or deed, and all property, rights and every other interest of Wind Ventures Holdings shall be as effectively the property of the Surviving Entity as they were of Wind Ventures Holdings. Wind Ventures Holdings hereby agrees from time to time, as and when requested by the Surviving Entity or by its successors or assigns, to execute and deliver or cause to be executed and delivered all such deeds and instruments and to take or cause to be taken such further or other action as the Surviving Entity may deem to be necessary or desirable in order to vest in and confirm to the Surviving Entity title to and possession of any property of Wind Ventures Holdings acquired or to be acquired by reason of or as a result of the Merger herein provided for and otherwise to carry out the intent and purposes hereof, and the proper members of Wind Ventures Holdings and the proper officers and directors of the Surviving Entity are fully authorized in the name of the Wind Ventures Holdings and Surviving Entity, respectively or otherwise, to take any and all such action.

IN WITNESS WHEREOF the parties have hereunto caused the Agreement to be duly executed as of the date first above written.

WIND VENTURES HOLDINGS, LLC

By: Iberdrola Renewables, Inc., its sole member and manager

By: _____
Name: Ralph Currey
Title: Authorized Representative

By: _____
Name: Trevor Mihalik
Title: Authorized Representative

IBERDROLA RENEWABLES, INC.

By: _____
Name: Ralph Currey
Title: Authorized Representative

By: _____
Name: Trevor Mihalik
Title: Authorized Representative

LEGAL

LEGAL

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STATE OF OREGON CORPORATION DIVISION
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648/43 $ 100

Articles of Conversion - Business Entities

Secretary of State - Corporation Division - 255 Capitol St. NE, Suite 151 - Salem, OR 97310-1327 - http://www.FilinginOregon.com - Phone: (503) 986-2200

FILED

FEB 17 2012

OREGON
SECRETARY OF STATE

REGISTRY NUMBER: 448526-89

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in **Black** Ink.

1) NAME OF BUSINESS ENTITY PRIOR TO CONVERSION:
IBERDROLA RENEWABLES, INC.

2) TYPE OF BUSINESS ENTITY PRIOR TO CONVERSION:
OREGON CORPORATION

3) NAME OF BUSINESS ENTITY AFTER CONVERSION:
IBERDROLA RENEWABLES, LLC

4) TYPE OF BUSINESS ENTITY AFTER CONVERSION:
OREGON LIMITED LIABILITY COMPANY

5) ☑ A COPY OF THE PLAN OF CONVERSION IS ATTACHED.

6) PROVIDE ADDITIONAL INFORMATION REQUIRED FOR NEW ENTITY TYPE

The effective time of the conversion shall be April 2, 2012.

The name and address of the Manager is Iberdrola Renewables Holdings, Inc., 1125 NW Couch Street, Suite 700, Portland, Oregon 97209.

7) EXECUTION: (Must be signed by an officer or director for a corporation, a member or manager for a limited liability company, a general partner for a limited partnership, or a partner for a limited liability partnership.)
By my signature, I declare as an authorized authority, that this filing has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete. Making false statements in this document is against the law and may be penalized by fines, imprisonment or both.

Signature: W. Benjamin Lackey

Printed Name: W. Benjamin Lackey

Title: Secretary

IBERDROLA RENEWABLES, LLC

44852689-13318353 CNV

FEES

Domestic Required Processing Fee $100
Foreign Required Processing Fee $275

Confirmation Copy (Optional) $5

Processing Fees are nonrefundable. Please make check payable to "Corporation Division."

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PLAN OF CONVERSION

Iberdrola Renewables, Inc., an Oregon Corporation
into
Iberdrola Renewables, LLC, an Oregon Limited Liability Company

1. The name and type of the business entity prior to conversion is Iberdrola Renewables, Inc., an Oregon corporation (the "Corporation").

2. The name and type of the business entity after conversion is Iberdrola Renewables, LLC, an Oregon limited liability company (the "LLC").

3. The Corporation shall be converted into the LLC (the "Conversion") effective as of April 2, 2012.

4. Effective upon the Conversion, the LLC shall be manager managed. The sole shareholder of the Corporation will be the sole member of the LLC and effective upon the Conversion, 100% of the Corporation's common stock owned by the Corporation's sole shareholder shall convert into a 100% membership interest in the LLC. The name and address of the sole member of the LLC are Iberdrola Renewables Holdings, Inc., 1125 NW Couch Street, Suite 700, Portland, OR 97209.

5. Effective upon the Conversion, the LLC will be governed by the Articles of Organization filed with the Secretary of State of Oregon.

SECRETARY OF STATE
STATE OF OREGON
CORPORATION DIVISION
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448526-89

ARTICLES OF ORGANIZATION
OF
IBERDROLA RENEWABLES, LLC
an Oregon Limited Liability Company

ARTICLE I

The name of the limited liability company (the "Company") is Iberdrola Renewables, LLC.

ARTICLE II

The Company shall have perpetual existence.

ARTICLE III

The name of the initial registered agent is CT Corporation System and the address of the initial registered office is 388 State Street, Suite 420, Salem, Oregon 97301.

ARTICLE IV

The address where the Division may mail notices is Attention: Paralegal, 1125 NW Couch Street, Suite 700, Portland, OR 97209.

ARTICLE V

The Company shall be managed by its managers. The initial manager shall be Iberdrola Renewables Holdings, Inc.

ARTICLE VI

The name and address of the organizer of the Company are Iberdrola Renewables, Inc., Attention: Benjamin W. Lackey, 1125 NW Couch Street, Suite 700, Portland, OR 97209.

ARTICLE VII

To the fullest extent the Oregon Limited Liability Company Act, as it exists on the date hereof or may hereafter be amended, permits the limitation or elimination of liability of members, a member shall not be liable to the Company or the other members for monetary damages for conduct as a member. Any amendment to or repeal of this Article VII shall not adversely affect any right or protection of a member for or with respect to any acts or omissions of such member occurring prior to such amendment or repeal.

DATED this 17th day of February, 2012.

IBERDROLA RENEWABLES, INC.

By: W. Benjamin Lackey
Its: Secretary

71154729.2 0058892-00384

VOID IF ALTERED OR ERASED
VOID IF ALTERED OR ERASED
SECRETARY OF STATE
STATE OF OREGON
CORPORATION DIVISION
VOID WITHOUT WATERMARK OR IF ALTERED OR ERASED

Articles of Amendment/Dissolution - Limited Liability Company

Secretary of State - Corporation Division - 255 Capitol St. NE, Suite 151 - Salem, OR 97310-1327 - http://www.FilingInOregon.com - Phone: (503) 986-2200

(●) ARTICLES OF AMENDMENT (Complete only 1, 2, 3, 6)

( ) ARTICLES OF DISSOLUTION (Complete 4, 5, 6)

FILED

FEB 18 2016

OREGON
SECRETARY OF STATE

Print Form | Reset Form

REGISTRY NUMBER: 448526-89

In accordance with Oregon Revised Statute 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

For office use only

Please Type or Print Legibly in **Black** Ink. Attach Additional Sheet if Necessary.

ARTICLES OF AMENDMENT ONLY

1. **ENTITY NAME:** Iberdrola Renewables, LLC

2. **THE FOLLOWING AMENDMENT(S) TO THE ARTICLES OF ORGANIZATION IS MADE HEREBY:** (State the article number(s) and set forth the article(s) as it is amended to read.)

Article 1

The name of the Limited Liability Company (the "Company") is Avangrid Renewables, LLC

3. **PLEASE CHECK THE APPROPRIATE STATEMENT:**

( ) This amendment was adopted by the manager(s) without member action. Member action was not required.

Date of adoption of each amendment: _____

(●) This amendment(s) was approved by the members. 100 percent of the members approved the amendment(s).

Date of adoption of each amendment: February 12, 2016

ARTICLES OF DISSOLUTION ONLY

4. **NAME OF LIMITED LIABILITY COMPANY:** _____

5. **DATE OF DISSOLUTION:** _____

6. **EXECUTION:** By my signature, I declare as an authorized signer, that this filing has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete. Making false statements in this document is against the law and may be penalized by fines, imprisonment or both.

Signature:	Printed Name:	Title:
	W. Benjamin Lackey	Secretary

CONTACT NAME: (To resolve questions with this filing)

Maria Rojas

PHONE NUMBER: (Include area code)

484-654-2138

AVANGRID RENEWABLES, LLC

44852689-16795369 AMDART

VOID IF ALTERED OR ERASED
VOID WITHOUT WATERMARK OR IF ALTERED OR ERASED

Attachment 4a
DOGAMI Consultation

PATRICK, MARCELLA

From: MCCLAUGHRY Jason * DGMI <jason.mcclaughry@dogami.oregon.gov>
Sent: Thursday, November 30, 2023 8:00 AM
To: PATRICK, MARCELLA
Cc: GUZMAN, CARLOS; Kester, Benjamin; Mullen, Mark; HALEY, TALIA
Subject: RE: Avangrid/Leaning Juniper IIA Wind Facility - DOGAMI Consultation for Repowering Efforts

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

HI Marcy.
Thank you for your email. I concur that Avangrid discussed the methods for evaluating the turbine foundations at the Leaning Juniper IIA Repower Project with DOGAMI, including the methods listed in your email below.

Best Regards,
Jason

Jason D. McClaughry, R.G.
Geological Survey and Services Program Manager
Oregon Department of Geology and Mineral Industries
Baker City|1995 3rd Street, Suite 130|Baker City, Oregon 97814
Portland|800 NE Oregon Street, Suite 965|Portland, Oregon 97232
Cell: (541) 519-3419
jason.mcclaughry@dogami.oregon.gov | www.oregon.gov/dogami

Unless otherwise indicated, all information in this correspondence is classified as Level 1, "Published" according to State of Oregon statute and administrative policy.

From: PATRICK, MARCELLA <marcella.patrick@avangrid.com>
Sent: Tuesday, November 28, 2023 9:44 AM
To: MCCLAUGHRY Jason * DGMI <jason.mcclaughry@dogami.oregon.gov>
Cc: GUZMAN, CARLOS <carlos.guzman@avangrid.com>; Kester, Benjamin <benjamin.kester@avangrid.com>; Mullen, Mark <Mark.Mullen@avangrid.com>; HALEY, TALIA <talia.haley@avangrid.com>
Subject: RE: Avangrid/Leaning Juniper IIA Wind Facility - DOGAMI Consultation for Repowering Efforts

Good morning Jason, I hope you had a great long weekend! Following up on this email sent earlier in November.

If you could, please provide confirmation that Avangrid discussed the methods for evaluating the turbine foundations at the Leaning Juniper IIA Repower Project with DOGAMI, and that you concur with the methods discussed.

If you would like a follow-up discussion prior to providing concurrence, please let me know.

Thank you!
Marcy

Marcy Patrick (*she/her/Ms.*)
Permit Manager – Renewables
Cell: 801.946.1092

From: PATRICK, MARCELLA
Sent: Thursday, November 9, 2023 10:30 AM
To: MCCLAUGHRY Jason DGMI <jason.mcclaughry@dogami.oregon.gov>
Cc: GUZMAN, CARLOS <carlos.guzman@avangrid.com>; Kester, Benjamin <benjamin.kester@avangrid.com>; Mullen, Mark <Mark.Mullen@avangrid.com>; HALEY, TALIA <talia.haley@avangrid.com>
Subject: RE: Avangrid/Leaning Juniper IIA Wind Facility - DOGAMI Consultation for Repowering Efforts

Good morning Jason, following up from Avangrid's meeting with DOGAMI on October 4th, 2023, we are seeking concurrence on the methods used for conducting the foundation assessment for the proposed Leaning Juniper IIA Repower Project.

If possible, please respond to this email confirming that DOGAMI concurs with the methods discussed for evaluating the turbine foundations at the Leaning Juniper IIA Repower Project.

As a reminder, the methods discussed were the following. Please note a couple minor changes in red. After a discussion with ODOE this week, Avangrid's understanding is that ODOE has contracted a firm to complete the review of the final foundation evaluation report and course of actions, and that DOGAMI concurrence is required for the methods used to conduct the evaluation report.

1) Complete an assessment of the existing foundations at the Facility.
2) Prepare a course of actions to accommodate the repowered turbines at the Facility.
3) Discuss methods used to complete foundation evaluation report with DOGAMI, and obtain concurrence.
4) Provide the foundation evaluation report and course of actions to ~~DOGAMI~~ ODOE for review.
5) The foundation assessment will consist of:
    a. Feasibility of the existing foundations from the structural, geotechnical, and seismic perspective.
    b. Recommend course of action to accommodate the loads from the repowered turbines.
6) Based on results from assessment, the course of actions can consist of the following:
    a. Perform inspections on the foundations prior to the repower of the Facility, and/or
    b. Design a foundation reinforcement so that the strength, confinement, or any other aspect of the foundation can improve, if needed.
7) Both the assessment and course of actions will consider the following:
    a. Geotechnical conditions determined by the original geotechnical report for the project.
    b. Local building and structural codes, and site-specific loading parameters.

If you have any questions or would like a second discussion, please let me know.

Thank you!
Marcy

Marcy Patrick (*she/her/Ms.*) **Cell: 801.946.1092**
Permit Manager – Renewables

Internal Use

From: PATRICK, MARCELLA
Sent: Tuesday, September 5, 2023 3:52 PM
To: jason.mcclaughry@dogami.oregon.gov
Cc: GUZMAN, CARLOS <carlos.guzman@avangrid.com>; Kester, Benjamin <benjamin.kester@avangrid.com>; Mullen, Mark <Mark.Mullen@avangrid.com>
Subject: Avangrid/Leaning Juniper IIA Wind Facility - DOGAMI Consultation for Repowering Efforts

Good afternoon Jason,

Avangrid Renewables holds a Site Certificate for the Leaning Juniper IIA Wind Facility (Facility) in Gilliam County and is working with Oregon Department of Energy and EFSC to amend the Site Certificate. We are seeking approval from the Council to repower the Facility with newer technologies that more efficiently generate electricity from wind. As part of this process, we are seeking input from DOGAMI as required by the Structural Standards at OAR 345-021-0010(1)(h)(B) which state:

(B) A summary of consultation with the Oregon Department of Geology and Mineral Industries regarding the appropriate methodology and scope of the seismic hazards and geology and soil-related hazards assessments, and the appropriate site-specific geotechnical work that must be performed before submitting the application for the Department to determine that the application is complete.

The Leaning Juniper IIA repowering project is at an earlier stage in development. We have not yet completed final assessment of the existing facility and site-specific structural investigations are underway, so there is not much for you to review other than the attached Exhibit H that was prepared in 2006 for the Facility as part of initial permitting efforts.

However, we wanted to reach out to DOGAMI to begin consultation on the following actions Leaning Juniper IIA will complete prior to the repowering construction efforts:

1) Complete an assessment of the existing foundations at the Facility.
2) Prepare a course of actions to accommodate the repowered turbines at the Facility.
3) Provide the foundation evaluation report and course of actions to DOGAMI for review.
4) The foundation assessment will consist of:
    a. Feasibility of the existing foundations from the structural, geotechnical, and seismic perspective.
    b. Recommend course of action to accommodate the loads from the repowered turbines.
5) Based on results from assessment, the course of actions can consist of the following:
    a. Perform inspections on the foundations prior to the repower of the Facility, and/or
    b. Design a foundation reinforcement so that the strength, confinement, or any other aspect of the foundation can improve, if needed.
6) Both the assessment and course of actions will consider the following:
    a. Geotechnical conditions determined by the original geotechnical report for the project.
    b. Local building and structural codes, and site-specific loading parameters.

Please let us know if DOGAMI has any initial comments on the actions described above, or if a meeting would be helpful to coordinate these actions to ensure they satisfy DOGAMI's requirements for evaluating the proposed repowering activities in regards to the Structural Standards.

Thank you,
Marcy

Avangrid
A member of the Iberdrola Group

Marcy Patrick (*she/her/Ms.*)
Permit Manager – Renewables
marcella.patrick@avangrid.com

2701 NW Vaughn St., Suite 300, Portland, OR 97210
Cell: 801.946.1092

Internal Use

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Attachment 4b
Geologic Risk Assessment Memorandum

resourceful. naturally.
engineering and environmental consultants

BARR

Technical Memorandum

To: Ben Kester and Carlos Guzman, Avangrid
From: Joel Bahma
Subject: Leaning Juniper IIa potential hazards
Date: December 8, 2023
Project: 47/20-1010

Per your request, Barr Engineering Co. has prepared a table of geologic risks and the potential of the Leaning Juniper IIa project to be susceptible to them. Since Leaning Juniper IIa was constructed in the mid 2000's and is being considered for repowering, the potential hazards were identified during the site investigation phase and addressed as necessary during the construction phase. This re-examination is a further check on the potential hazards. Figure 1 shows the site layout.

The NRCS (web soil survey, 2023) lists risks by soil unit for various types of development. The NRCS lists the following hazards in the project area for small commercial buildings (the category most similar to the project): somewhat to very limited due to slopes, swell, and depth to bedrock. These hazards were known and dealt with at the time of development.

Table 1 Summary of Geologic Hazards

Hazard	Present at Site?	Comment
Flooding/High groundwater	No	The turbines are located on the high ground (Figure 2). The geotechnical investigation for turbine foundation design (Barr, 2009), typically 60 feet deep, found no evidence of a water table. The USDA reports the water table is greater than 200 cm deep. The project area is bounded by several deep canyons including the Columbia River gorge, which tends to lower the water table. These same factors suggest that flooding is not a risk at the turbine locations. FEMA has not determined the site flood zones.
Slope failure	Possibly	The turbines are generally located on the rolling upland hills, but some are near steep slopes and the deeply incised canyons (Figure 3). The Oregon Department of Geology and Mineral Industries (DOGAMI) has mapped the landslide susceptibility of the area (Figure 4). Several of the turbines are near or in areas deemed to have moderate landslide susceptibility by DOGAMI: B7, D3, K1, K2, T2, T6, Y2, Y3, Z2, Z3, Z4, Z5. See Attachment 1 for further evaluation.
Subsidence – Pumping	No	There is no known development of oil or gas in the project area, and no large withdrawals of groundwater. The rigid structure of the bedrock resists subsidence from pumping.
Subsidence – Mining	No	There are no recorded underground mines in the area.
Subsidence – Caves/Karst	No	The Columbia River Flood Basalt bedrock has a very low susceptibility to dissolution (Figure 5).
Earthquake – Seismicity	Yes	The site is in an area projected for moderate shaking from the Cascadia Fault (Oregon DOGAMI, 2023). The site is in an area of moderate to strong seismicity, with most turbines in areas of strong shaking (Figure 6 and 7; Madin and Mabey, 1996). The seismic plus operating load is not a critical design load case. (Barr, 2023).

Hazard	Present at Site?	Comment
Earthquake – Ground rupture	Possible	The Arlington-Shutler Butte fault passes through the east side of the site, close to the T2 and X5 turbines (Figure 7; USGS, 2023).
Liquefaction	No	This is a region of moderate to strong seismicity but the soil conditions are not conducive for liquefaction due to the deep water table.
Seiche and storm surge	No	There are no large bodies of water in the project area.
Swelling/shrinking soil	No	Linear extensibility is generally low across the site (<3 percent) with a few patches of moderate swell (3-5 percent; Figure 8). Given the depth of the turbine foundation embedment, soil swell is not a risk to the turbines. Swell is a risk to roads and structures on shallow foundations.
Settlement	No	Settlement was evaluated and accounted for in the design of the existing turbines. The proposed upgrades to the turbines will not significantly alter the normal or extreme loading conditions. Normal load moment increase is less than 5%, and the repower extreme load is lower than the original turbine. Repower turbine dead weight is less than the existing turbine.
Corrosive soil	Yes	Corrosivity to steel varies from low to high (Figure 9). Corrosivity to concrete is low (Figure 10). Soil pH, chloride, and sulfate were tested as part of the design geotechnical investigation (Barr, 2009) and were accounted for as needed in the foundation design.
Made ground	Unlikely	While the area is rural, small areas of fill may be present, but as this is a repower any made ground has either already been dealt with or is outside of any area of activity.
Collapsible soil	No	There is a layer of varying thicknesses of loess across the site. Testing during the design phase geotechnical investigation (Barr, 2009) found the loess had negligible collapse potential of less than 1 percent.
Reactive aggregate	Unknow	No data
Volcanic activity	No	The Cascade volcanoes are more than 50 miles to the west. Oregon DOGAMI (2023) projects no volcanic hazard at the site, although the site could be subject to ash fall.
Quick clay	No	There are no deposits of quick clay in the region.
Frost Action	Varies	Frost action is moderate to high across most of the site (Figure 11), with a few areas of low susceptibility. The frost depth is 18 inches (City of Portland, 2023). Given the depth of the turbine foundation embedment, frost action is not a risk to the turbines. Frost action is a risk to roads and structures on shallow foundations.
Erosion	No	Barr completed an above-grade visual inspection of all foundations in September 2023. Minor erosion or backfill settlement was observed at some sites and it was recommended that the backfill be restored to what was specified on the original construction drawings. This degree of erosion after more than 10 years suggests erosion is not a significant risk. Erosion can be corrected based on routine maintenance.

Limitations

This report contains opinions made by Barr, using its professional judgment and reasonable care. Use of this report is subject to the following conditions:

1. The report being read in the context of and subject to the terms of the agreement between Barr and Avangrid, including the methodologies, procedures, techniques, assumptions, and other relevant terms or conditions that were specified or agreed therein.

2. The report being read as a whole, with sections or parts hereof read or relied upon in context.

3. The opinions and probable costs provided in this report are made on the basis of Barr's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. Any cost opinion is based on project-related information available to Barr. The opinion of cost may change as more information becomes available. In addition, since we have no control over the cost of labor, materials, equipment, or services furnished by others, or over the contractor's methods of determining prices, or over competitive bidding or market conditions, Barr cannot and does not guarantee that proposals, bids, or actual costs will not vary from the opinion of probable cost prepared by Barr. If Avangrid wishes greater assurance as to probable cost, Avangrid should wait until further information is available.

4. The conclusions and opinions expressed in this report are based on a review of the documents listed in the References section, as well as our education, training, and experience as licensed professional engineers. These conclusions and opinions are based on the information that has been provided to us at this time and may be modified or supplemented if new information becomes available.

Figures and Attachments

Figure 1 Site Layout
Figure 2 Site Topography
Figure 3 Site Slope Map
Figure 4 Landslide Susceptibility Map
Figure 5 Bedrock Geology Map
Figure 6 Seismic Hazards
Figure 7 Expected Earthquake Shaking
Figure 8 Linear Extensibility
Figure 9 Corrosion to Steel
Figure 10 Corrosion to Concrete
Figure 11 Frost Action
Figure 12 Surficial Soil USCS Classifications
Attachment 1 Leaning Juniper 2a Slope Stability Assessment

References

Barr Engineering Co., August 2009. Geotechnical Engineering Report, Leaning Juniper IIa Wind Project. Prepared for Iberdrola Renewables.

Barr Engineering Co., July 2023. Leaning Juniper IIa Wind Project, Wind Turbine Foundation Evaluation Report, Repowering with a GE2.5-116.

CH2M Hill, 2006. Leaning Juniper II Wind Power Facility Exhibit H. 2007-05-15-LJIIA-ASC-Exhibits-H-L.pdf (oregon.gov)

City of Portland, 2023. Structural Design Requirements for Commercial Structures. https://www.portland.gov/bds/structural-engineering/commercial-structures

Madin, IP and MA Mabey, 1996. Earthquake Hazard Maps for Oregon. Oregon Department of Geology and Mineral Industry\ies GMS-100 https://www.oregongeology.org/pubs/gms/gms-100.pdf

Oregon DOGAMI, accessed 11/3/23. Oregon HazVu: Statewide Geohazards Viewer. https://gis.dogami.oregon.gov/maps/hazvu/

Soil Survey Staff, NRCS USDA, November 2023. Soil Survey Geographic (SSURGO) Database. https://sdmdataaccess.sc.egov.usda.gov

United States Department of Agriculture (USDA), accessed November 2023. Web Soil Survey, http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

United States Geological Survey (USGS), accessed November 2023a. USGS provides update for the National Seismic Hazard Model. https://www.usgs.gov/news/usgs-provides-update-national-seismic-hazard-model

United States Geological Survey (USGS), accessed November 2023. Interactive Fault Map http://earthquake.usgs.gov/hazards/qfaults/map/

United States Geological Survey (USGS), accessed November 2023. Quaternary Fault and Fold Database of the United States - Arlington-Shutler Butte fault (Class A) No. 847 https://earthquake.usgs.gov/cfusion/qfault/show_report_AB_archive.cfm?fault_id=847&section_id=

Turbine Location (8/22/2023)

County Boundary

Feet

3,000 0 3,000

Meters

1,000 0 1,000

Figure 1

SITE LAYOUT

Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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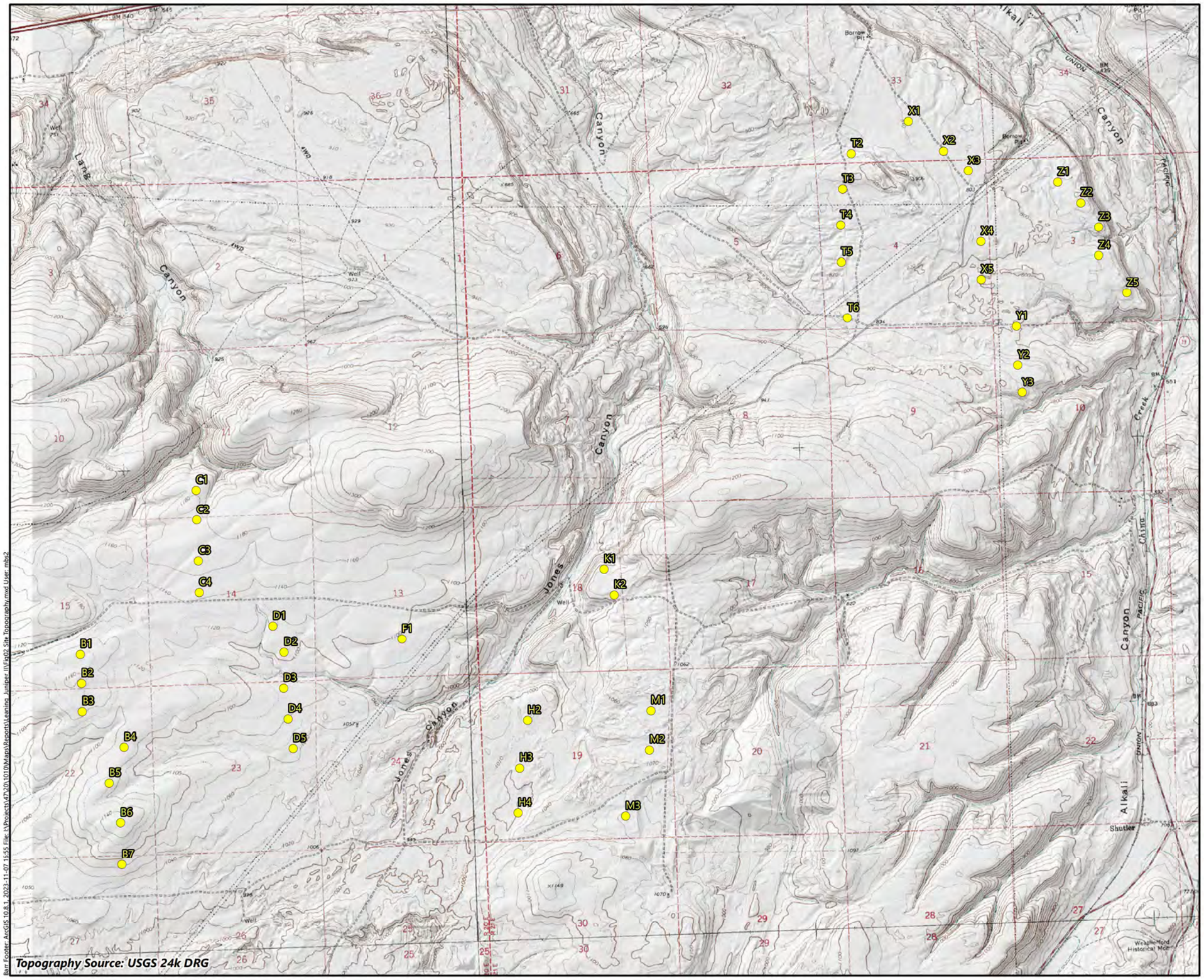


Turbine Location (8/22/2023)

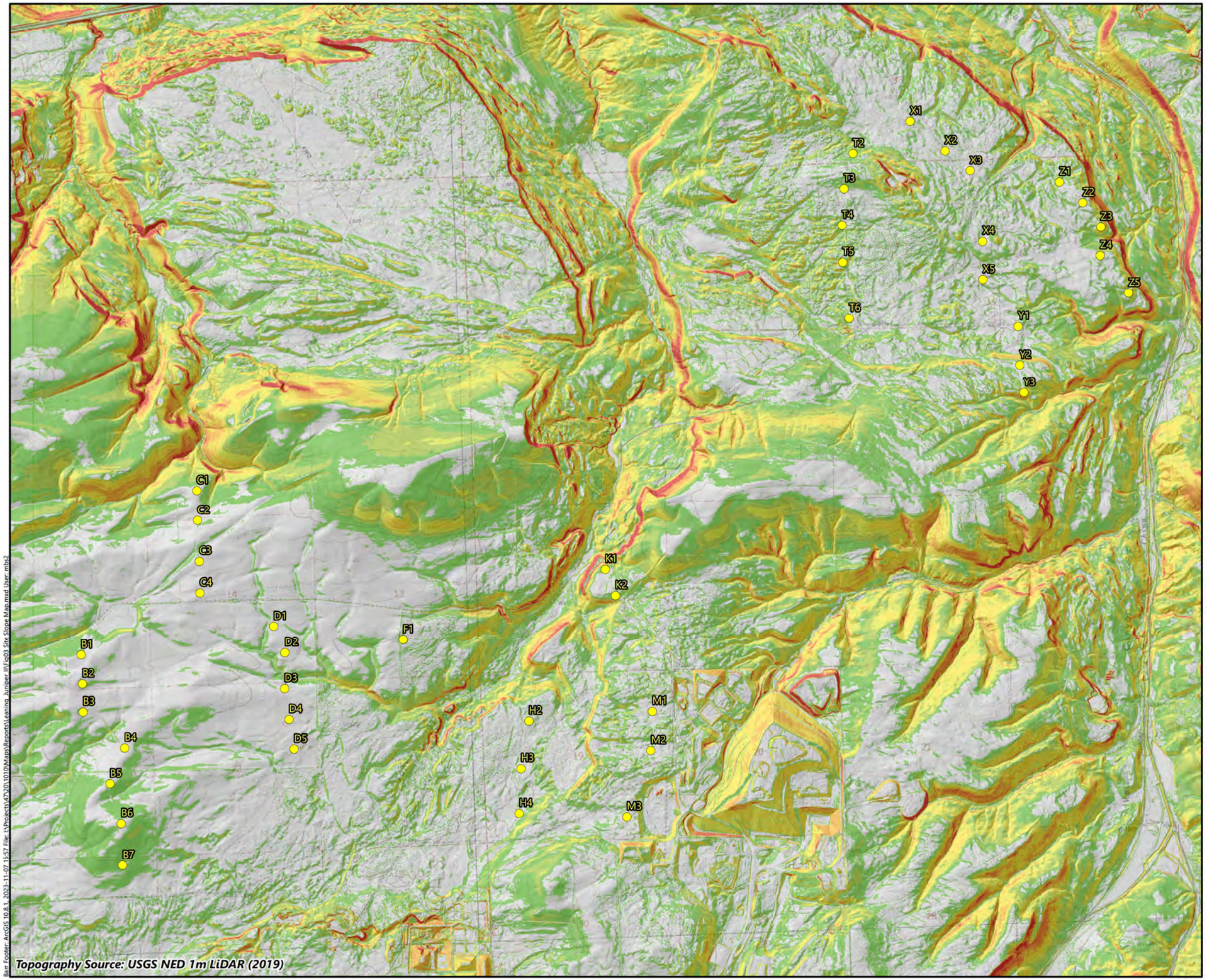
Feet
3,000 0 3,000

Meters
1,000 0 1,000

Figure 2

SITE TOPOGRAPHY
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGIS 10.8.1 2023-11-07 16:55 File: N:\Projects\47300\1010\Maps\Reports\Leaning Juniper IIa\Fig02 Site Topography.mxd User: mbc2



Turbine Location (8/22/2023)

Percent Slope

- 0 - 5 (Not Shown)
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- > 50

N

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Figure 3

SITE SLOPE MAP
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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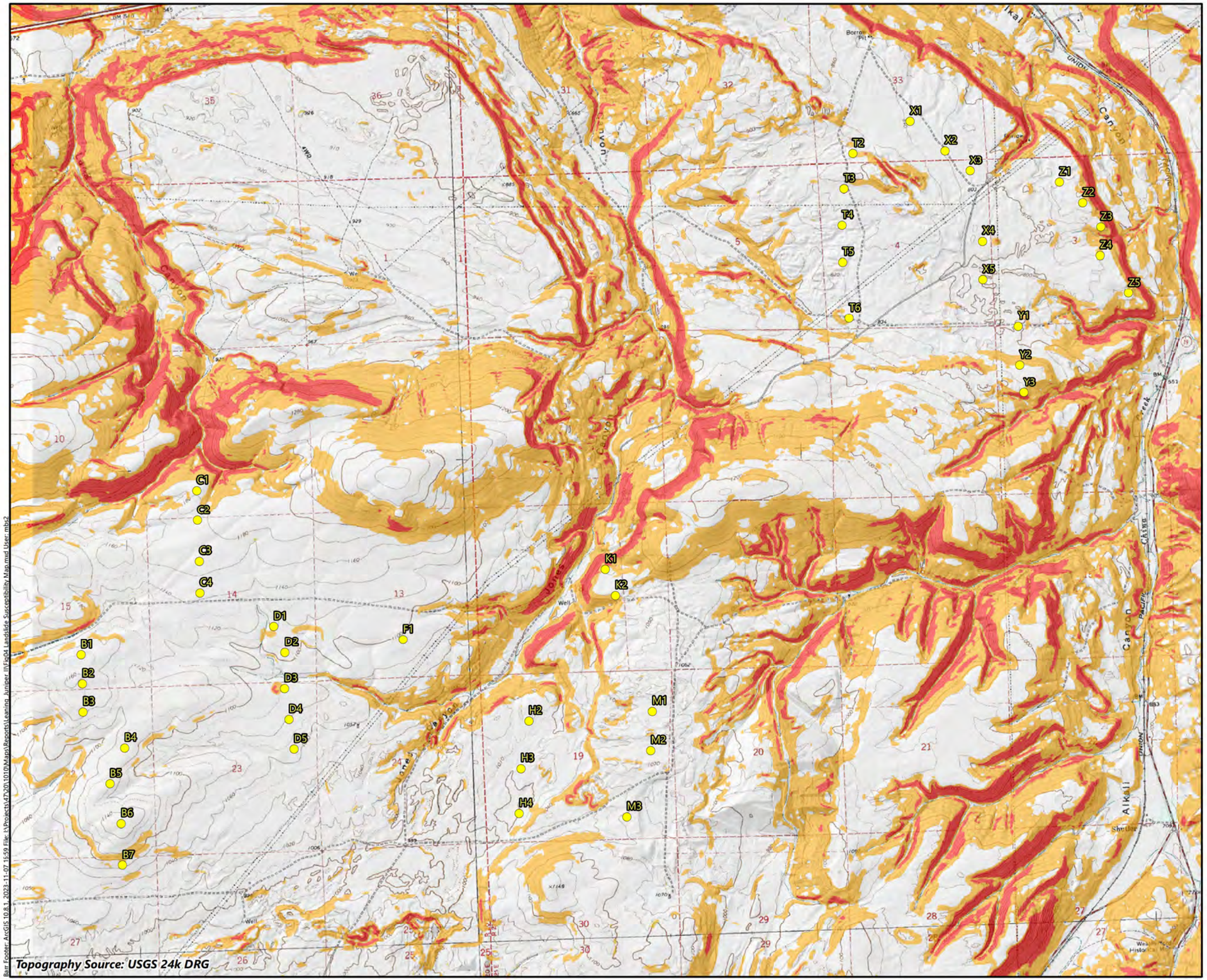


Turbine Location (8/22/2023)

Landslide Susceptibility

- Low - Landsliding Unlikely
- Moderate - Landsliding Possible
- High - Landsliding Likely

Oregon Department of Geology and Mineral Industries: http://www.oregongeology.org/sub/slido/data.htm SLIDO Release 4.4.

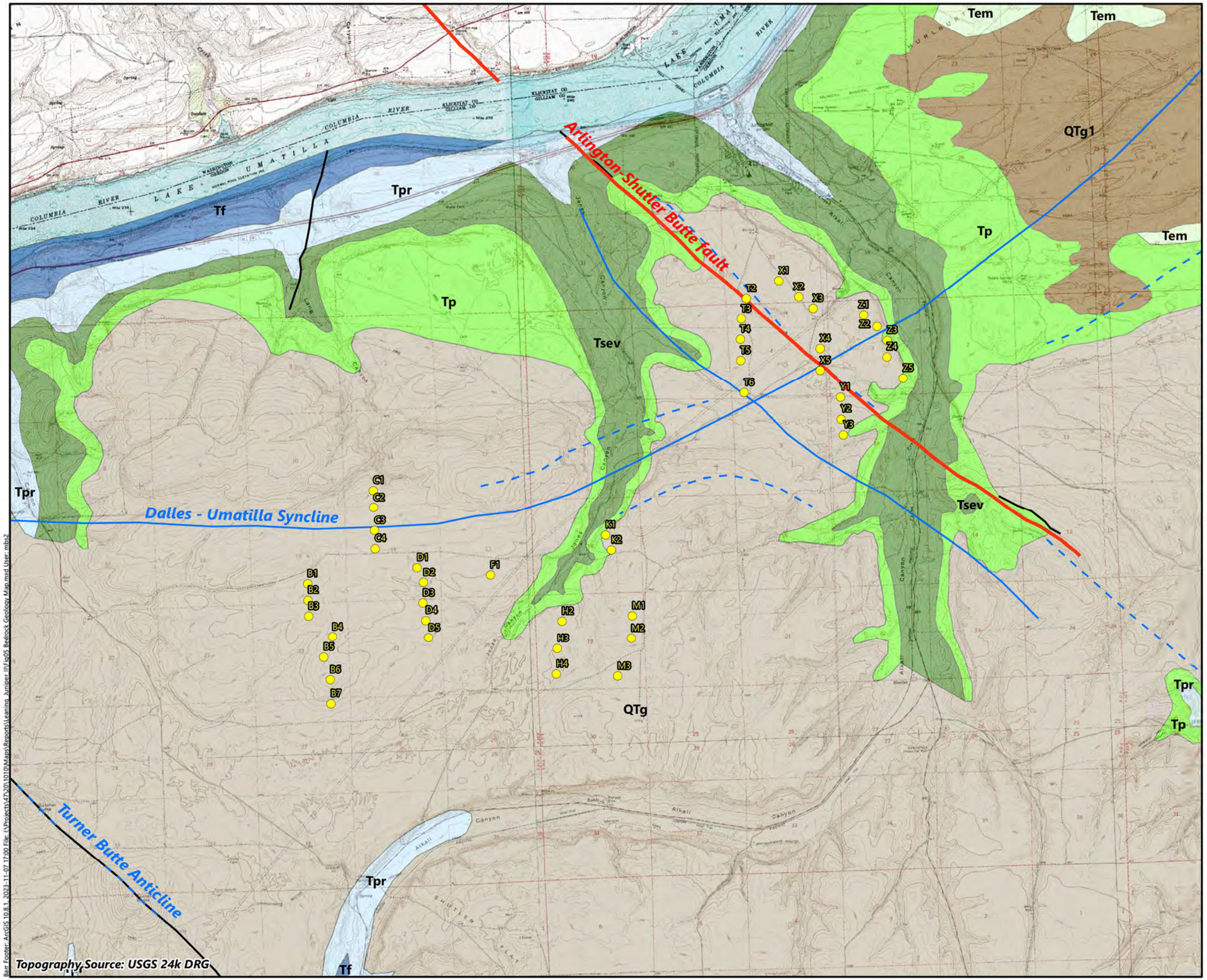
Feet
3,000 0 3,000

Meters
1,000 0 1,000

Figure 4

LANDSLIDE SUSCEPTIBILITY MAP
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGIS 10.8.1, 2023-11-07 16:59 File: I:\Projects\47\30\1010\Maps\Reports\Leaning_Juniper_IIa\Fig04_Landslide_Susceptibility_Map.mxd User: mbc2



Turbine Location (8/22/2023)

Quaternary Fault[1]

Syncline[2]

Anticline[2]

Normal Fault - Certain[2]

Geologic Unit[2]

Quatenary Deposits

QTg--Alkali Canyon Formation

QTg1--Gravel and conglomerate

Saddle Mountain Basalt

Tem--Elephant Mountain member

Tp--Pomona Member

Tsev--Volcaniclastic deposits

Wanapum Basalt

Tpr--Priest Rapids Member

Tf--Frenchman Springs Member

[1]*U.S. Geological Survey. Quaternary fault and fold database for the United States, accessed Nov. 29, 2021 at: https://www.usgs.gov/natural-hazards/earthquake-hazards*

[2]*Oregon Department of Geology and Mineral Industries. Oregon Geologic Data Compilation, release 7 (OGDC-7), compiled by Jon J. Franczyk, Ian P. Madin, Carlie J.M. Duda, and Jason D. McClaughry. 2020.*

Miles

1 0 1

Kilometers

1.5 0 1.5

Figure 5

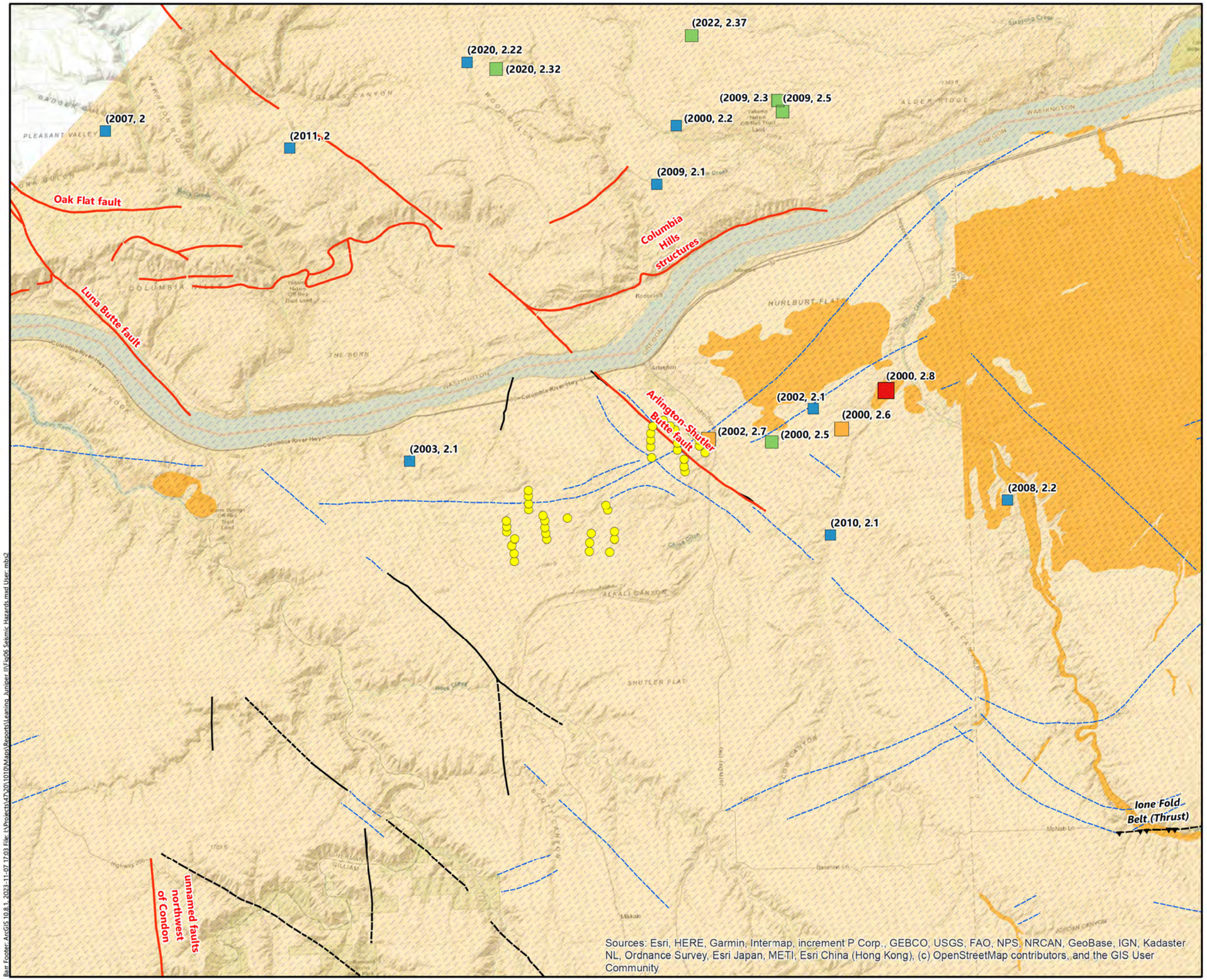
BEDROCK GEOLOGY MAP

Leaning Juniper IIa Wind Project

Avangrid Renewables, LLC

Gilliam County, Oregon

Barr Footer: ArcGIS 10.8.1, 2023-11-07 17:00 File: I:\Projects\427x\1010\Maps\Reports\Leaning Juniper IIA\Fig05 Bedrock Geology Map.mxd User: mbr2



Turbine Location (8/22/2023)

Earthquake Epicenter (>2.0M, 2000-Present)
(Labeled with year, magnitude)

- 2.00 - 2.25 M
- 2.25 - 2.50 M
- 2.50 - 2.75 M
- 2.75 - 3.00 M

Quaternary Fault[1]

Folds[2]

Older Fault[2]

- Fault, certain
- Normal, certain
- Strike-slip, certain
- Thrust, certain

Moderate Earthquake Liquefaction (Soft Soil) Hazard

Peak ground acceleration with a 1% probability of exceedance in 1 year, %g *

- 2 - 3

** Peak ground acceleration with a 1% probability of exceedance in 1 year, units of percent g based on results from the 2014 National Seismic Hazard Model, USGS.*

[1]U.S. Geological Survey. Quaternary fault and fold database for the United States, accessed Nov. 29, 2021 at: https://www.usgs.gov/natural-hazards/earthquake-hazards

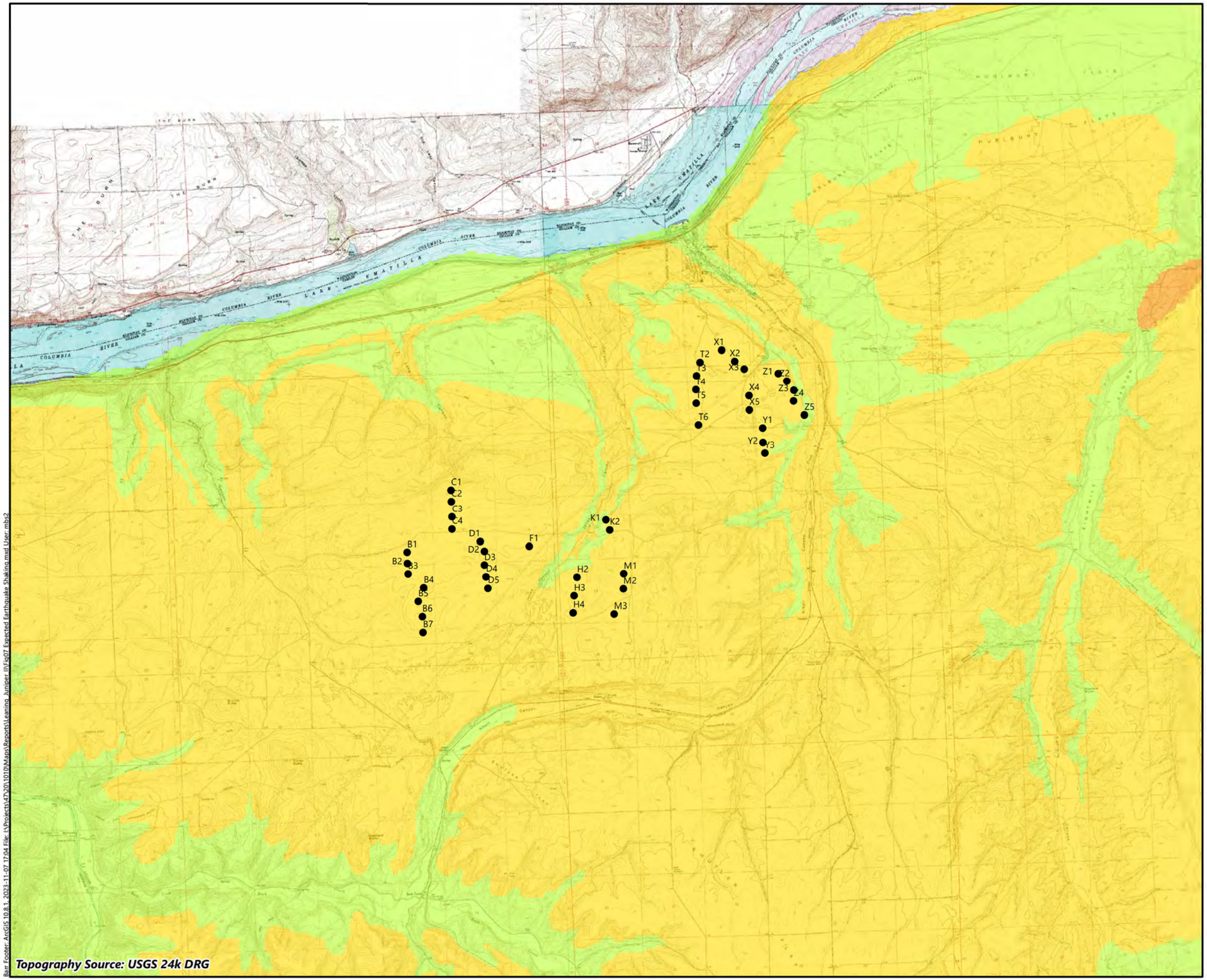
[2]Oregon Department of Geology and Mineral Industries. Oregon Geologic Data Compilation, release 7 (OGDC-7), compiled by Jon J. Franczyk, Ian P. Madin, Carlie J.M. Duda, and Jason D. McClaughry. 2020.

Miles
3 0 3

Figure 6

SEISMIC HAZARDS
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGIS 10.8.1, 2022-11-07 17:03 File: \\Projects\47\2011010\Maps\Reports\Leaning Juniper IIA\Fig06 Seismic Hazards.mxd User: mbs2



Bar Footer: ArcGIS 10.8.1, 2023-11-07 17:04 File: i:\Projects\47\20\1010\Maps\Reports\Leaning_Juniper_IIA\Fig07 Expected Earthquake Shaking.mxd User: mbr2

- Turbine Location (8/22/2023)

Expected Earthquake Shaking

- Violent
- Severe
- Very Strong
- Strong
- Moderate
- Light

These data show the strongest shaking expected to occur during an earthquake in a 500-year period. The stronger the amount of shaking, the more structural damage will occur.

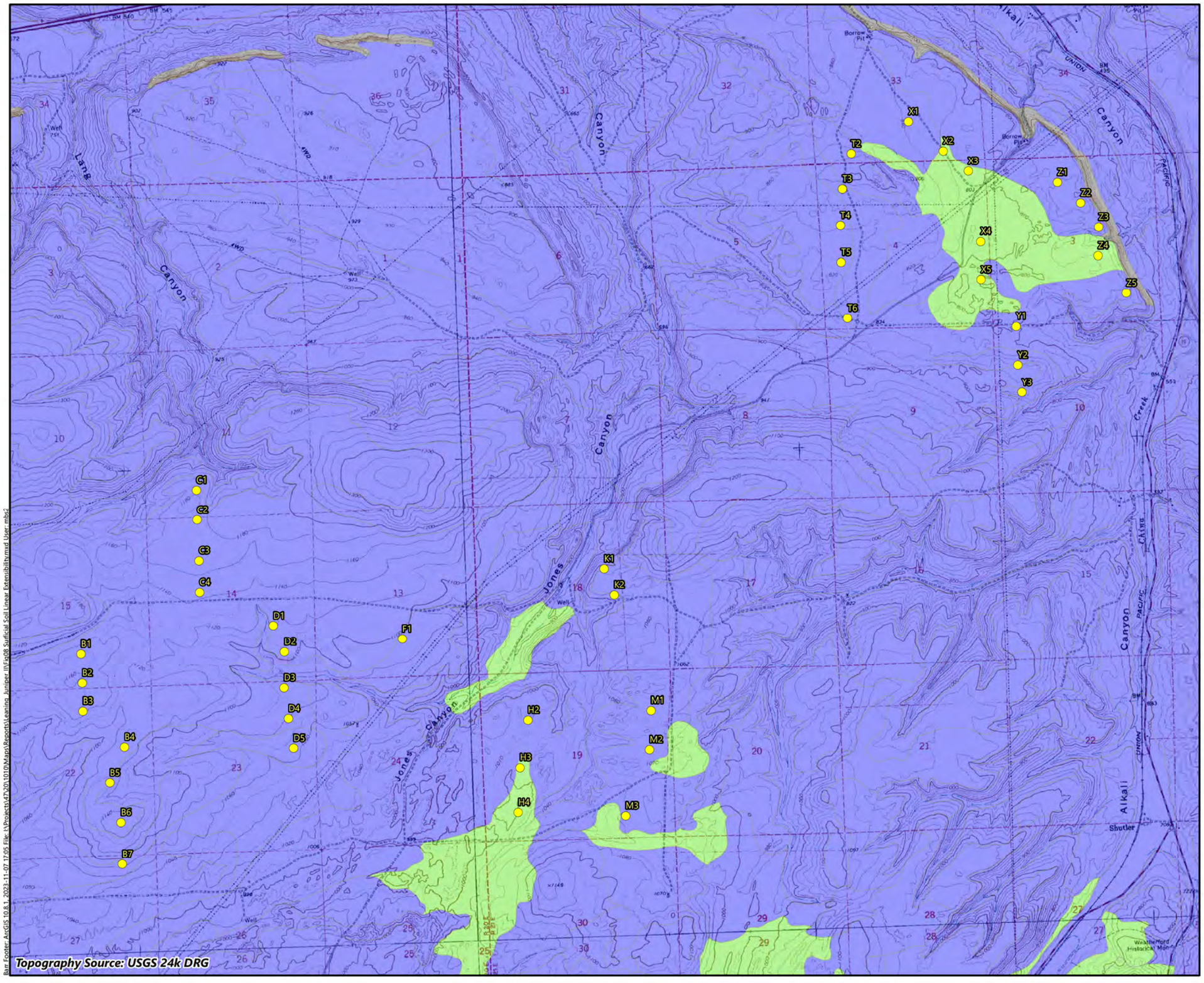
Oregon Department of Geology and Mineral Industries (DOGAMI). Oregon HazVu: Statewide Geohazards Viewer https://www.oregongeology.org/hazvu/hazards-assets.htm

Miles
1.5 0 1.5

Kilometers
2.5 0 2.5

Figure 7

EXPECTED EARTHQUAKE SHAKING
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon



Turbine Location (8/22/2023)

Surficial Soil Linear Extensibility

- Low (0 - 3)
- Moderate (3 - 6)
- Not rated or not available

Soil Survey Staff, NRCS USDA. Soil Survey Geographic (SSURGO) Database. Available online: https://sdmdataaccess.sc.egov.usda.gov Accessed 10/31/2023.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Feet

3,000 0 3,000

Meters

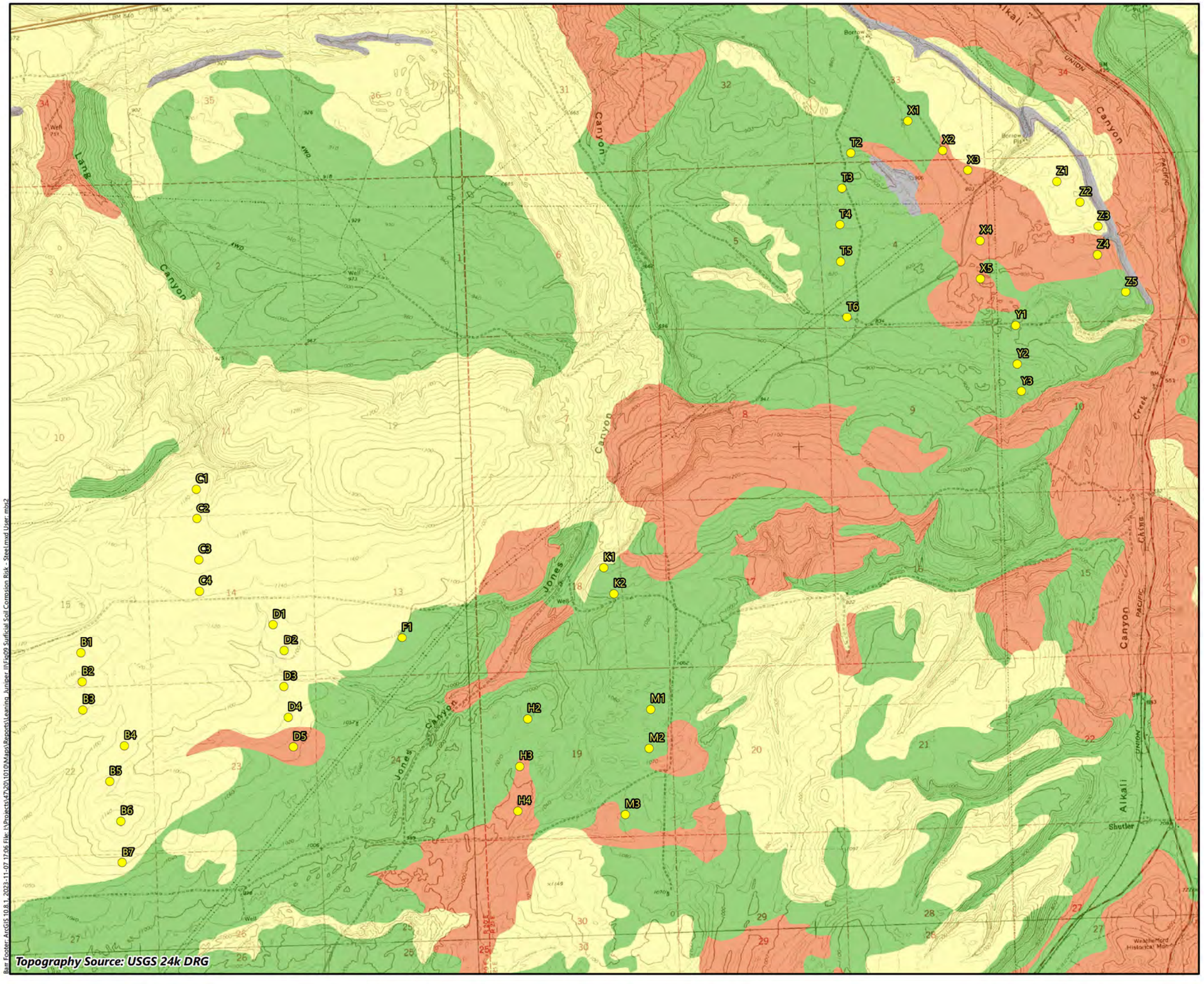
1,000 0 1,000

Figure 8

SURFICIAL SOIL LINEAR EXTENSIBILITY

Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGIS 10.8.1, 2023-11-07 17:05 File: I:\Projects\471\201\1010\Maps\Reports\Leaning Juniper IIFig08 Surficial Soil Linear Extensibility.mxd User: mbs2



Turbine Location (8/22/2023)

Surficial Soil Corrosion Risk - Steel

- Low
- Moderate
- High
- Not Rated

Soil Survey Staff, NRCS USDA. Soil Survey Geographic (SSURGO) Database. Available online: https://sdmdataaccess.sc.egov.usda.gov Accessed 10/23/2023.

Feet

3,000 0 3,000

Meters

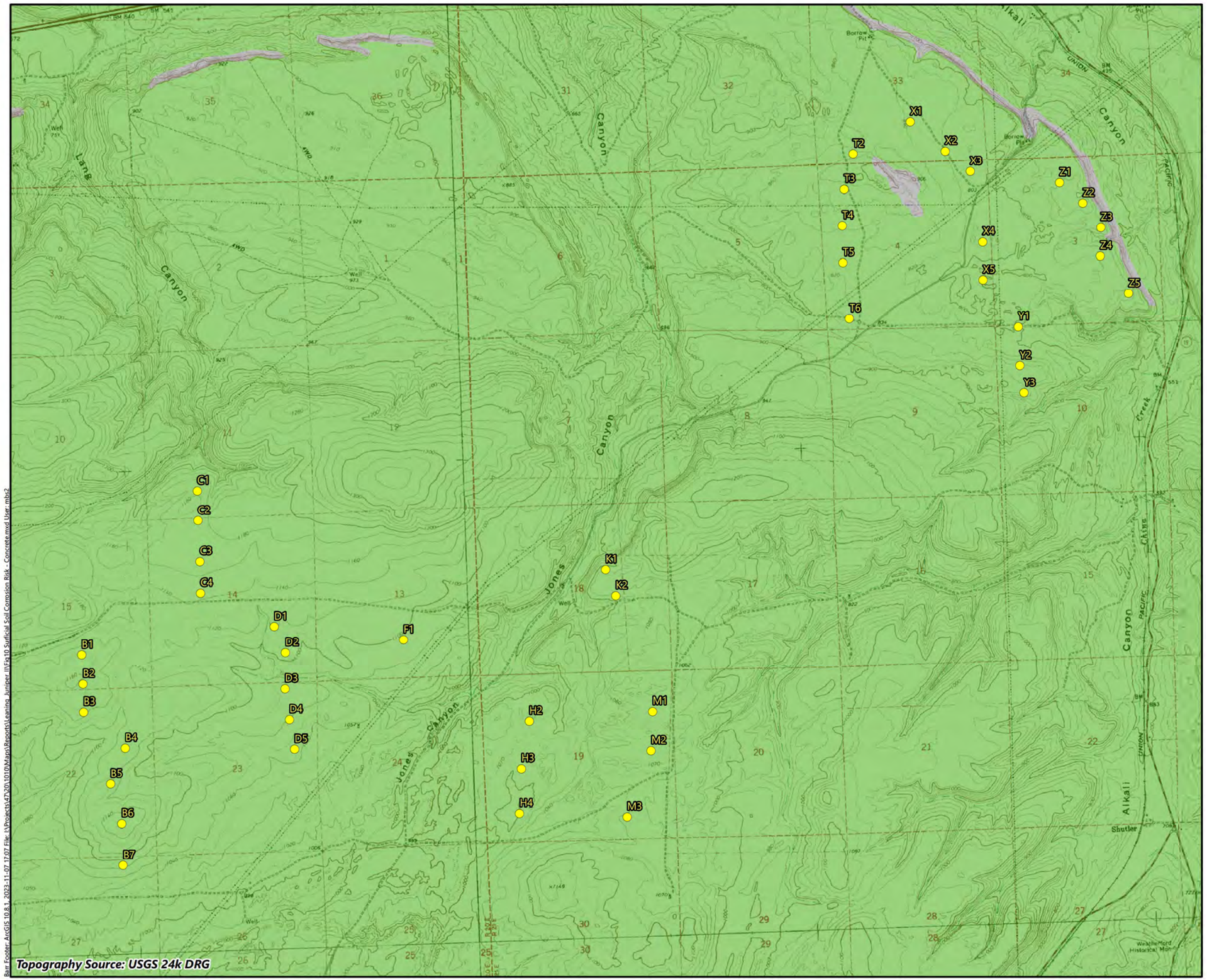
1,000 0 1,000

Figure 9

SURFICIAL SOIL CORROSION RISK - STEEL

Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Ram Foster; ArcGIS 10.8.1, 2023-11-07 17:06 File: k:\Projects\473\0\1010\Maps\Reports\Leaning Juniper IIa\Fig09 Surficial Soil Corrosion Risk - Steel.mxd User: mbs2



Turbine Location (8/22/2023)

Surficial Soil Corrosion Risk - Concrete

Low

Not Rated

Soil Survey Staff, NRCS USDA. Soil Survey Geographic (SSURGO) Database. Available online: https://sdmdataaccess.sc.egov.usda.gov Accessed 10/31/2023.

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Figure 10

SURFICIAL SOIL CORROSION RISK - CONCRETE
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Bam Foster; ArcGIS 10.8.1; 2023-11-07 17:07 File: k:\Projects\47\30\1010\Maps\Reports\Leaning Juniper IIA\Fig10 Surficial Soil Corrosion Risk - Concrete.mxd User: mbr2

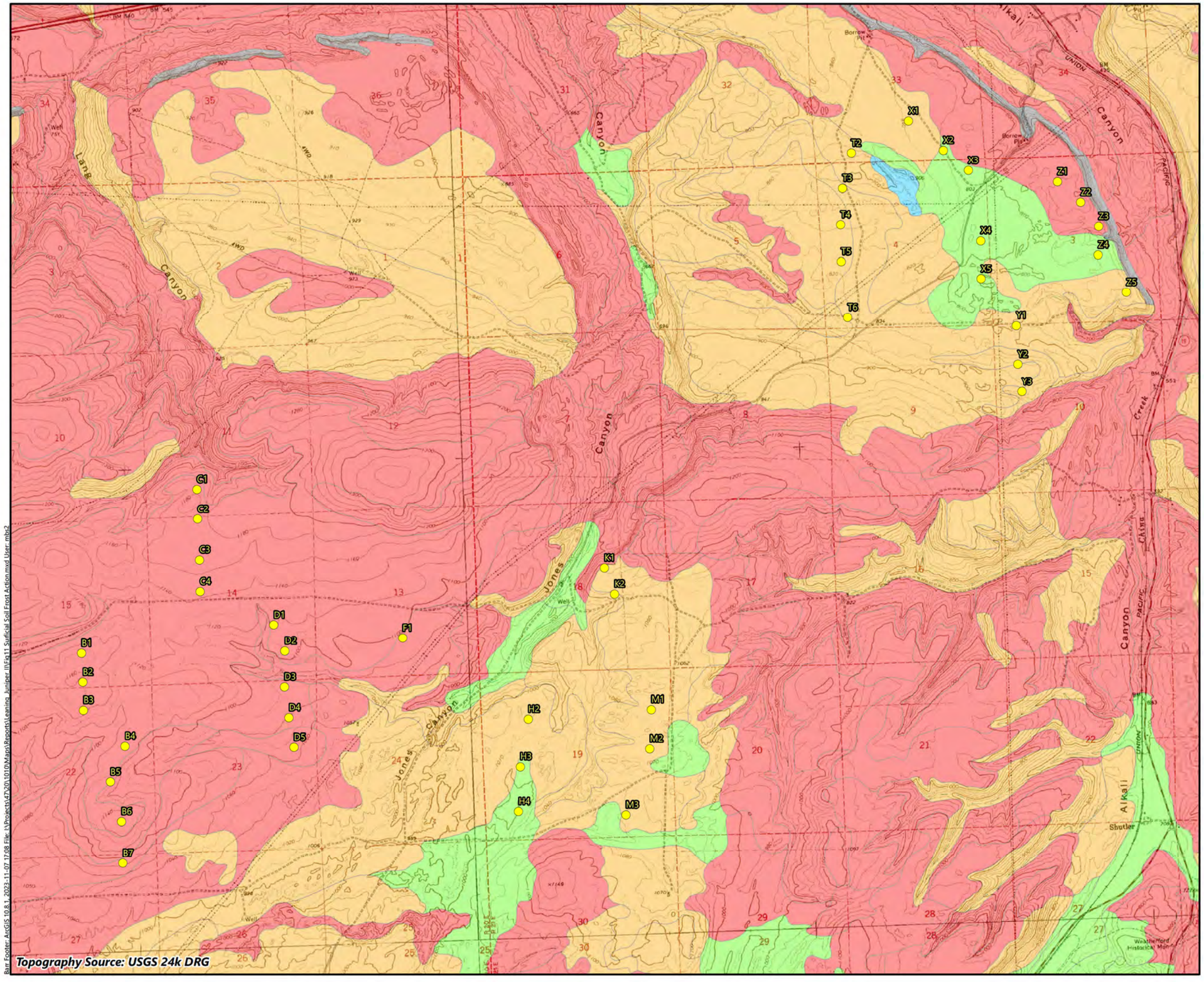
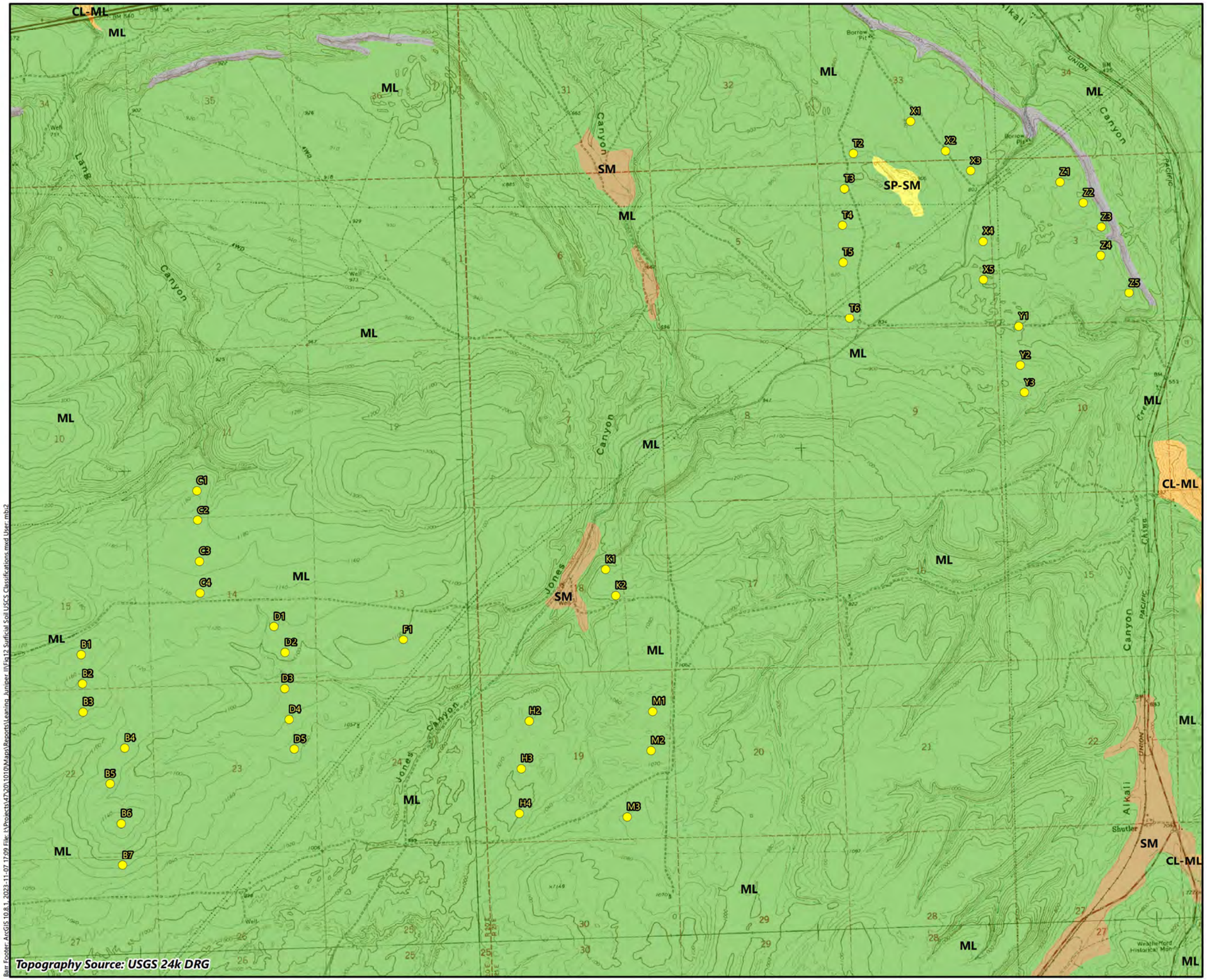


Figure 11

SURFICIAL SOIL FROST ACTION

Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Bar Footer: ArcGIS 10.8.1, 2023-11-07 17:08 File: N:\Projects\547\201010\Maps\Reports\Leaning Juniper IIa\Fig11 Surficial Soil Frost Action.mxd User: mbz2



Turbine Location (8/22/2023)

Surficial Soil USCS Classification

- SP-SM - Silty, poorly-graded sand
- SM - Silty sand
- ML - Silt
- CL-ML - Silty lean clay
- Not Classified

Soil Survey Staff, NRCS USDA. Soil Survey Geographic (SSURGO) Database. Available online: https://sdmdataaccess.sc.egov.usda.gov Accessed 10/31/2023.

Feet
3,000 0 3,000

Meters
1,000 0 1,000

Figure 12

SURFICIAL SOIL USCS CLASSIFICATIONS
Leaning Juniper IIa Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGIS 10.8.1, 2023-11-07 17:09 File: k:\Projects\47\20\1010\Maps\Reports\Leaning_Juniper_IIA\Fig12_Surficial_Soil_USCS_Classifications.mxd User: mb2

Attachment 1

Leaning Juniper 2a Slope Stability Assessment

Turbine ID	DOGAMI Landslide Susceptibility Rating	Aerial Imagery Dates	Aerial Imagery Notes (Google Earth)	LiDAR Data Review (USGS National Map Viewer)	Relevant Existing Boring Log Notes	Relevant Rock Core Photo Observations	2H:1V Buffer Met or Exceeded	Barr Desktop Screening Risk Assessment
B7	Moderate	1996 - 2020	SE slope. 7%, No indications of failures	Small mound noted at site of turbine, Data from 2020	None, gravel from 32.8' - 36.5', silt from 36.5' - 37.5'	No evidence of slickensides, Highly fractured 37.5' - 41'	Yes	Low
C1	Moderate	1996 - 2020	Water drainage to the east, appears stable	Water drainages to the north and east, no failures, ridge to the north east	N=22 at 1.5', Gravel from 32.5' -38.5', Silt from 38.5' - 49'	No evidence of slickensides	Yes	Low
D1	Moderate	1996 - 2020	Stream to the west visible in 2019 image	Slightly steep slope to the west in stream, 192'	N==20 at 12.5', N=35 at 30', Gravel from 15' to 31'	No evidence of slickensides	Yes	Low
D3	Moderate	1996 - 2020	SE slope. 2.2%, No indications of failures	Small mound noted at site of turbine, Data from 2020	N=19 at 10', Gravel from 5' - 30'	No evidence of slickensides	Yes	Low
K1	High	1996 - 2020	1996 -2015: Erosion to the North west of turbine looks largely unchanged. 2019: Road cut appears to be attempted.	Steep slope to the north west, Fairly flat to the east and south east	Gravel from 10' - 20'	No Core	Yes	Low
K2	Moderate	1996 - 2020	1996 -2006: Steep stable hill to the south west. Appears to have been resloped during construction of turbine.	Fairly flat	N=20 at 10', N=9 at 12.5'. Gravel with silt from 15' - 39.5'	No evidence of slickensides	Yes	Low
T2	Moderate	1996 - 2020	Rolling hills, North west dipping hill	Surrounding area appears to be hummocky	Sand and gravel from surface to bedrock at 25'	No evidence of slickensides	Yes	Low
T6	Moderate	1996 - 2020	Fairly flay area	Surrounding area appears to be hummocky, historic stream bed to the south (400' SW), north of access road	N=16 at 25'. Gravel from surface to 25', silt from 25' to 31'	No evidence of slickensides	Yes	Low
Y2	Moderate	1996 - 2020	Moderate slope 800' north, appears to be stable, Collection cable trench seen on imagery	Area appears to be fairly flat, moderate slope to the north, no failures noted	Silt and gravel from surface to 58', N=12 at 20', N=13 at 25', N=31 at 30', N=15 at 35', N=11 at 40', N=27 at 45'	No evidence of slickensides	Yes	Low
Y3	High	1996 - 2020	Steep slope to the south, possible historic slope failure to the south east prior to 1996, appears to be stable	Steep slope to the south, upper layer of rock appears to be resistant	Gravel from surface to 17' with 50/ and WH. Silt from 17' to 53', N=36 at 25', N=37 at 30', N=39 at 35. Poorly graded sand from 53' to 60'	No Core	Yes	Low
Z2	Moderate	1996 - 2020	Low area to the south (minimal risk), Steep hill 250' east appears stable, resistant rock layer approximately 40' BGS, possible failure between Z-2 and Z-3 seen in 2005 image	Low area to south visible, steep hill to the east, possible failure between Z-2 and Z-3.	Gravel with silt from surface to 35'	No evidence of slickensides, 35' - 45' Moderately decomposed	Yes	Low
Z3	High	1996 - 2020	Flat area below turbine to the south east does not appear to be a failure, Steep hill on south east and east side, road cut the south, possible failure between Z-2 and Z-3 seen in 2005 image	Flat area below turbine to south east, resistant rock layer below flat area, possible failure between Z-2 and Z-3. Road cut the south appears stable	Gravel from surface to 24', silt from 24' to 32'.	No Core	Yes	Low
Z4	Moderate	1996 - 2020	Steep hill to the east, small failures visible on cliff face, likely not a risk to turbine, No failures near turbine.	Low area to the north and east, South and west appear flat, Possible failure to the east. Smaller failures deeper in valley may be newer but not a threat	Gravel from surface to 44'	No evidence of slickensides, Moderately decomposed	Yes	Low
Z5	Moderate	1996 - 2020	Steep hill to the south and east, turbine appears to be in a stable area	Possible failure to the south of turbine along valley ridge, road cut to the south west, flat spot (resistant rock) below the turbine to the south east	Gravel from surface to 19', Silt from 19' to 30'	No Core	Yes	Low

Attachment 4c
Foundation Field Assessment Summary Report

Leaning Juniper 2A Wind Project

Wind Turbine Foundation Repower Field Assessment Summary Report

Prepared for
Avangrid Renewables, LLC

September 2023

Draft

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435-4803
Phone: 952.832.2600
Fax: 952.832.2601

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List of Appendices

Appendix A Above Grade Visual Inspection Photo and Note Log

Certifications

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Oregon.

ISSUED FOR DRAFT REVIEW

Joel Bahma, P.E.
License Number 75488PE

September 21, 2023
Date

In addition to the Engineer of Record, the professional staff involved in the preparation of this report includes the following:

- Hannah Bruce, Barr Engineering Co.
- Wes Karras, PE (Minnesota), Barr Engineering Co.

1.0 Executive Summary

Under authorization from Avangrid Renewables, LLC (Avangrid), Barr Engineering Co. (Barr) performed a field evaluation at the Leaning Juniper 2A Wind Farm located near Arlington, Oregon. Avangrid is considering repowering the existing S88 2.1 MW wind turbine generators (WTGs) at Leaning Juniper 2A with GE2.5-116 turbine models. The Barr foundation repowering evaluation report recommended a field assessment be completed.

The tasks of the field evaluation that were completed are as follows:

1. Above grade visual inspection of 43 of the foundations at the site under consideration for repower. Foundation M3 was not inspected due to a turbine fire and associated safety concerns and foundation Z2 was decommissioned.

The following items summarize the observations made during the field evaluation activities:

1. In the grout, shrinkage cracks with maximum widths ranging between 0.008" and 0.031" were observed at 31 of the inspected foundations detailed further in Table 3-1.
2. In the pedestal, circumferential and radial cracks with maximum widths ranging between 0.008" and 0.028" were observed at 33 of the inspected foundations detailed further in Table 3-2.
3. Damaged or missing anchor bolt covers were noted at 23 of the inspected foundations detailed further in Table 3-3.
4. Low backfill was observed at all inspected foundations except T6 and X3 where the backfill was sufficient.

The following recommendations are made based on the field evaluation results:

1. Fill cracks in the pedestal and grout of widths 0.016" and greater with an epoxy type product to prevent water intrusion and degradation.
2. Repair/replace all broken and/or missing anchor bolt covers.
3. Restore backfill in accordance with original foundation drawings and specifications at noted foundations.

The information presented within this field assessment report should be utilized in combination with the wind turbine foundation evaluation report completed by Barr.

2.0 Introduction

Avangrid is considering the replacement of the existing wind turbines with new models at Leaning Juniper 2A located near Arlington, Oregon. Table 2-1 below lists the project location, original foundation designer, the existing wind turbine model, and the new wind turbine model proposed for Leaning Juniper 2A.

Table 2-1 Project, Location, Existing Turbine, Original Designer, and New Turbine

Project Name	State	Original Foundation Designer	Existing Turbine	Repower Turbine
Leaning Juniper 2A	Oregon	Barr	S88 2.1 MW 79.2mHH	GE2.5-116 80m HH

The field assessment is part of a foundation evaluation being completed by Barr regarding the wind turbine repowering project at Leaning Juniper 2A. The inspections are intended to determine the current condition of the pedestal and base flange grout based on recommendations from the foundation evaluation report previously completed by Barr.

3.0 Above Grade Visual Inspection

Barr performed an above grade visual inspection of the exposed portions of the foundations including backfill, concrete pedestal, grout bed, and anchor bolt covers of 43 of the foundations at the site under consideration for repower. Foundation M3 was not inspected due to a turbine fire and associated safety concerns and foundation Z2 was decommissioned.

Several specific observations are detailed in the following figures.

Appendix A contains a complete photo and note log of the above grade visual inspections. Crack widths were measured using an ACI 224R-01 compliant crack-width comparator.

Figure 3-1 shows the typical above grade portion of the foundations.

Figure 3-1 Typical foundation

Figure 3-2 below shows the typical low backfill condition noted at all Leaning Juniper 2A foundations except T6 and X3 where the backfill was sufficient. Backfill was measured at each of the cardinal directions of the pedestal and compared to the 6" maximum protrusion shown on the original foundation drawings for Leaning Juniper 2A.

Figure 3-2 Typical low backfill condition

Figure 3-3 below shows an example of grout shrinkage cracks observed ranging from 0.008" to 0.031" in width. Foundations with cracking 0.016" and wider are listed in Table 3-1.

Figure 3-3 Typical grout shrinkage cracking

Table 3-1 Foundations with grout shrinkage cracking 0.016" or wider noted

Turbine Number									
B2	B6	C1	C2	D1	D2	D5	F1	H2	H3
H4	K1	K2	M1	M2	T2	T3	T4	T5	T6
X1	X2	X3	X4	X5	Y1	Y3	Z1	Z3	Z4
Z5	-	-	-	-	-	-	-	-	-

Figure 3-4 below shows an example of pedestal circumferential cracking with maximum crack widths noted ranging from 0.008" to 0.028" located typically 3" to 10" from the tower base flange. Figure 3-5 below shows an example of pedestal radial cracking with maximum widths ranging from 0.008" to 0.028" that was also typically noted. Radial cracks were observed to extend from the edge of the pedestal to the circumferential cracking or to the base flange grout. Foundations with pedestal cracking 0.016" and wider are listed in Table 3-2 below.

Figure 3-4 Typical pedestal circumferential cracking

Figure 3-5 Typical radial cracking

Table 3-2 Foundations with pedestal cracking 0.016" and greater noted

Turbine Numbers									
B1	B2	B5	B6	C1	C2	C3	C4	D1	D2
D3	D5	F1	H2	H3	H4	K1	K2	M1	M2
T3	T4	T6	X1	X2	X3	X4	Y2	Y3	Z1
Z3	Z4	Z5	-	-	-	-	-	-	-

Sealant was not typically observed between the base flange and the grout except at foundation B5 as shown in Figure 3-6 below that was observed to be in good condition. The grout was also noted to have been repaired or replaced at B5 as seen in the figure below, this was the only foundation noted with grout repairs.

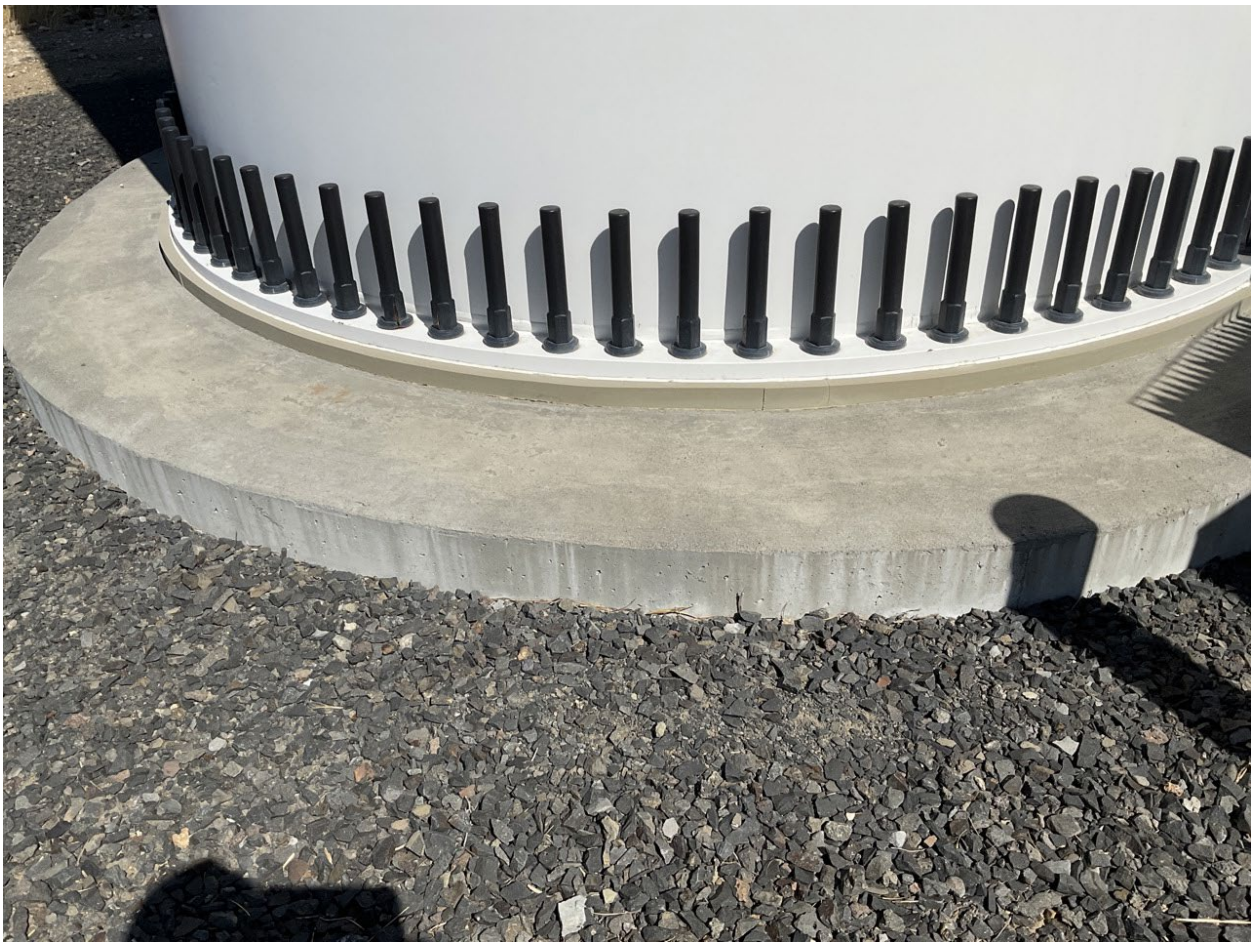


Figure 3-6 Sealant condition and repaired grout foundation B5

Figure 3-7 below shows an example of damaged anchor bolt covers noted at the foundations listed in Table 3-3.

Figure 3-7 Typical damaged anchor bolt covers

Table 3-3 Foundations with damaged anchor bolt covers noted

Turbine Numbers									
B2	B3	B4	B5	B6	B7	C2	D1	D3	F1
H4	T2	T3	T4	X2	X3	X4	X5	Y1	Y2
Y3	Z3	Z4	-	-	-	-	-	-	-

4.0 Conclusions and Recommendations

The following items summarize the observations made during the field evaluation activities:

1. In the grout, shrinkage cracks with maximum widths ranging between 0.008" and 0.031" were observed at 31 of the inspected foundations detailed further in Table 3-1.
2. In the pedestal, circumferential and radial cracks with maximum widths ranging between 0.008" and 0.028" were observed at 33 of the inspected foundations detailed further in Table 3-2.
3. Damaged or missing anchor bolt covers were noted at 23 of the inspected foundations detailed further in Table 3-3.
4. Low backfill was observed at all inspected foundations except T6 and X3 where the backfill was sufficient.

The following recommendations are made based on the field evaluation results:

1. Fill cracks in the pedestal and grout of widths 0.016" and greater with an epoxy type product to prevent water intrusion and degradation.
2. Repair/replace all broken and/or missing anchor bolt covers.
3. Restore backfill in accordance with original foundation drawings and specifications at noted foundations.

The information presented within this field assessment report should be utilized in combination with the wind turbine foundation evaluation report completed by Barr.

5.0 Limitations

This report contains opinions made by Barr, using its professional judgement and reasonable care. Use or reliance upon this report is subject to the following conditions:

1. The report being read in the context of and subject to the terms of the agreement between Barr and Avangrid, including the methodologies, procedures, techniques, assumptions, and other relevant terms or conditions that were specified or agreed therein.

2. The report being read as a whole, with sections or parts hereof read or relied upon in context.

3. The conclusions and opinions expressed in this report are based on a review of the foundations inspected as well as our education, training, and experience as licensed professional engineers.

4. These conclusions and opinions are based on the information that has been provided to us at this time and may be modified or supplemented if new information becomes available.

Appendix A

Above Grade Visual Inspection Photo and Note Log

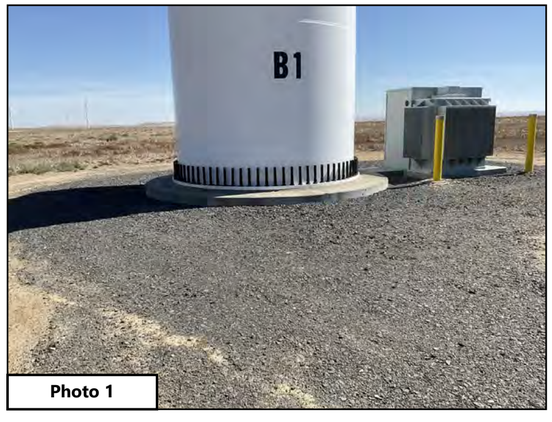


Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

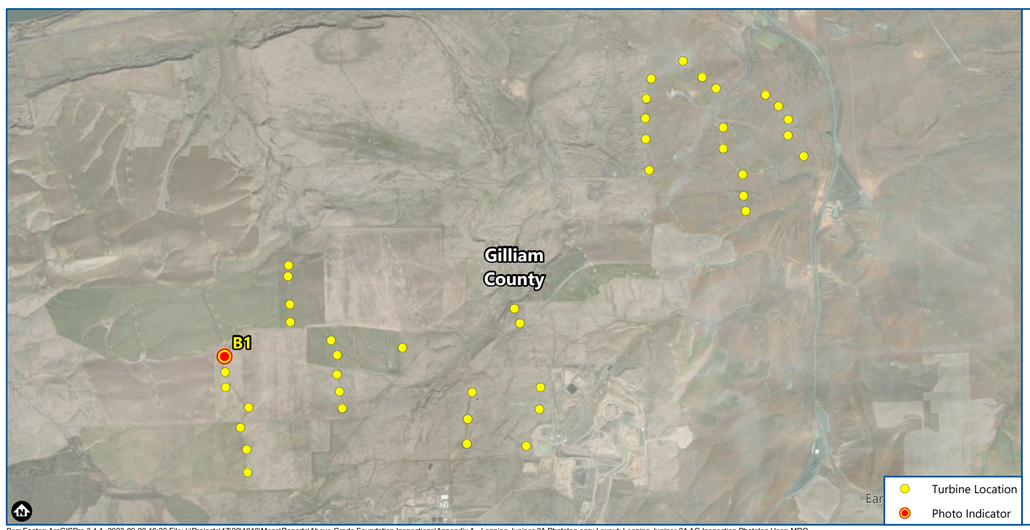
Photo 8

Photo 9

Photo 10

Photo 11

Photo 12



Name: B1

Backfill Condition: Not Good
Low backfill on North side.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Shrinkage Cracking
Shrinkage cracks with efflorescence observed around grout bed. Crack spacing is 2 to 12 inches OC. Max crack width is 0.008in.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No missing or damaged anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards circumferential crack and tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 5″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 6″

TURBINE B1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGISPro 3.1.1, 2023-09-20 16:22 File: I:\Projects\47\20\1010\Maps\Reports\Above Grade Foundation Inspections\Appendix A - Leaning Juniper 2A Photolog.aprx Layout: Leaning Juniper 2A AG Inspection Photolog User: MRQ

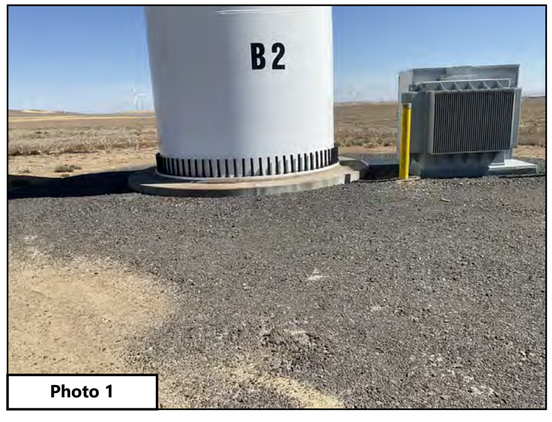


Photo 1

Photo 2

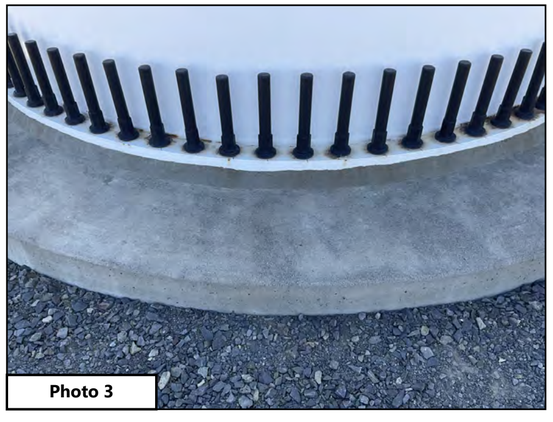


Photo 3

Photo 4

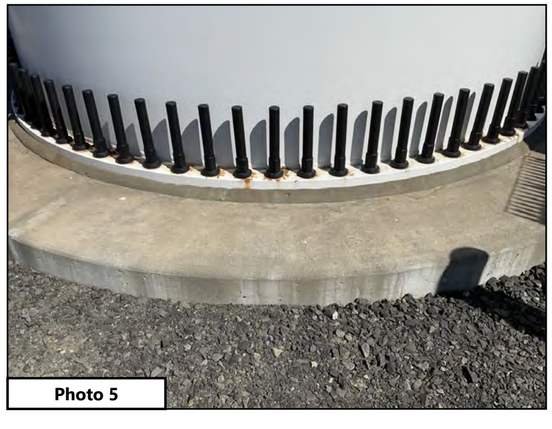


Photo 5

Photo 6

Photo 7

Photo 8

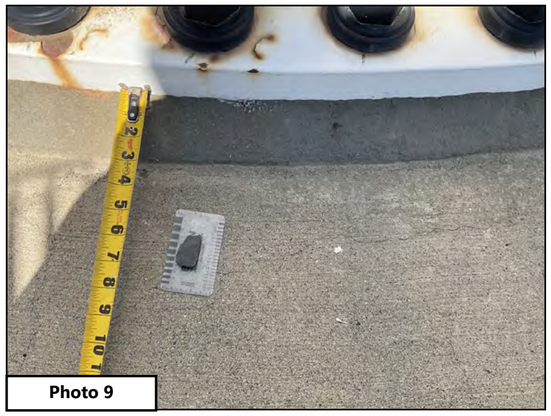
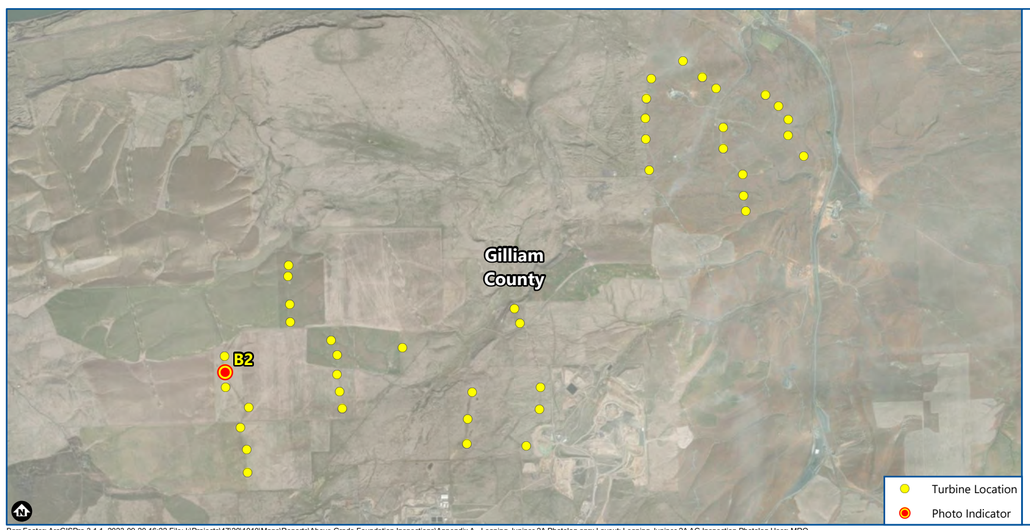


Photo 9

Photo 10

Photo 11

Photo 12



Name: B2

Backfill Condition: Not Good
Low backfill on East and South sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 5 to 8 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed. Max crack width is 0.028in. Crack spacing is 6 to 24 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Two anchor bolt covers with holes in base.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards circumferential crack and tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 7″

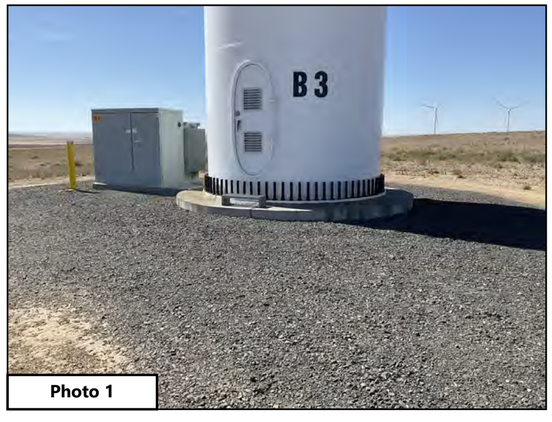
Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 6″

TURBINE B2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

Barr Footer: ArcGISPro 3.1.1, 2023-09-20 16:22 File: I:\Projects\47\20\1010\Maps\Reports\Above Grade Foundation Inspections\Appendix A - Leaning Juniper 2A Photolog.aprx Layout: Leaning Juniper 2A AG Inspection Photolog User: MRQ



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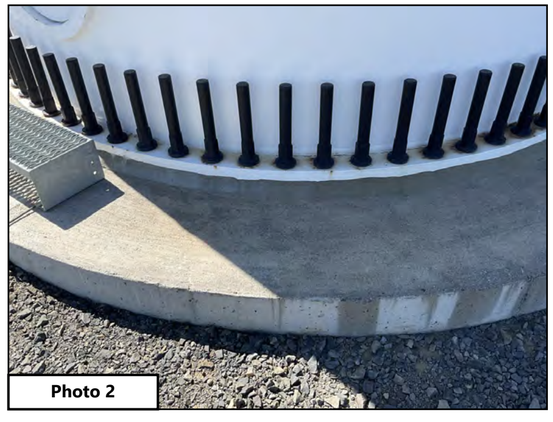
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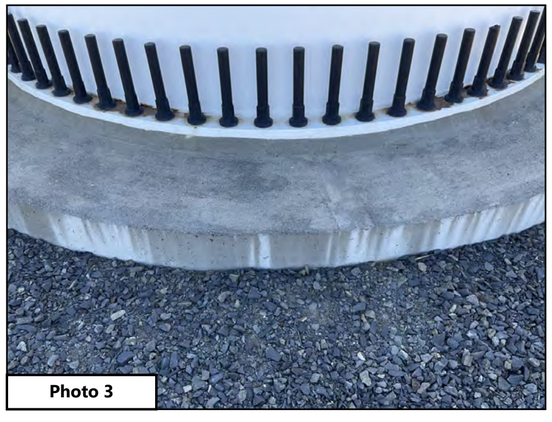
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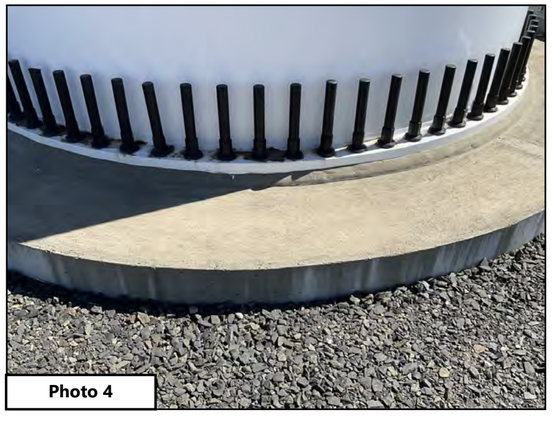
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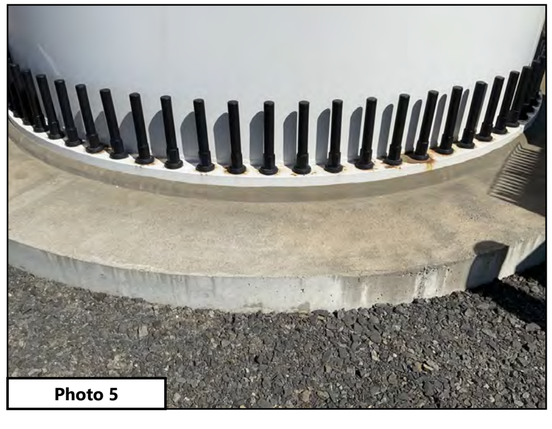
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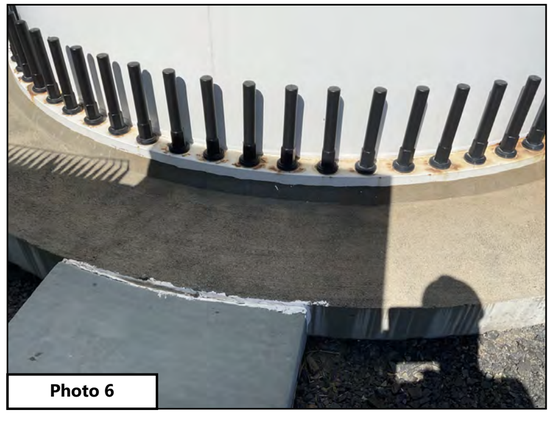
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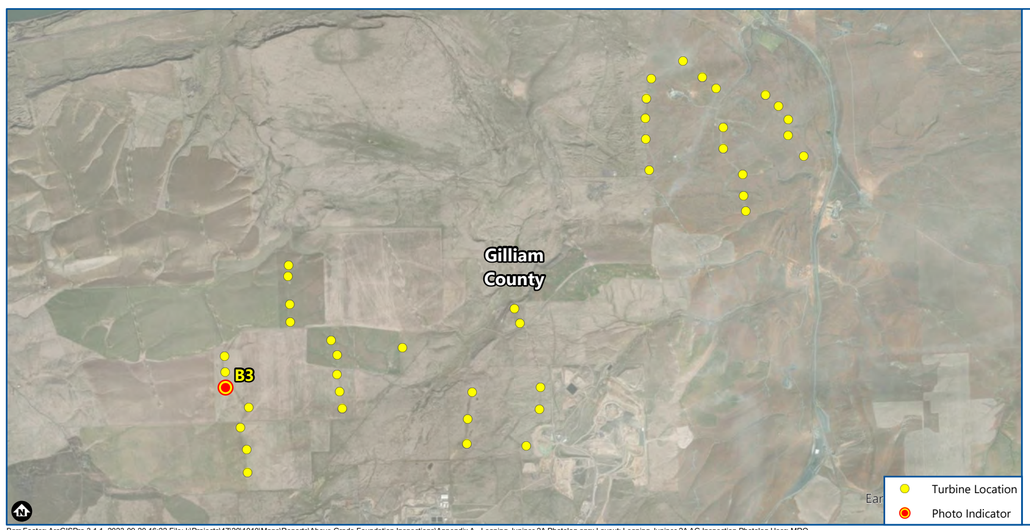

Name: B3

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal. Crack is 5 to 8 inches from tower flange. Max crack width is 0.008in.

Grout Condition: Shrinkage Cracking
Shrinkage cracks observed around grout bed with efflorescence. Max crack width is 0.008in. Crack spacing is 2 to 24 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
One anchor bolt cover with hole in base.

Additional Notes: Radial cracks observed around pedestal that extend towards tower flange. Max crack width is 0.012in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE B3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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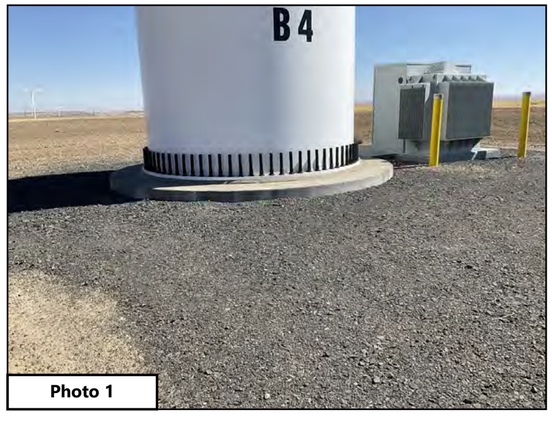

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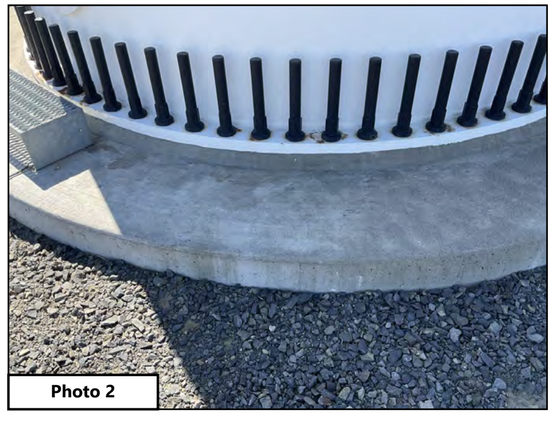
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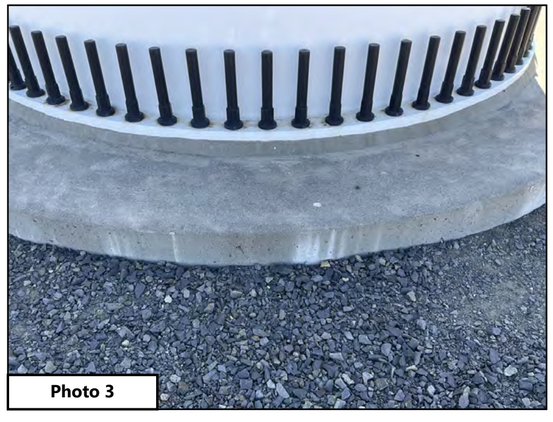
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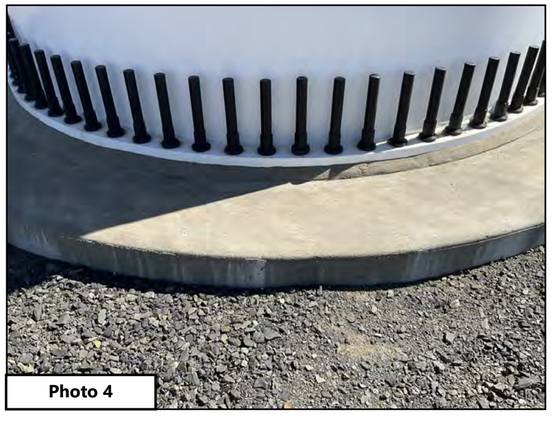
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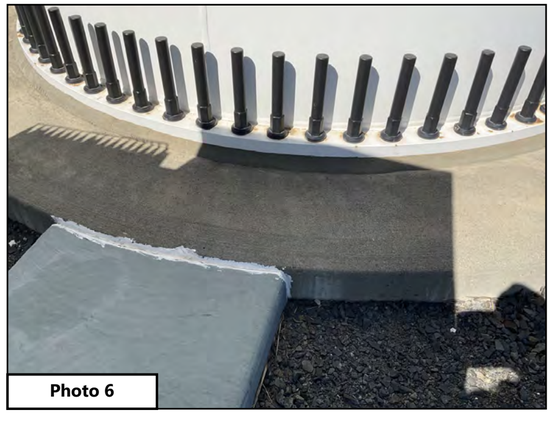
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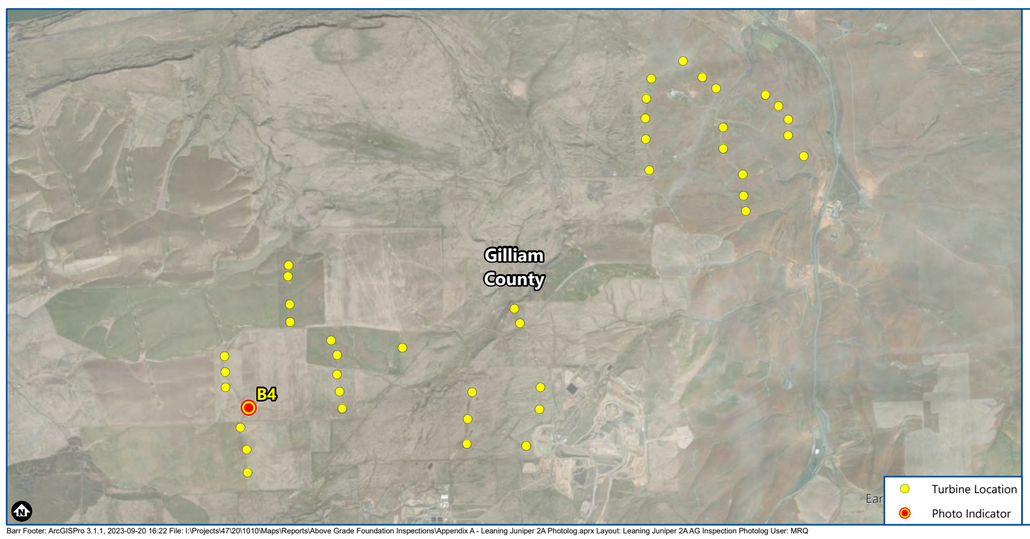

Name: B4

Backfill Condition: Not Good
Low backfill on North side.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 3 to 7 inches from tower flange. Max crack width is 0.012in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to tower flange. Max crack width is 0.008in.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Thirteen anchor bolt covers with holes in base.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards tower flange. Max crack width is 0.012in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7

TURBINE B4
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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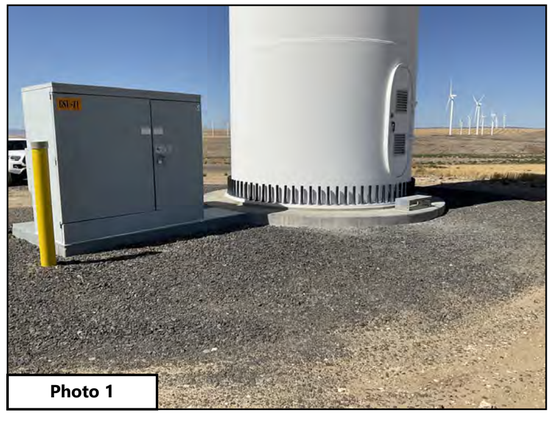
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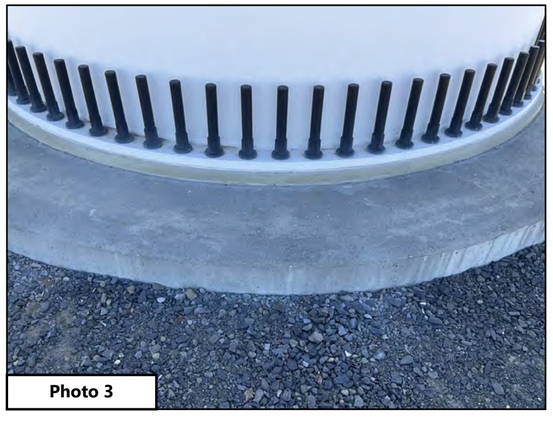
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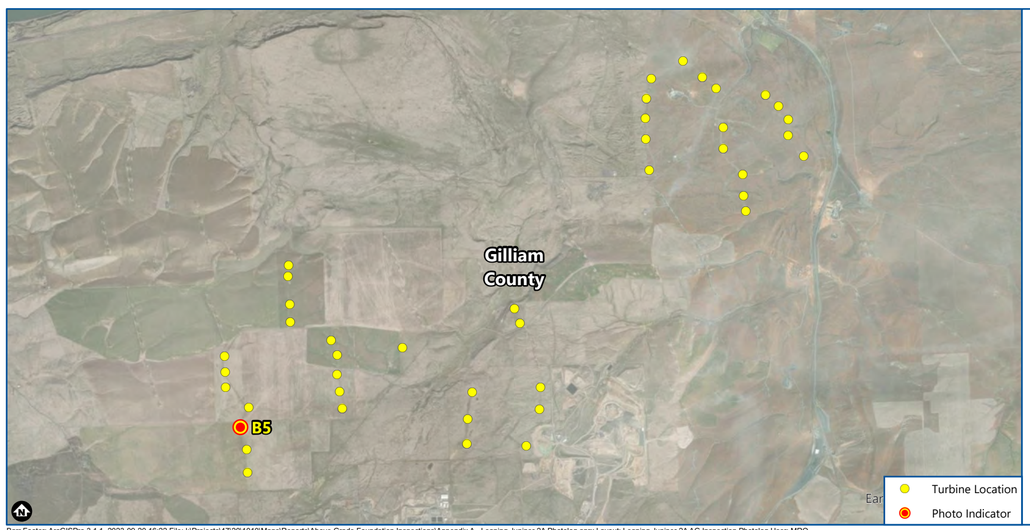

Name: B5

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 4 to 8 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Good
Epoxy grout.

Sealant Condition: Good
Sealant in place with some gaps between sealant and tower flange observed on North and South sides of the tower.

Anchor Bolt Cover Condition: Damaged
Eleven anchor bolt covers with cracks or holes in the base.

Additional Notes: Radial cracks observed around pedestal that extend from pedestal edge towards circumferential crack. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE B5
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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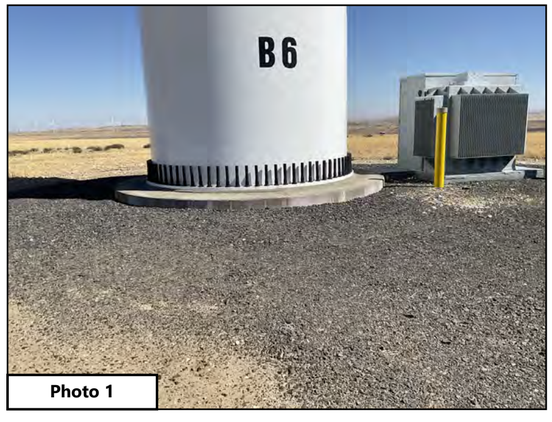

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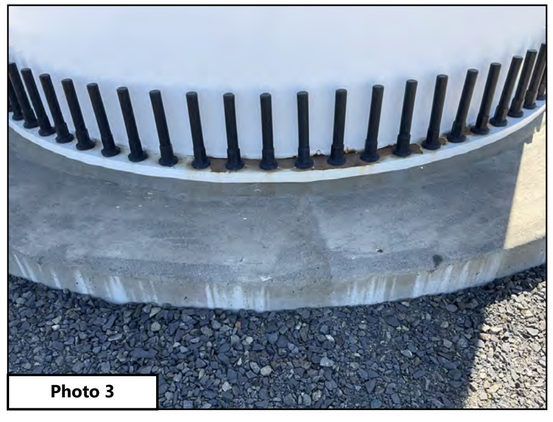
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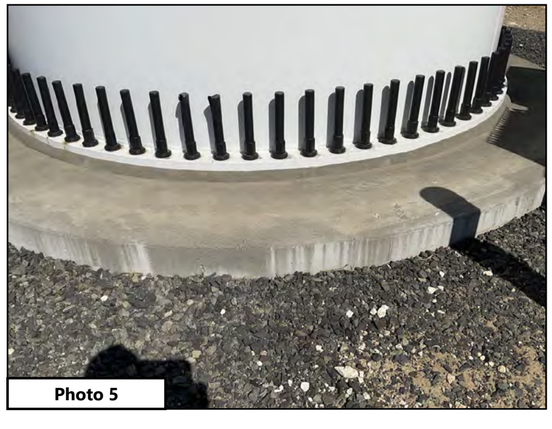
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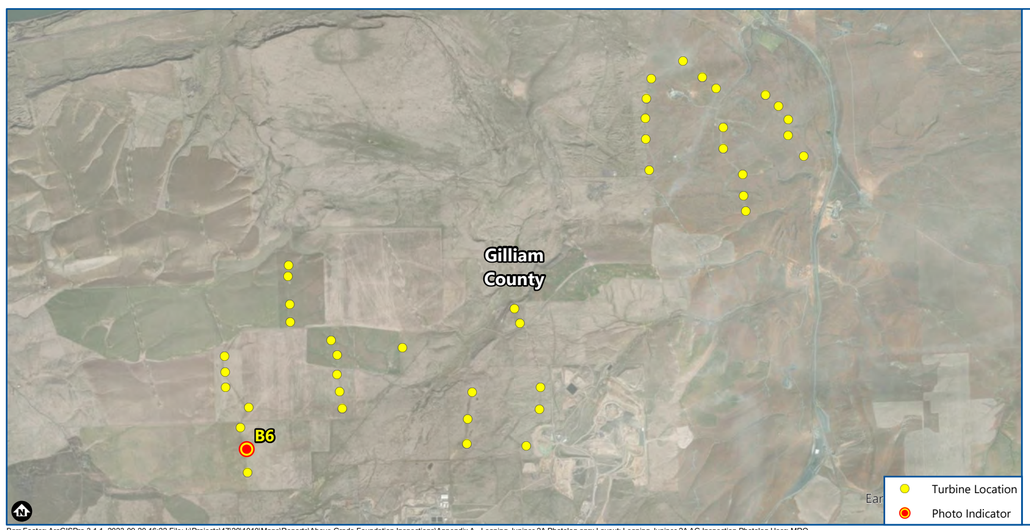

Name: B6

Backfill Condition: Not Good
Low backfill on South and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 3 to 7 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack size is 0.024in. Crack spacing is 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Nine anchor bolt covers with holes or cracks.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards circumferential crack. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE B6
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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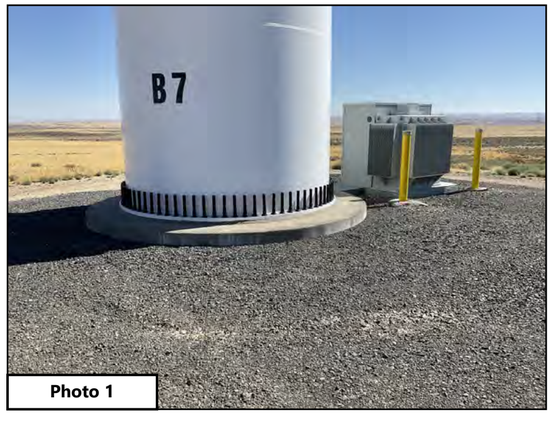

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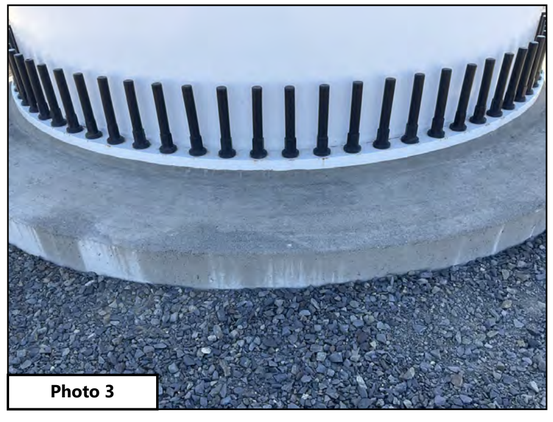
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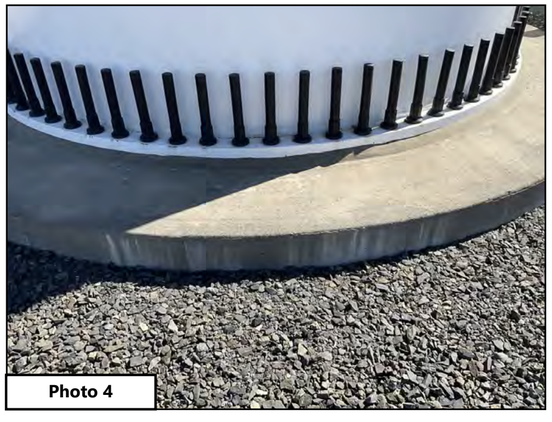
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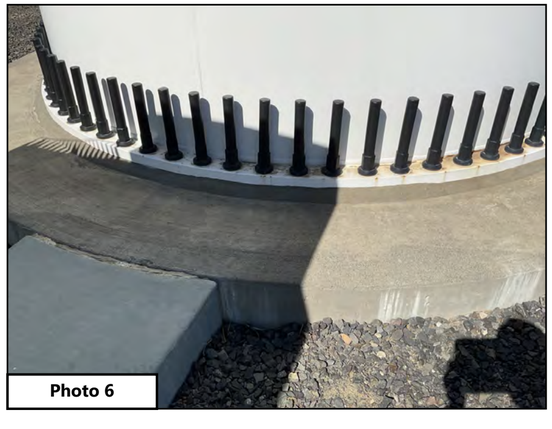
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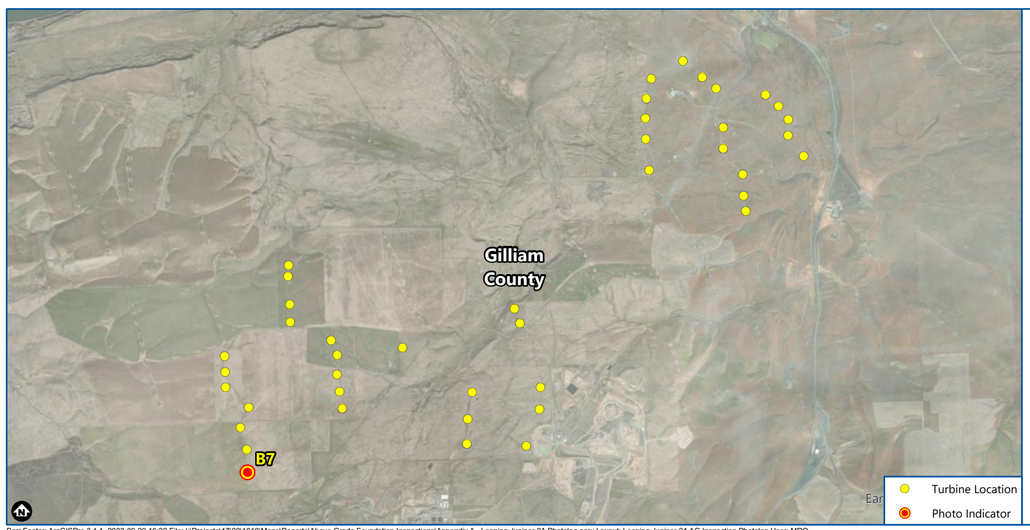

Name: B7

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around North, East, and South sides of pedestal located 3 to 7 inches from flange. Max crack width is 0.012in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to tower flange. Max crack size is 0.008in. Crack spacing is 4 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
One anchor bolt cover with a crack and hole in top.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards tower flange. Max crack width is 0.012in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 8″

TURBINE B7
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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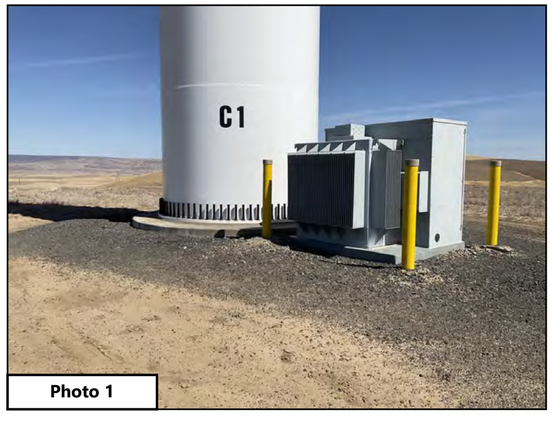

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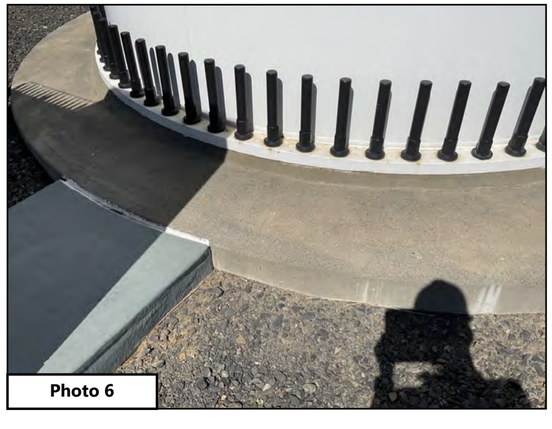
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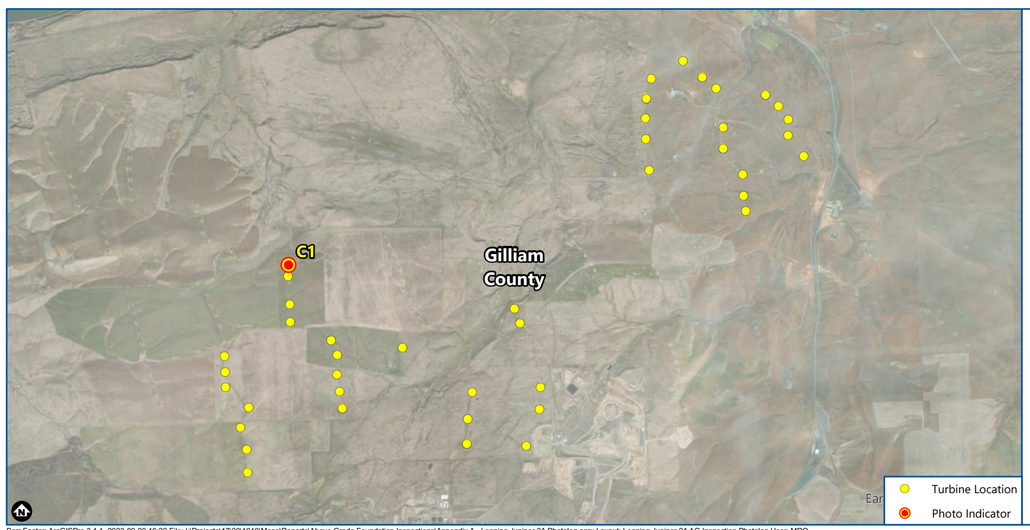

Name: C1

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to8 inches from tower flange. Max crack width is 0.024in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to flange. Max crack width is 0.016in. Cracks are spaced 6 to 36 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal from pedestal edge towards circumferential crack. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE C1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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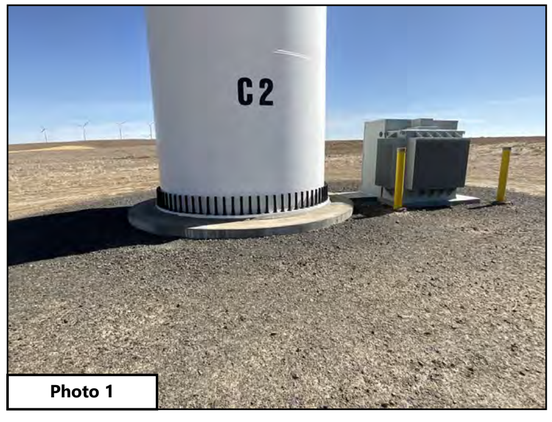

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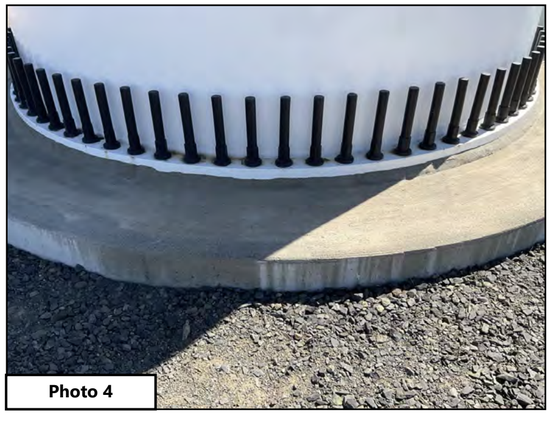
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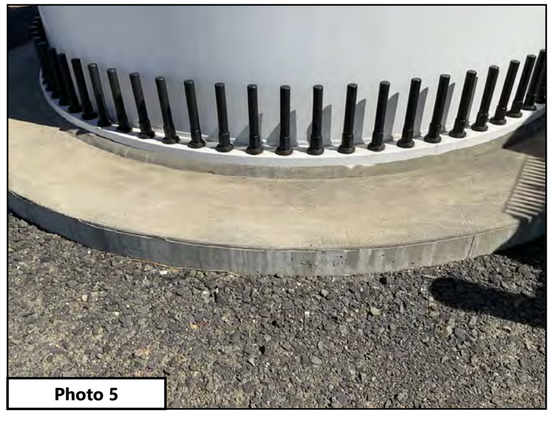
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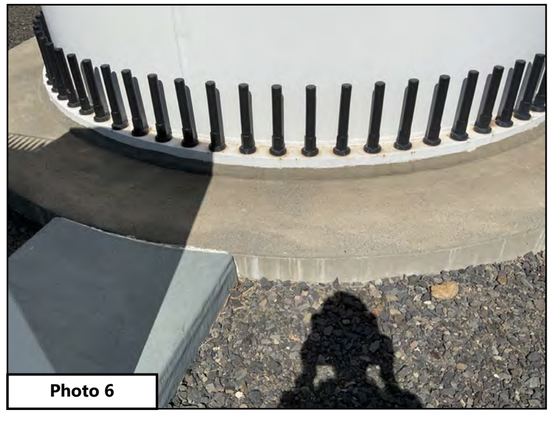
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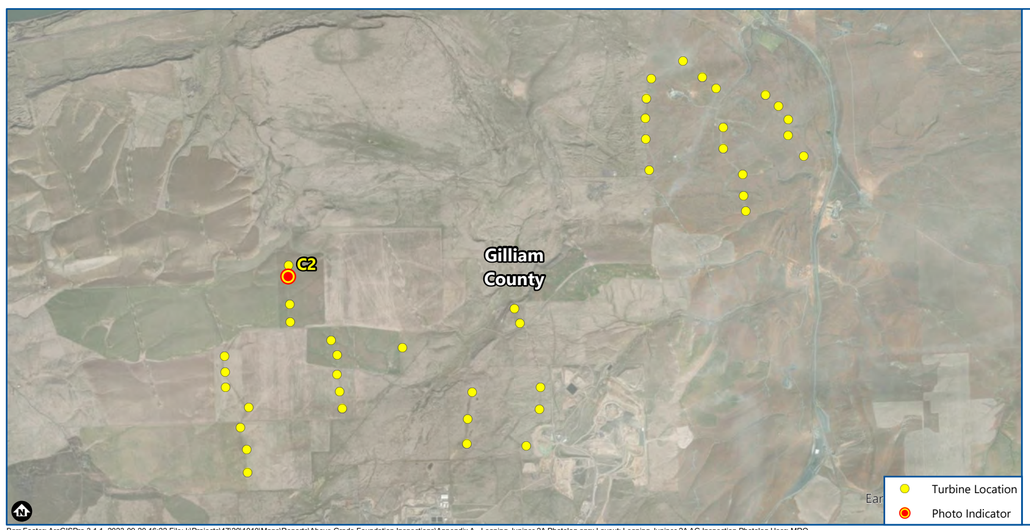

Name: C2

Backfill Condition: Not Good
Low backfill on North and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 5 to 8 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed that extend from pedestal to flange. Max width is 0.016in. Cracks are spaced 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
One anchor bolt cover has a hole in the base.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards tower flange. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE C2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Avangrid Renewables, LLC
Gilliam County, Oregon

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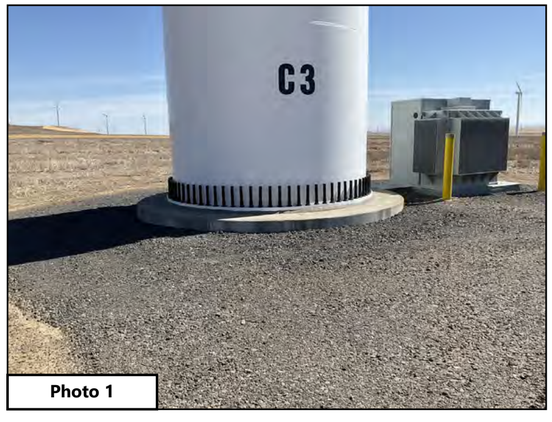

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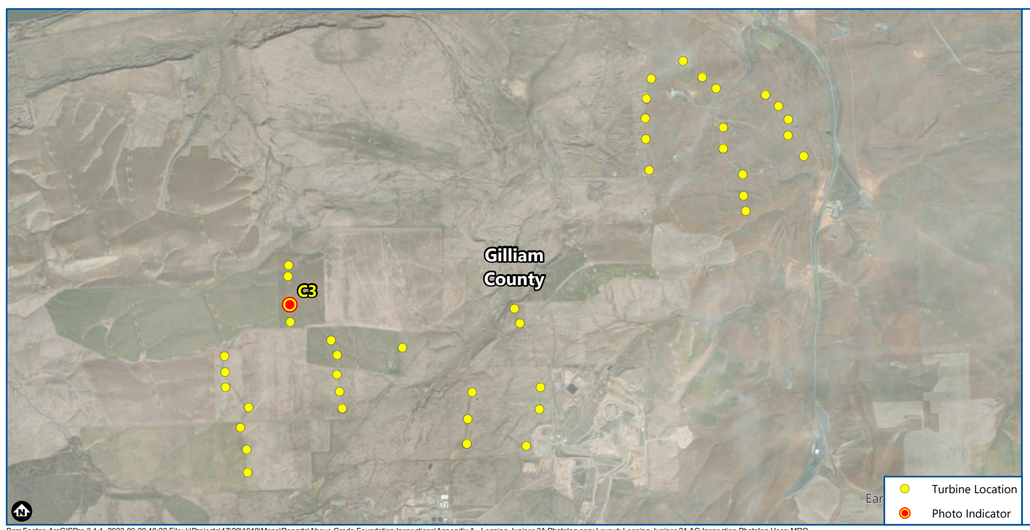

Name: C3

Backfill Condition: Not Good
Low backfill on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 9 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to tower flange.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards circumferential crack. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE C3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Avangrid Renewables, LLC
Gilliam County, Oregon

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Photo 1

Photo 2

Photo 3

Photo 4

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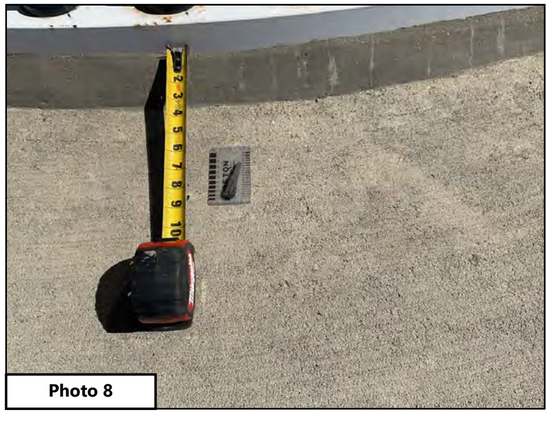
Photo 7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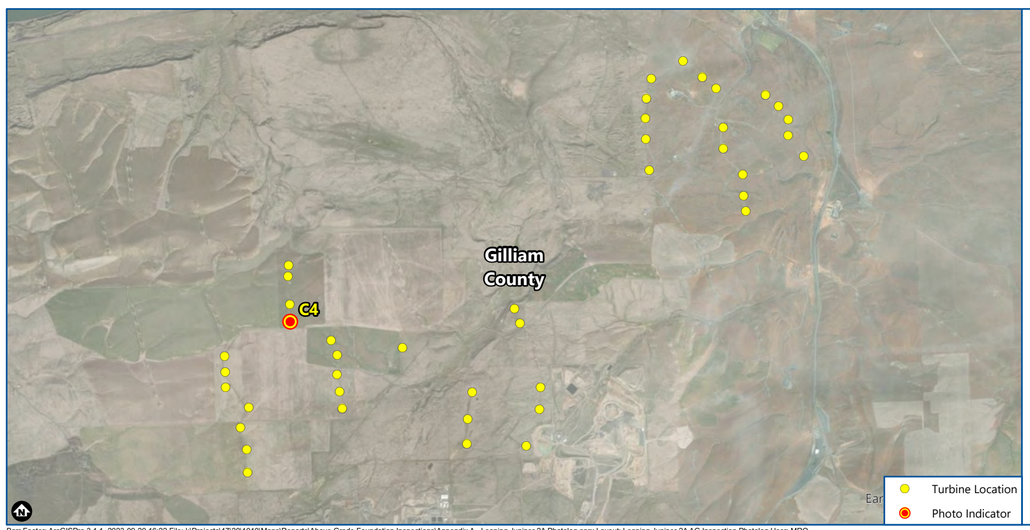

Name: C4

Backfill Condition: Not Good
Low backfill on North and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 5 to 8 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Shrinkage Cracking
Shrinkage cracks with efflorescence observed around grout bed spaced 2 to 6 inches OC. Max crack width is 0.008in.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge to circumferential crack and tower flange. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE C4
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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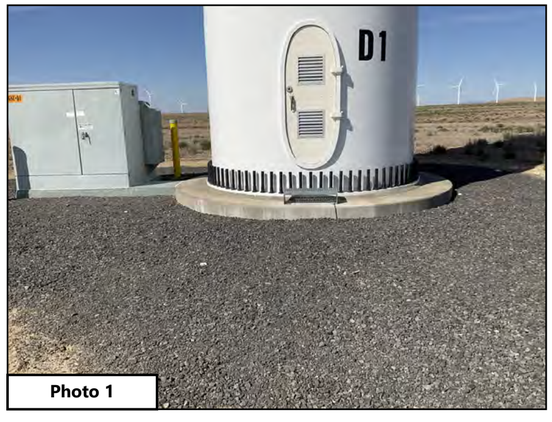

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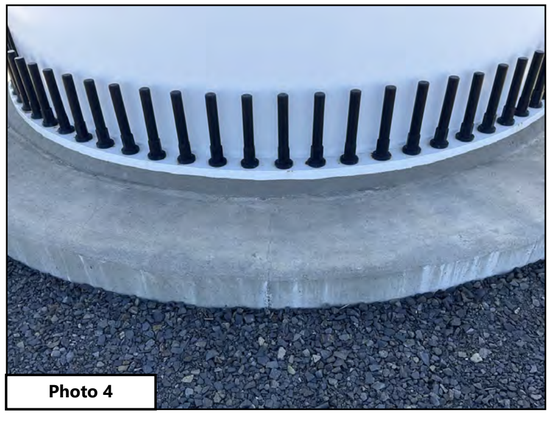
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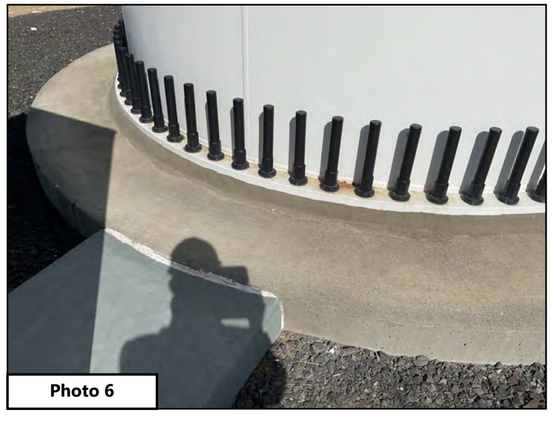
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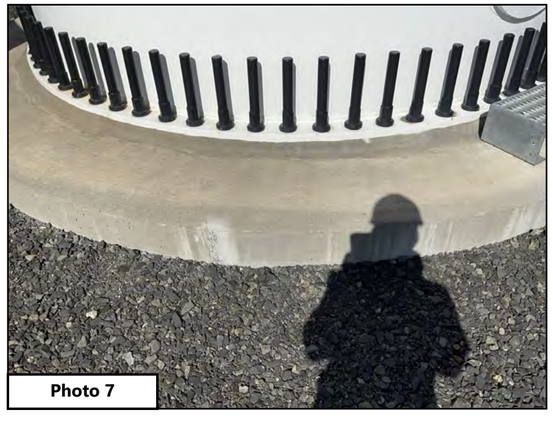
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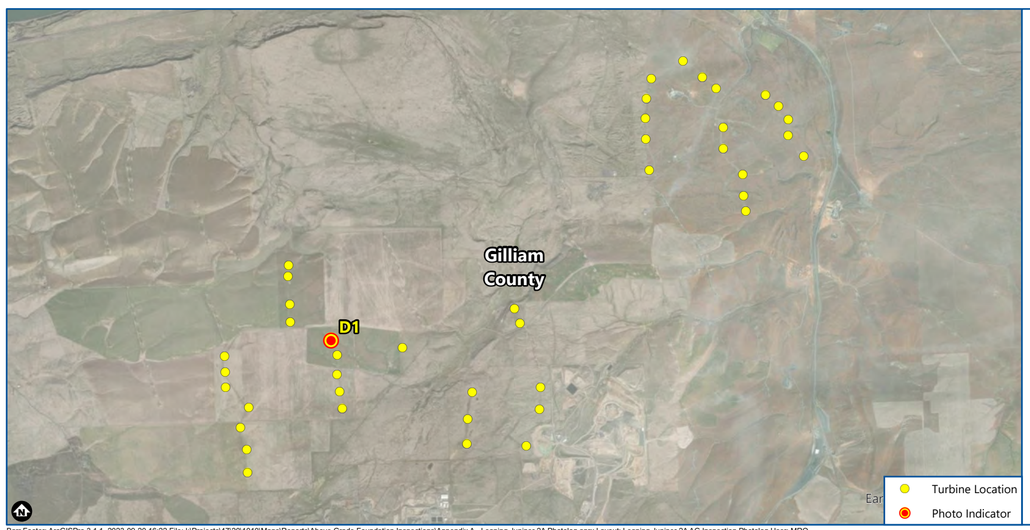

Name: D1

Backfill Condition: Not Good
Low backfill on North, South, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.028in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed that extend from pedestal to flange. Max width is 0.024in. Cracks are spaced 3 to 18 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Four anchor bolt covers with cracks or holes.

Additional Notes: Radial cracks observed around pedestal that extend from pedestal edge to circumferential crack and grout bed. Max crack width is 0.028in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE D1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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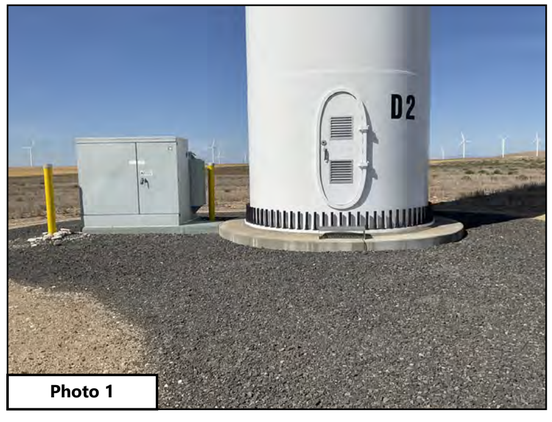

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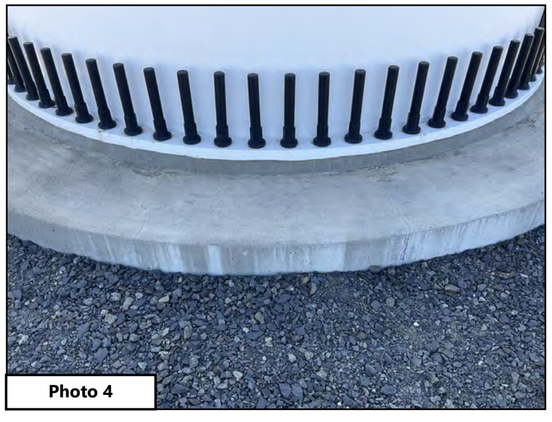
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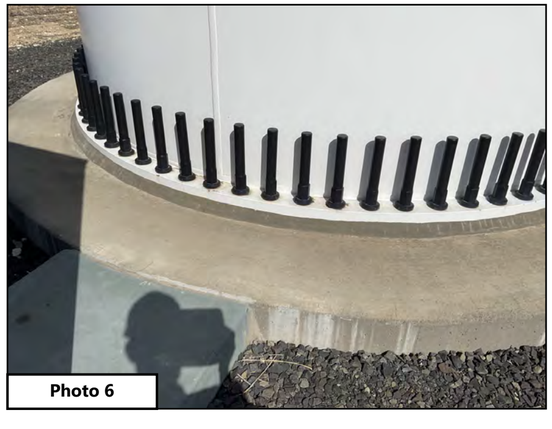
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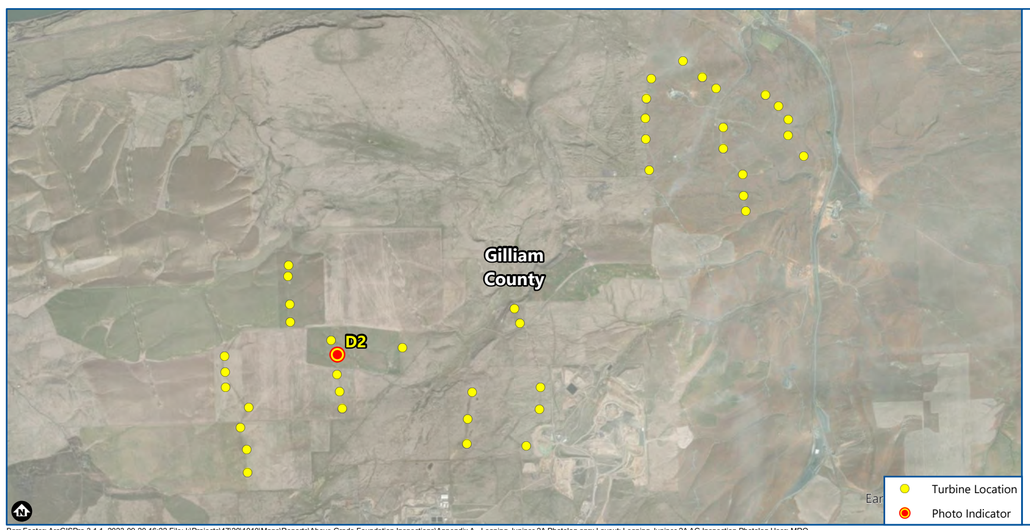

Name: D2

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 3 to 8 inches from tower flange. Max crack width is 0.028in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed that extend from pedestal to flange. Max crack width is 0.0.016in. Cracks are spaced 2 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missed anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal that extend from pedestal edge to grout bed. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE D2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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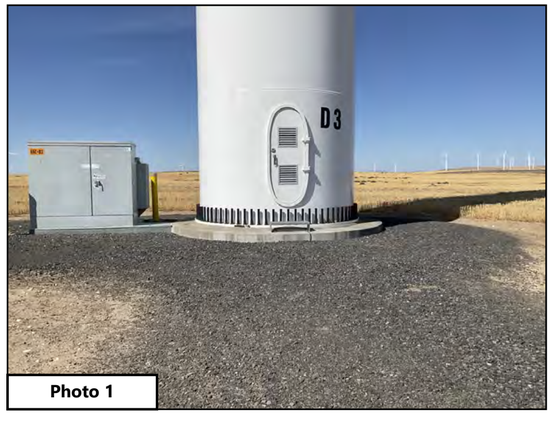

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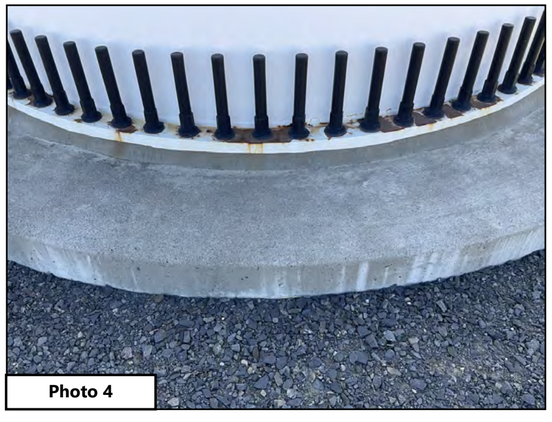
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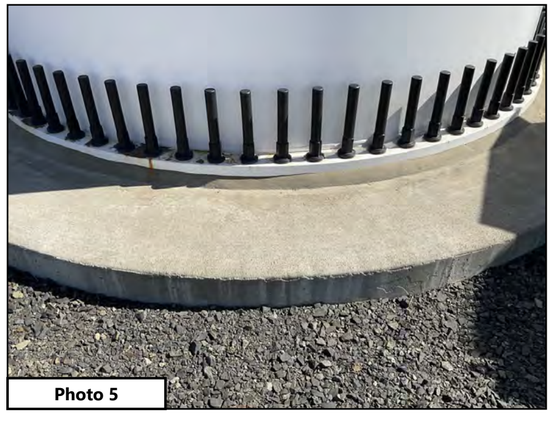
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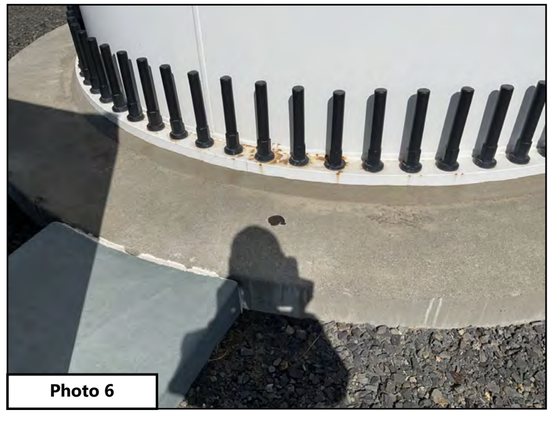
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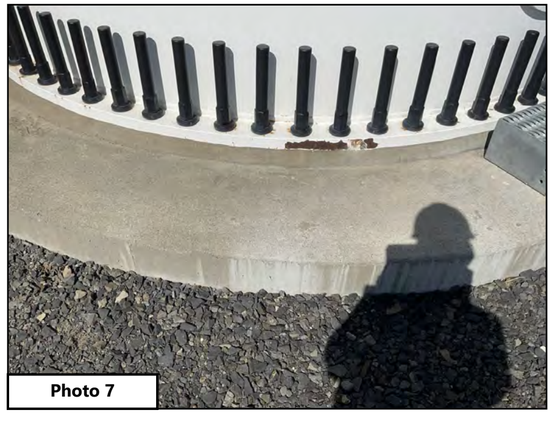
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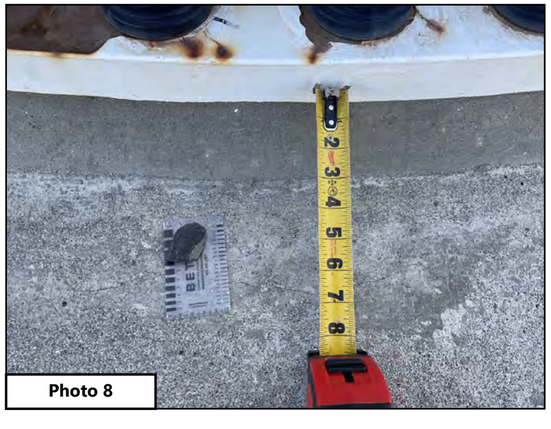
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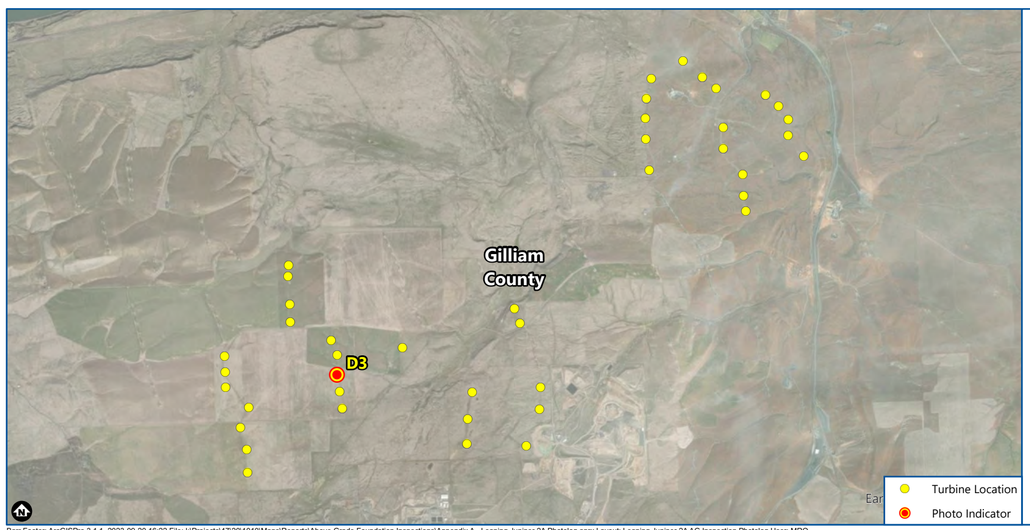

Name: D3

Backfill Condition: Not Good
Low backfill on North, South, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed that extend from pedestal to tower flange. Max crack width is 0.012in. Crack spacing is 4 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
One anchor bolt cover with damage at its base.

Additional Notes: Radial cracks observed around the pedestal that extend from pedestal edge towards circumferential crack. Max crack width is 0.022in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE D3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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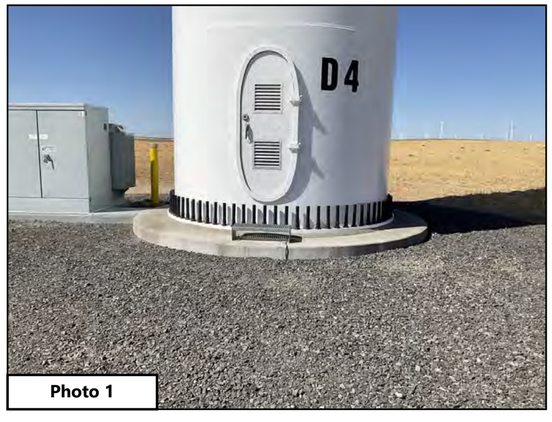

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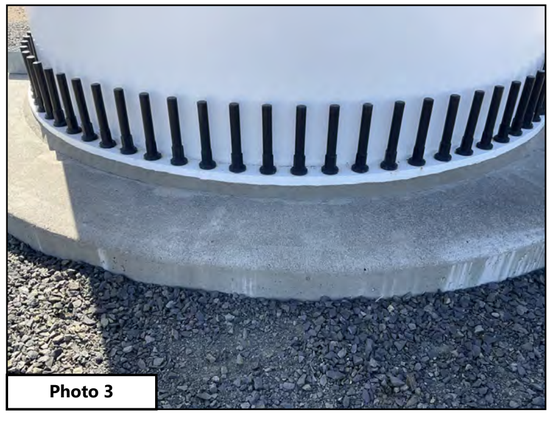
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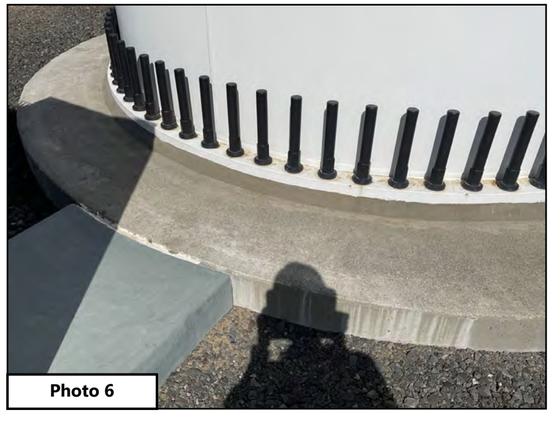
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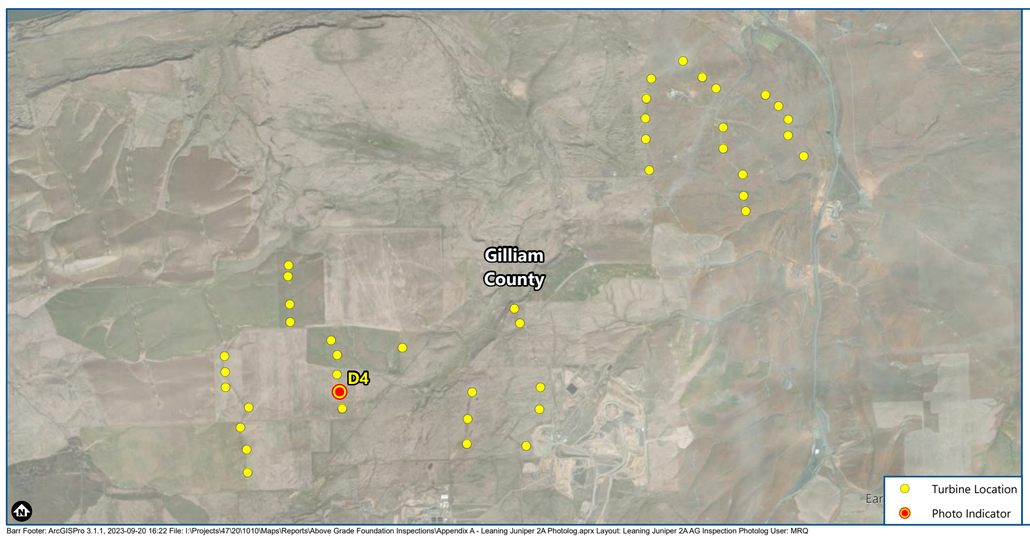

Name: D4

Backfill Condition: Not Good
Low backfill on South and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 8 inches from tower flange. Max crack width is 0.012in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to tower flange. Max crack width is 0.012in. Cracks are spaced 12 to 36 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No missing or damaged anchor bolt covers.

Additional Notes: Radial cracks observed around foundation extending from pedestal edge towards tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE D4
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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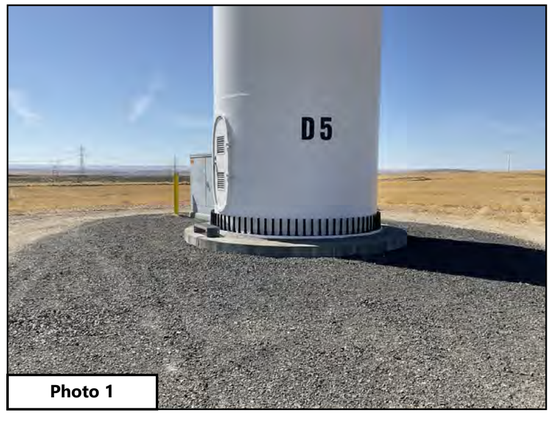

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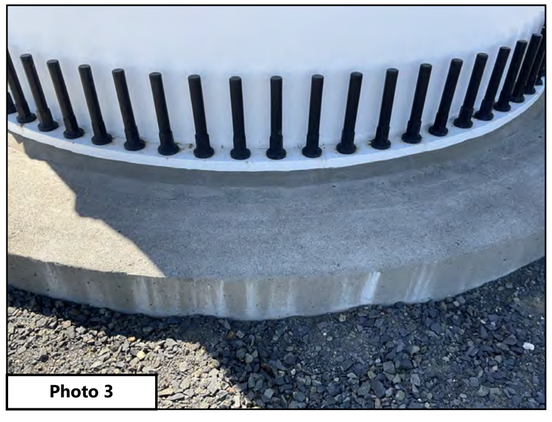
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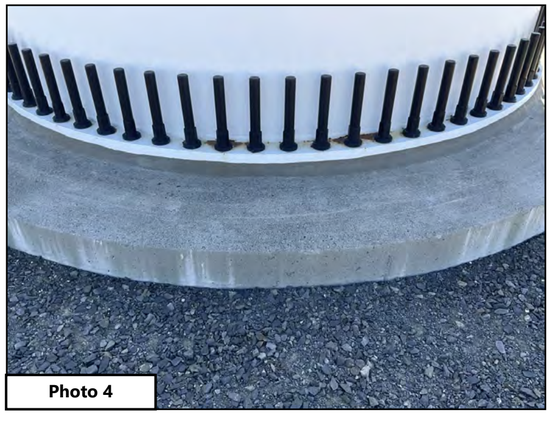
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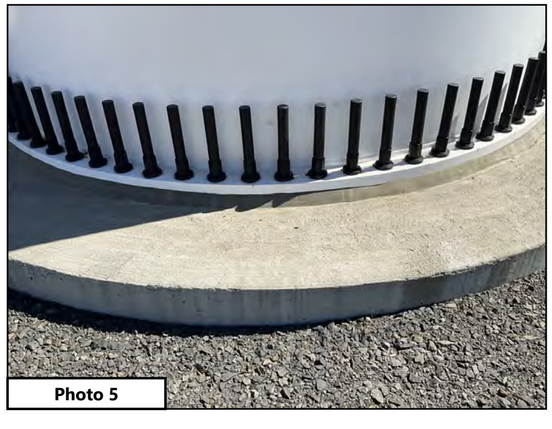
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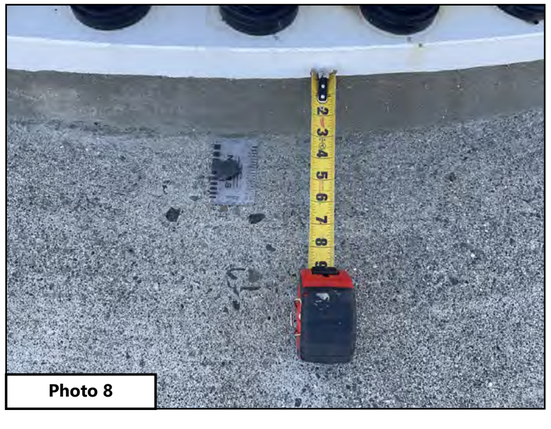
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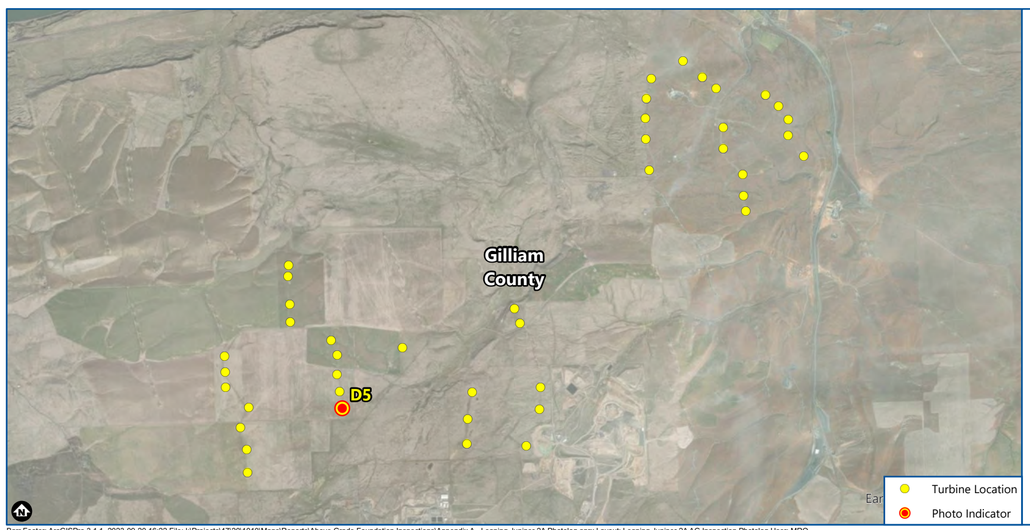

Name: D5

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 8 inches from the tower flange. Max crack width is 0.02in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to flange. Max crack width is 0.031in. Cracks are spaced 4 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed extending from pedestal edge towards tower flange. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 8″

TURBINE D5
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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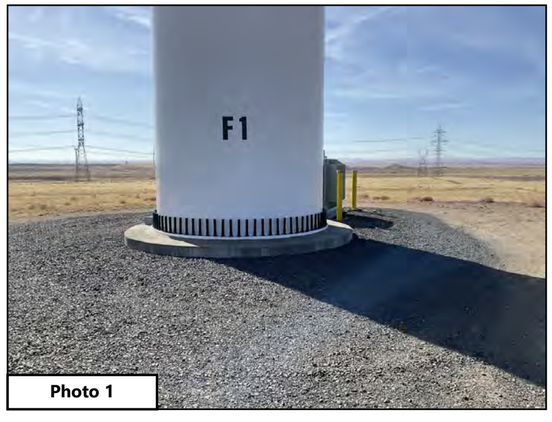

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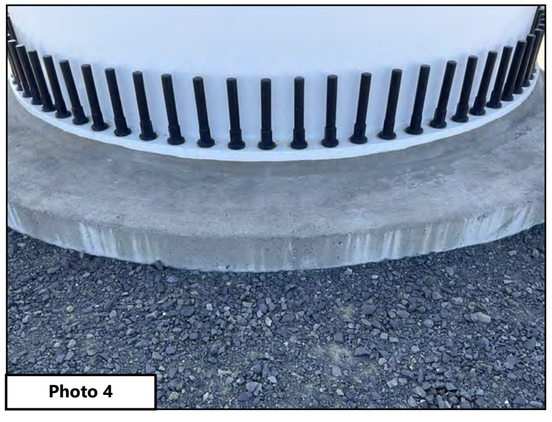
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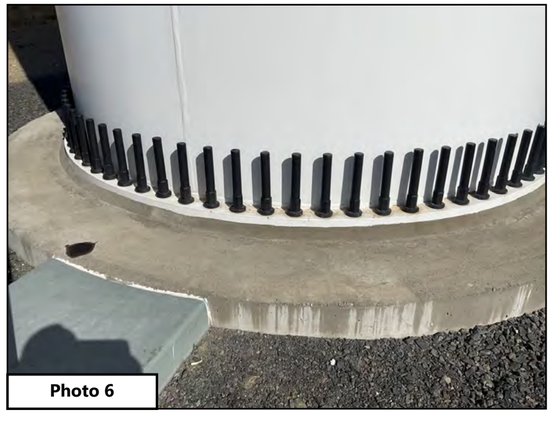
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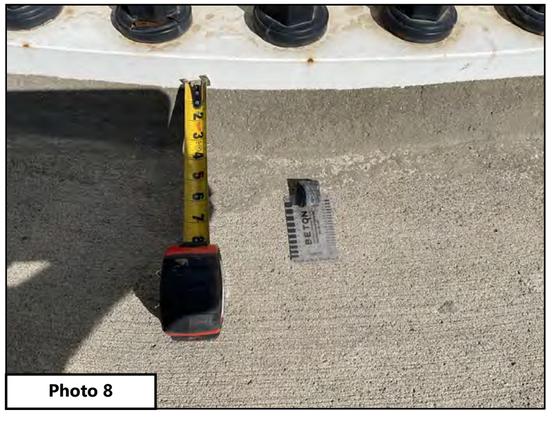
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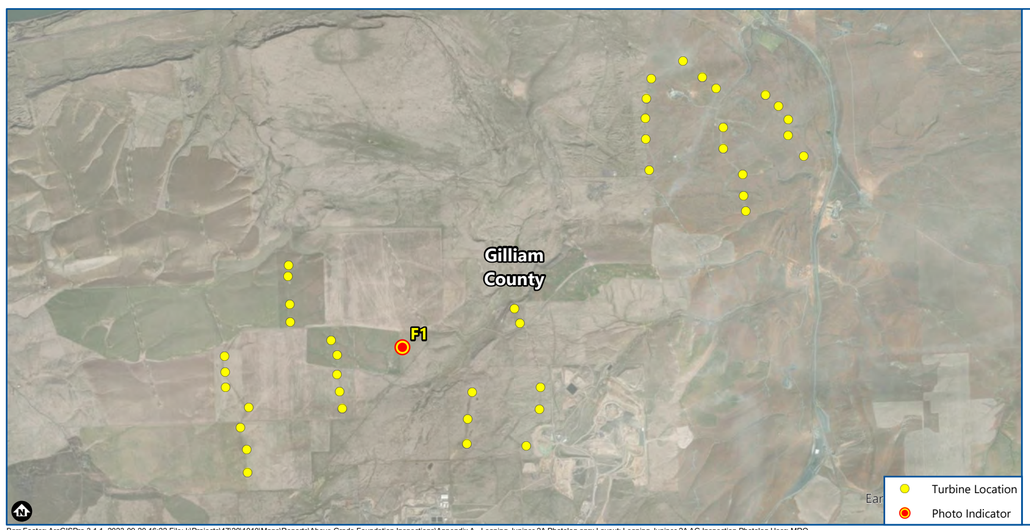

Name: F1

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 3 to 7 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed. Max crack width is 0.016in. Cracks spaced 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Three anchor bolt covers with holes or cracks in base.

Additional Notes: Radial cracks around pedestal that extend from pedestal edge to circumferential crack. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 8″

TURBINE F1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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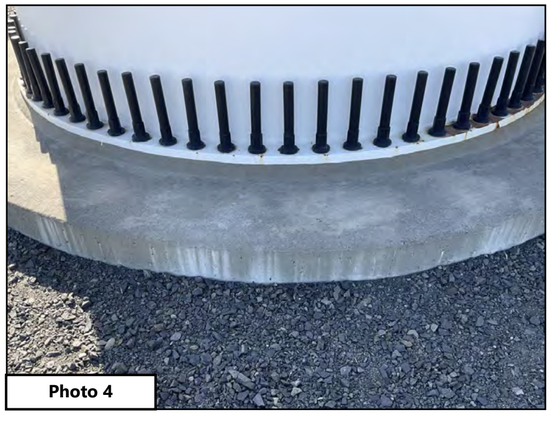
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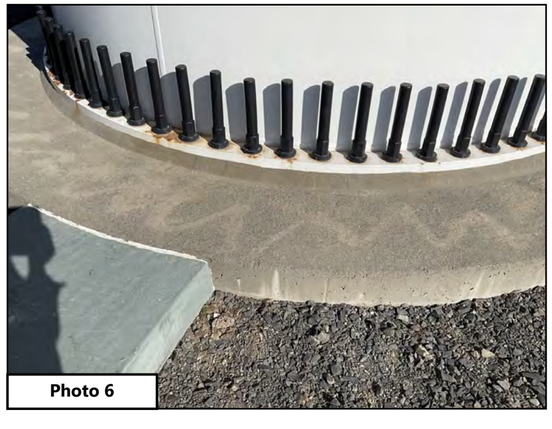
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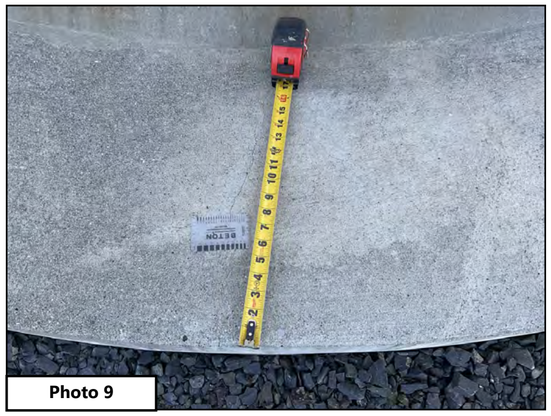

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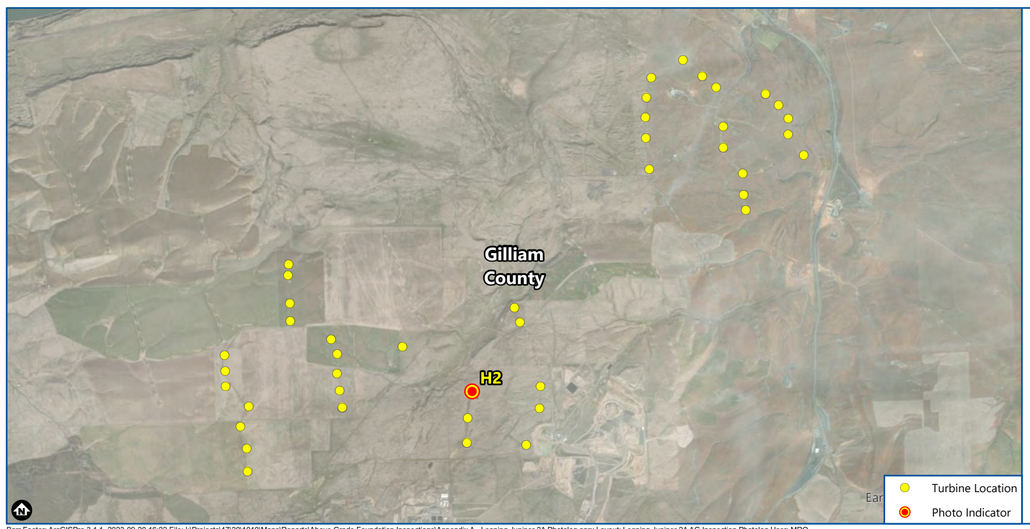

Name: H2

Backfill Condition: Not Good
Low backfill on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal. Crack is located 3 to 6 inches from tower flange. Max crack width is 0.026in.

Grout Condition: Radial Cracking
Radial cracks observed that extend from pedestal to tower flange. Max crack width is 0.022in. Cracks spaced 3 to 24 inches OC around tower flange.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No cracked or missing anchor bolt covers.

Additional Notes: Radial cracks around the pedestal were observed. Cracks extend from pedestal edge to circumferential crack. Max crack width is 0.018in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE H2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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Photo 1

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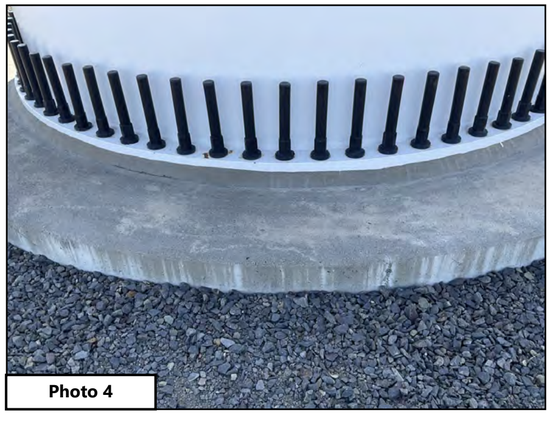
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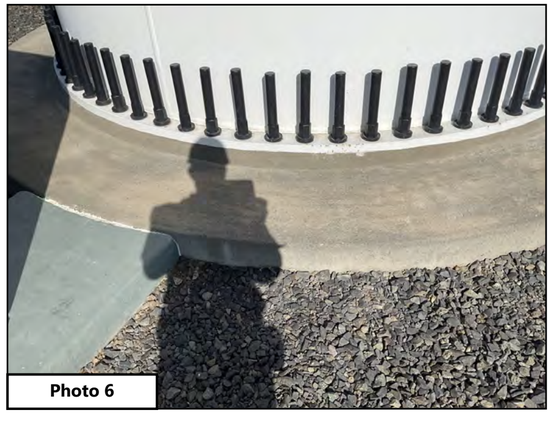
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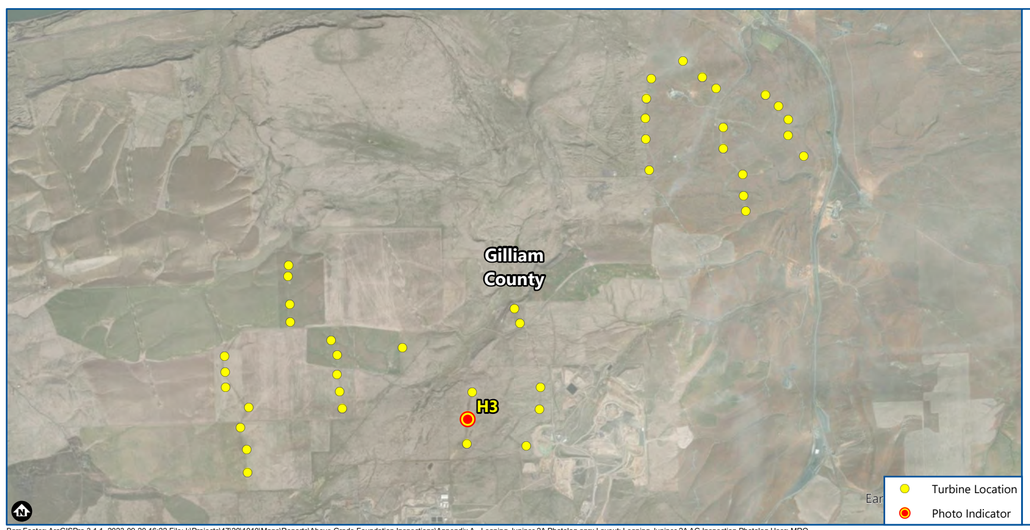

Name: H3

Backfill Condition: Not Good
Low backfill on North side.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 3 to 6 inches from tower flange. Max crack width is 0.028in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed. Cracks extend from pedestal to tower flange. Max crack width is 0.031in. Cracks spaced 6 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No cracked or missing anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal. Cracks extend from pedestal edge to tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 6″

TURBINE H3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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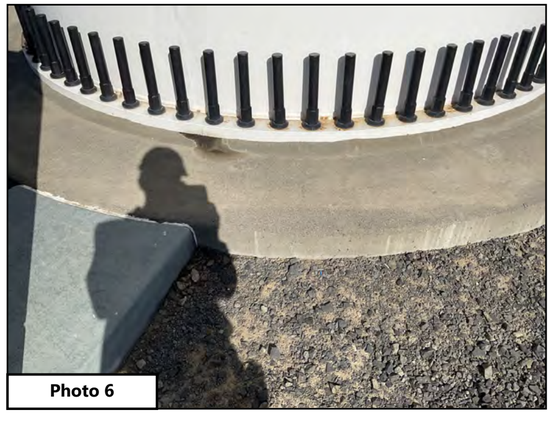
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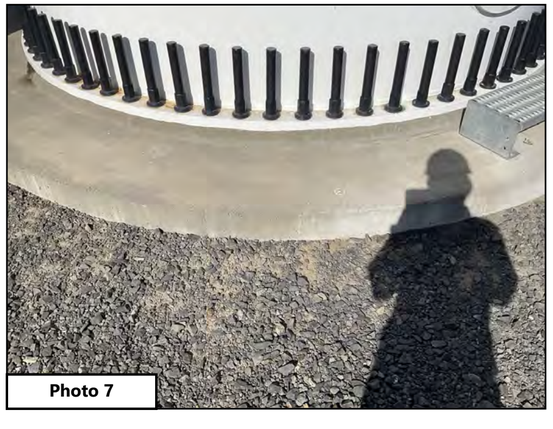
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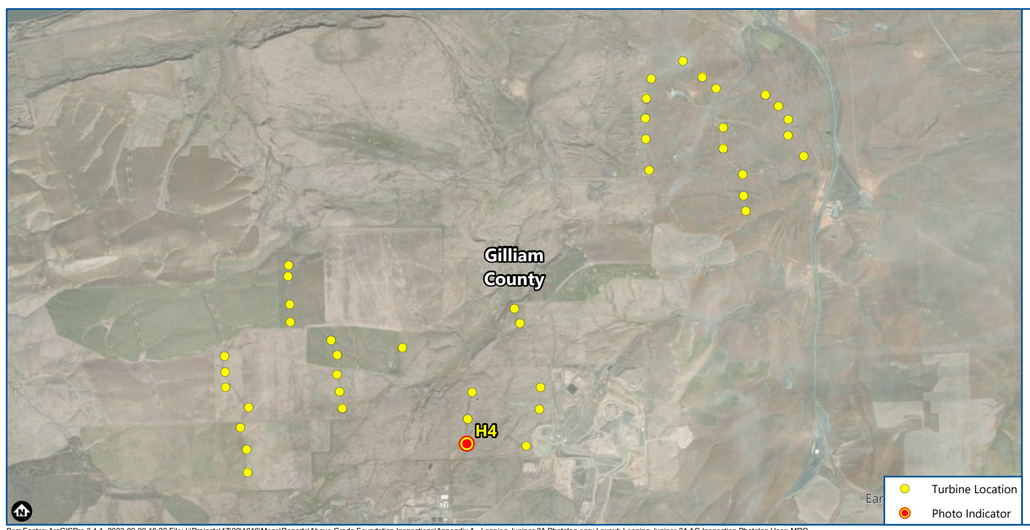

Name: H4

Backfill Condition: Not Good
Low backfill on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal. Crack is located 4 to 7 inches from tower flange. Max crack width is 0.024in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed and extend to tower flange.. Max crack width is 0.024in. Cracks are spaced approximately 6 to 24 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Three anchor bolt covers with holes in the bases.

Additional Notes: Radial cracks observed around pedestal. Cracks extend from pedestal edge to circumferential crack. Max width is 0.024in.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 8″

Pedestal Height Measurements - West (inches): 7″

TURBINE H4
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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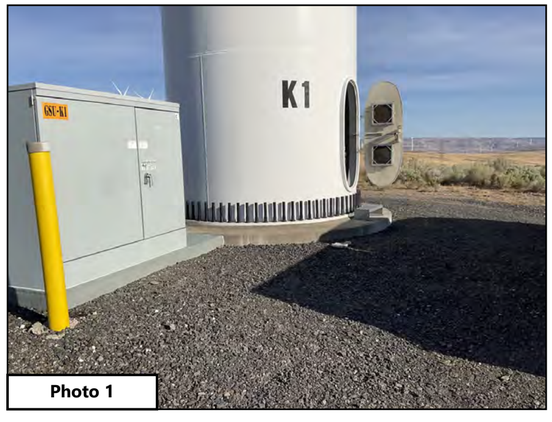

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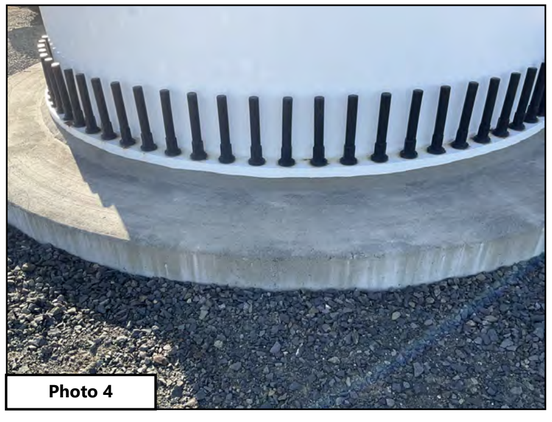
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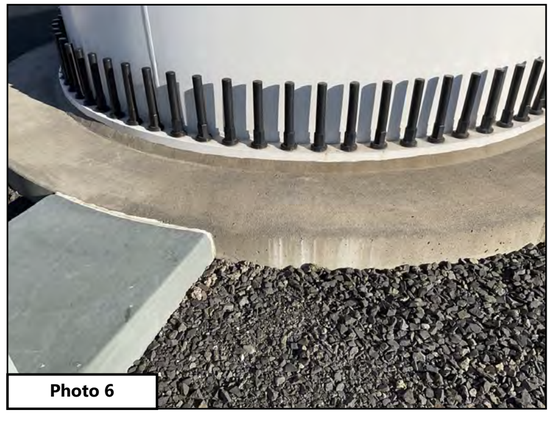
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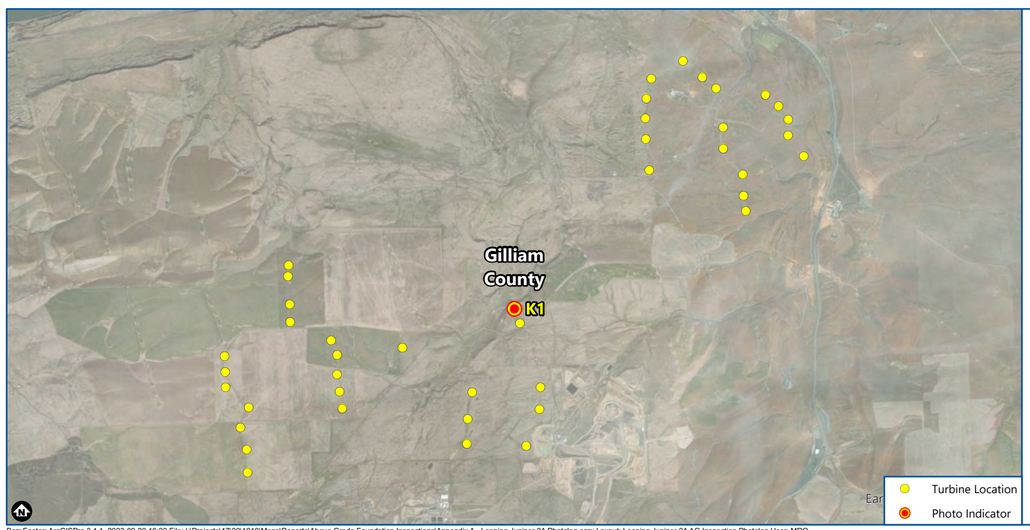

Name: K1

Backfill Condition: Not Good
Low backfill on South and East Sides.

Pedestal Condtion: Circumferential Cracking
Radial cracks observed around foundation that extend from pedestal edge 10 to 12 inches towards tower flange. Max crack width is 0.031in.

Grout Condition: Radial Cracking
Radial cracks observed that extend from pedestal to tower flange. Max crack width is 0.024in.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No cracked or missing anchor bolt covers.

Additional Notes: Circumferential cracking around entire pedestal. Max crack width is 0.022in and crack is located 3 to 6 inches from tower flange.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 6″

TURBINE K1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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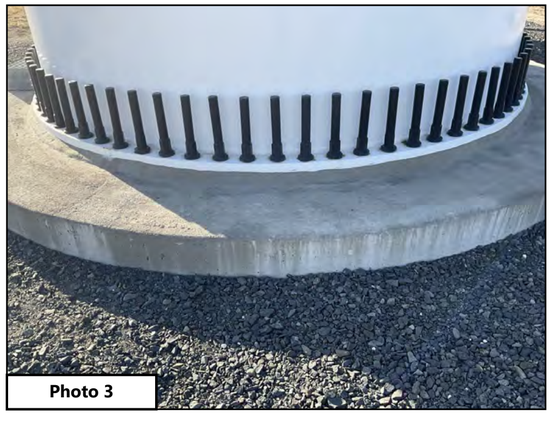
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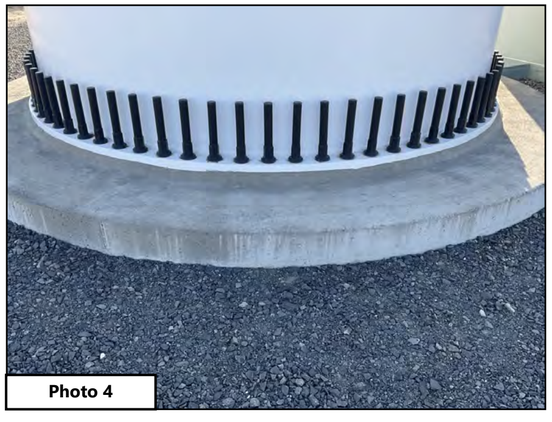
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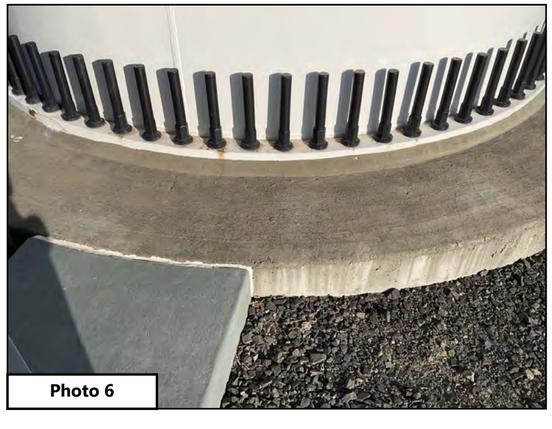
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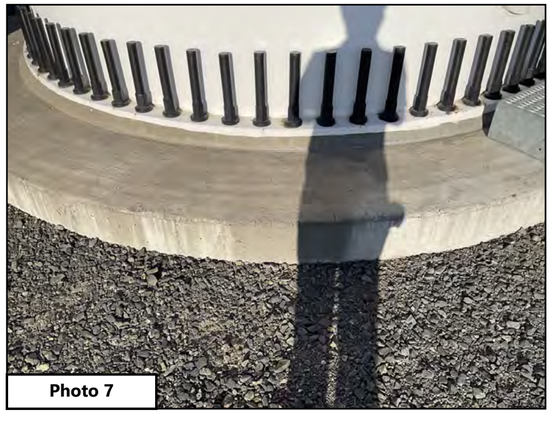
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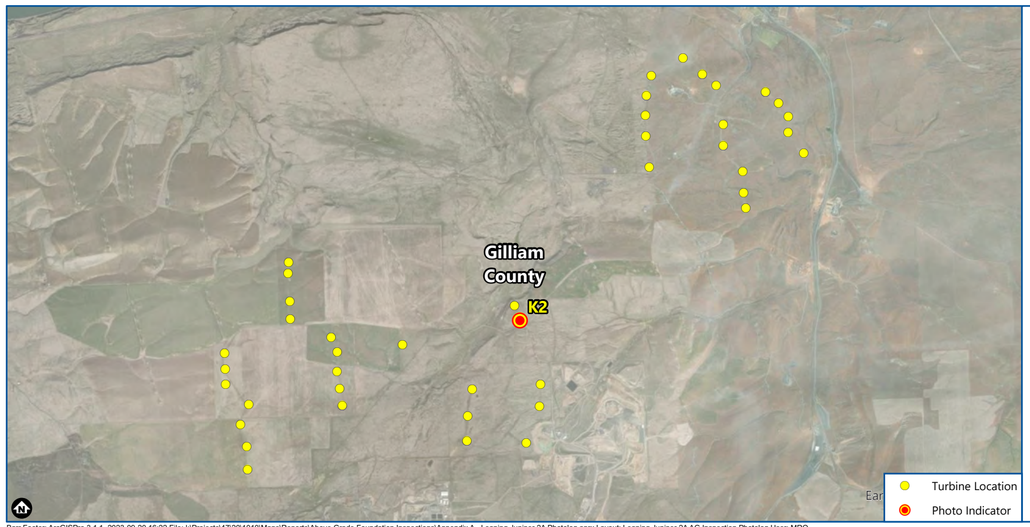

Name: K2

Backfill Condition: Not Good
Low backfill on all sides of foundation.

Pedestal Condtion: Circumferential Cracking
Radial cracks observed around the foundation that extend 9 to 10 inches towards tower flange. Max crack width is 0.018in.

Grout Condition: Shrinkage Cracking
Radial cracks observed around grout bed that extend from pedestal to flange. Max crack width is 0.018in.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No missing or cracked anchor bolt covers.

Additional Notes: Circumferential crack observed on SW side of pedestal that extends for 40 inches. Max crack width is 0.018in and is located 6 inches from tower flange.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 9″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 8″

TURBINE K2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Avangrid Renewables, LLC
Gilliam County, Oregon

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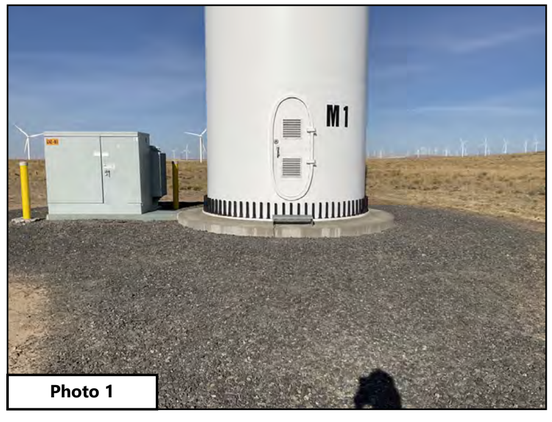

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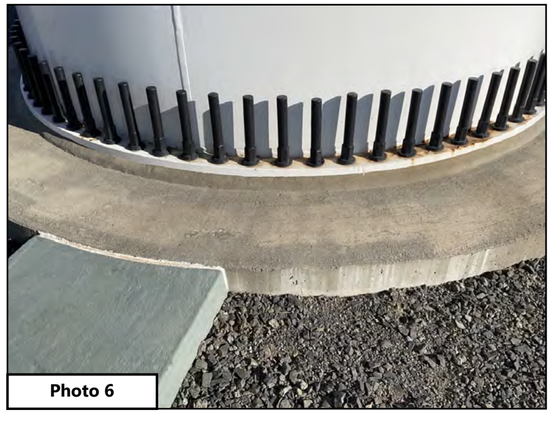
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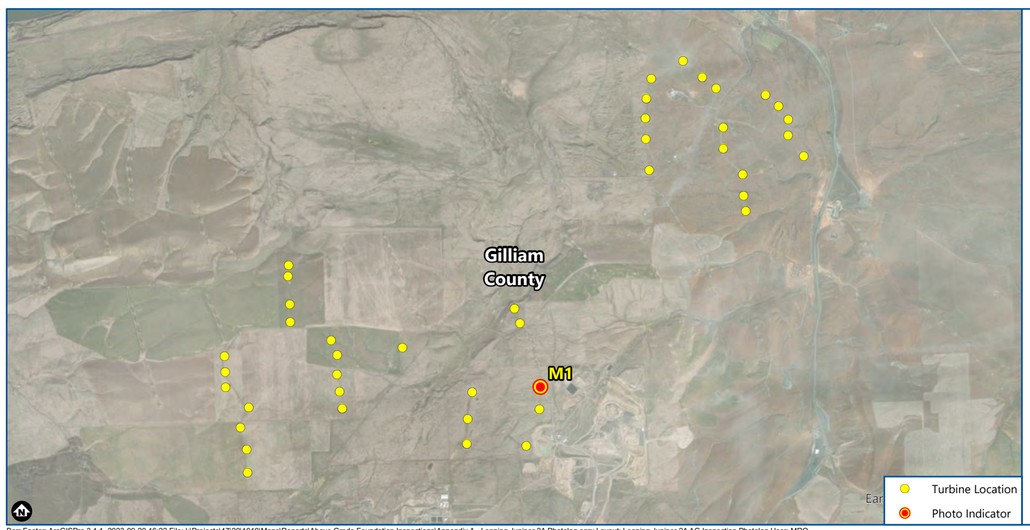

Name: M1

Backfill Condition: Not Good
Low backfill on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Radial cracks observed around entire foundation. Max crack width is 0.024in. Cracks extend from pedestal edge to circumferential crack.

Grout Condition: Radial Cracking
Radial cracks observed around tower flange. Cracks extend from pedestal to tower flange. Max crack width is 0.02in. Cracks spaced 6 to 24 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No cracked or missing anchor bolt covers.

Additional Notes: Circumferential crack observed around entire tower flange. Max crack width is 0.028in. Crack is located 3 to 6 inches from tower flange.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE M1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Avangrid Renewables, LLC
Gilliam County, Oregon

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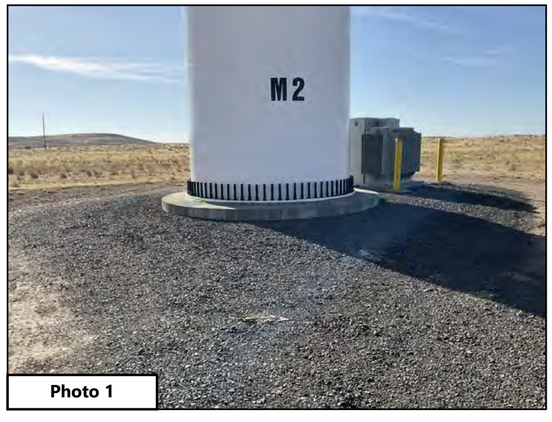

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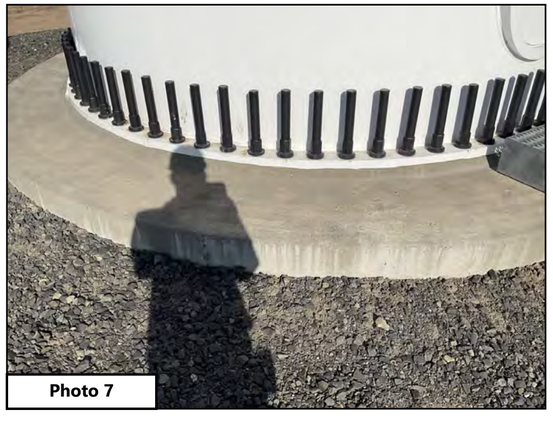
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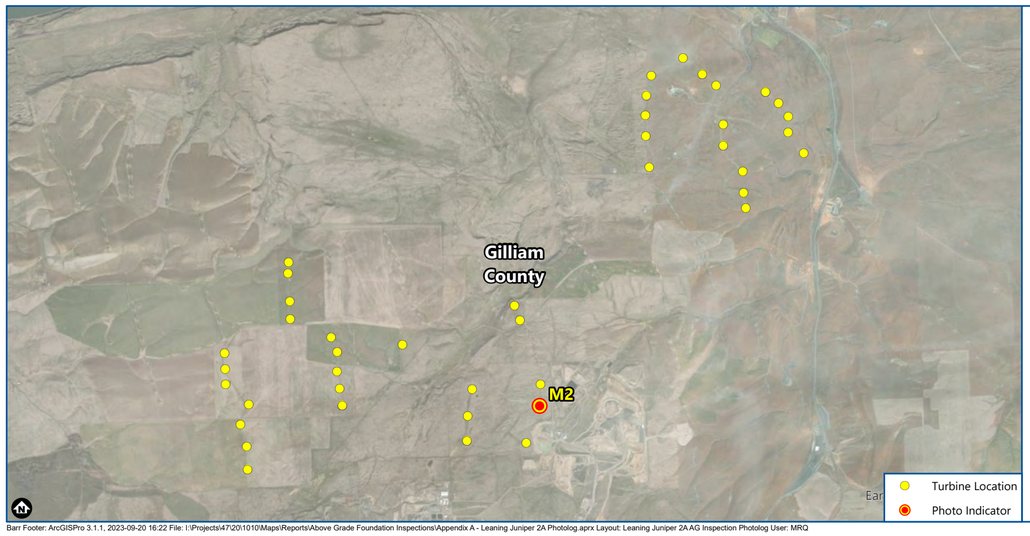

Name: M2

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Radial cracks observed around pedestal. Cracks extend from pedestal edge to circumferential crack. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed. Cracks extend from pedestal to tower flange. Max crack width is 0.028in. Cracks are spaced 6 to 24 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No cracked or missing anchor bolt covers.

Additional Notes: Circumferential crack around entire pedestal. Crack is located 3 to 6 inches from tower flange. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 9″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 8″

TURBINE M2
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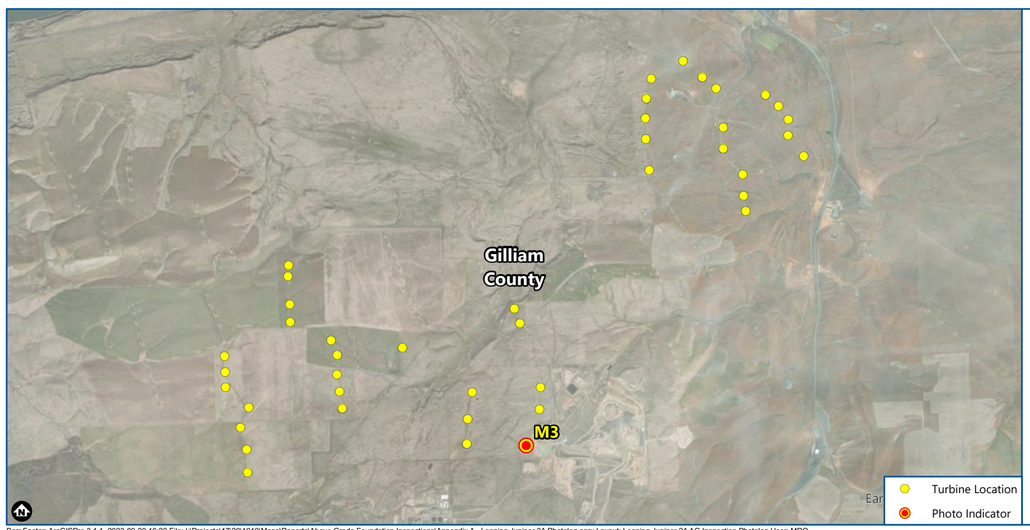

Name: M3

Backfill Condition:

Pedestal Condtion:

Grout Condition:

Sealant Condition:

Anchor Bolt Cover Condition: Good

Additional Notes: Not inspected due to safety concerns after turbine fire.

Pedestal Height Measurements - North (inches):

Pedestal Height Measurements - East(inches):

Pedestal Height Measurements - South(inches):

Pedestal Height Measurements - West (inches):

TURBINE M3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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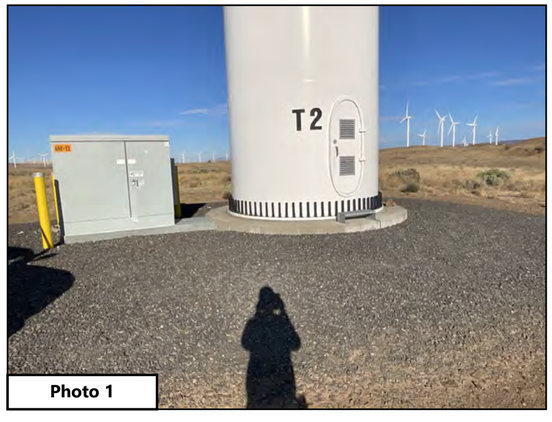

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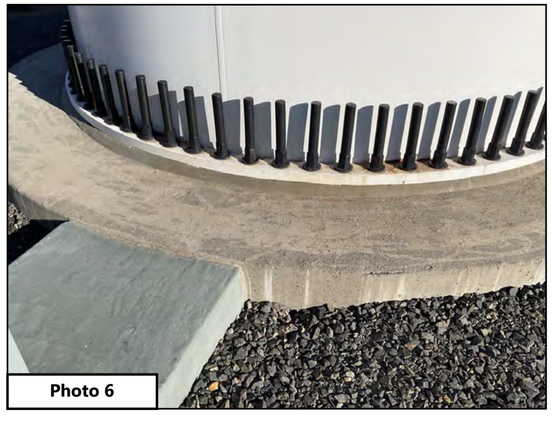
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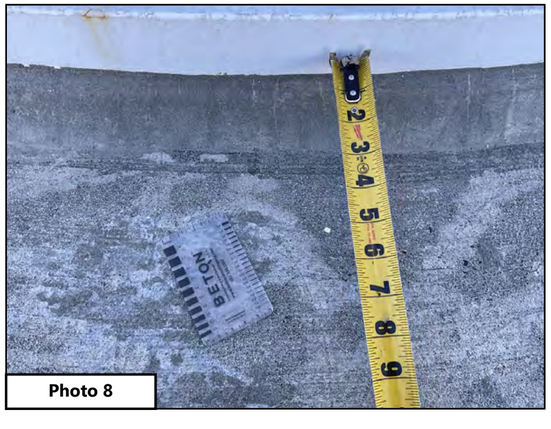
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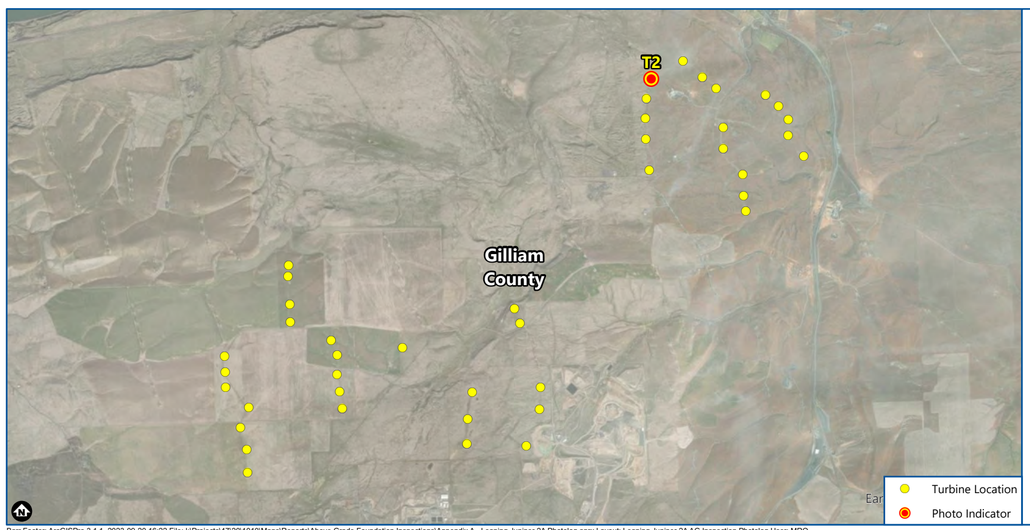

Name: T2

Backfill Condition: Not Good
Low backfill on East and South sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around south half of pedestal located 4 to 7 inches from tower flange. Max crack width is 0.012in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.016in. Cracks are spaced 2 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Four anchor bolt covers observed with cracks in the base.

Additional Notes: Radial cracks observed on pedestal edge that extend from edge to circumferential crack. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 5″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 8″

Pedestal Height Measurements - West (inches): 5″

TURBINE T2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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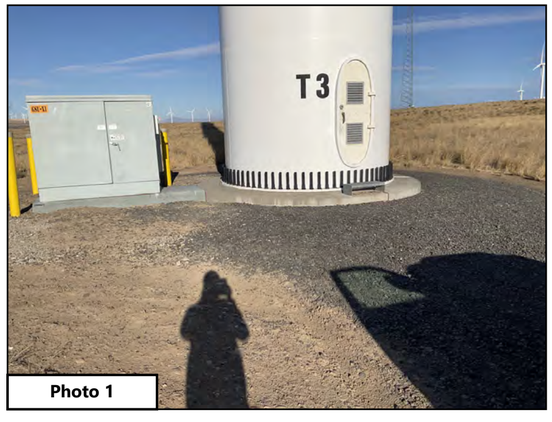

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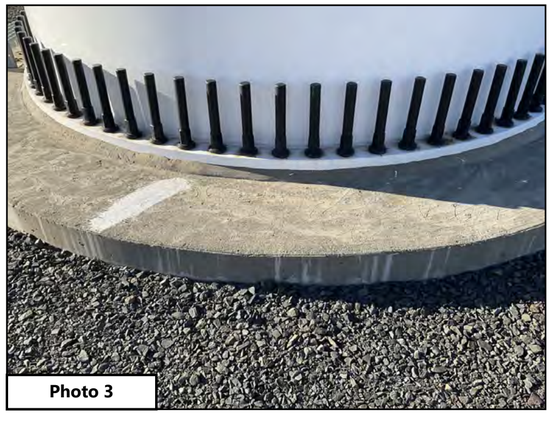
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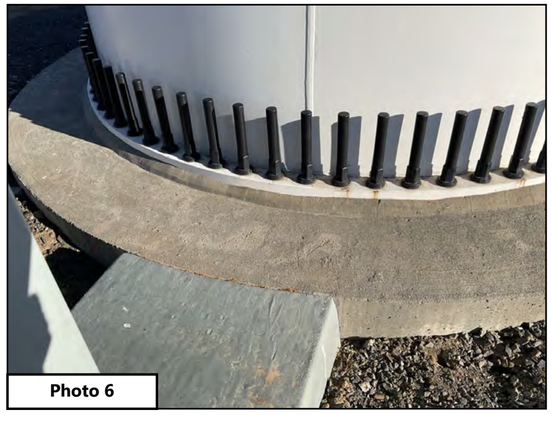
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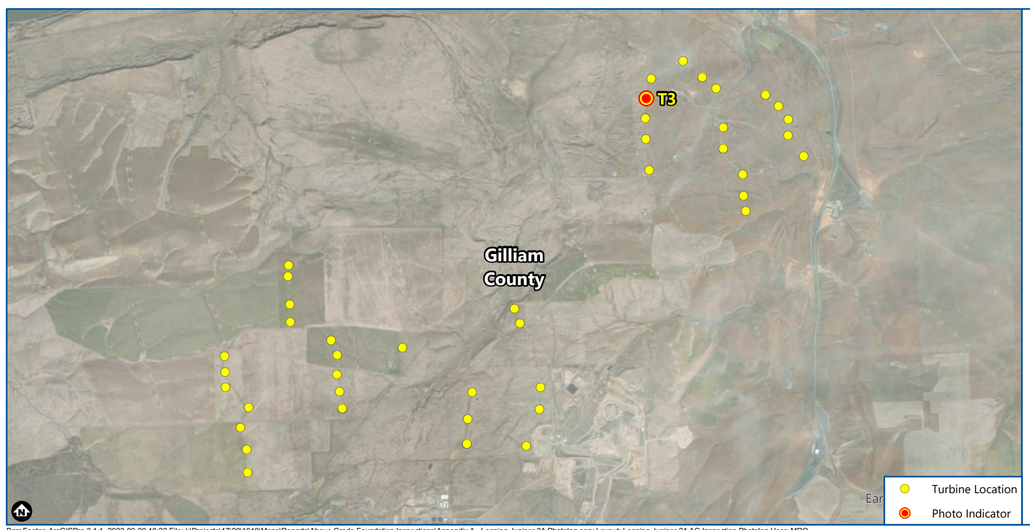

Name: T3

Backfill Condition: Not Good
Low backfill on North, South, and West sides. Holes 4 inches deep observed on either side of pedestal and PMT intersection.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 7 inches from pedestal. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed from pedestal to tower flange. Max crack width is 0.024in. Cracks are spaced 2 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge to circumferential crack. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 8″

Pedestal Height Measurements - West (inches): 7″

TURBINE T3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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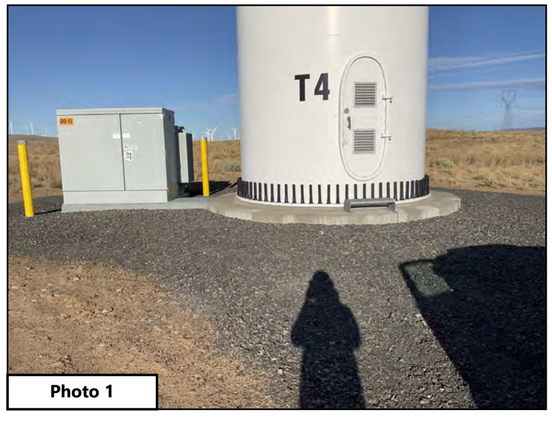

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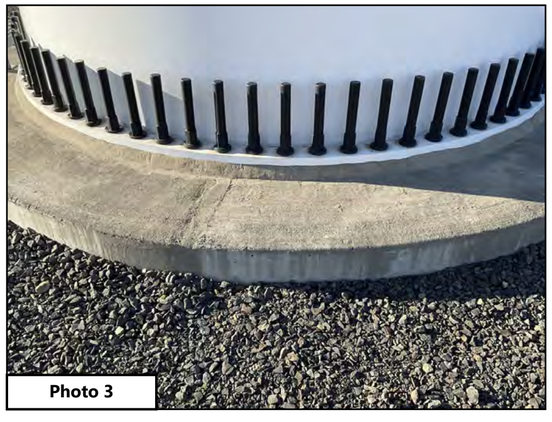
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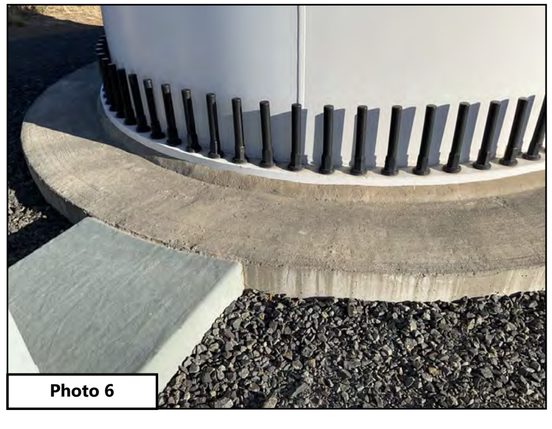
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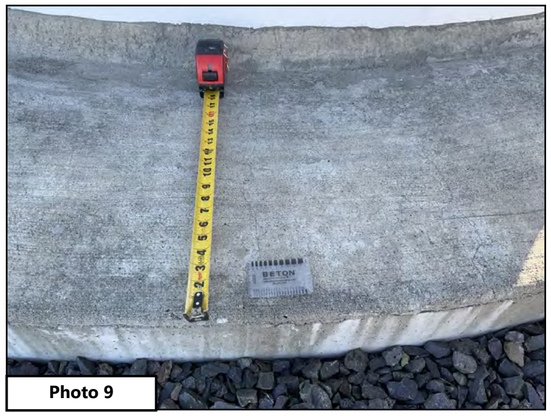
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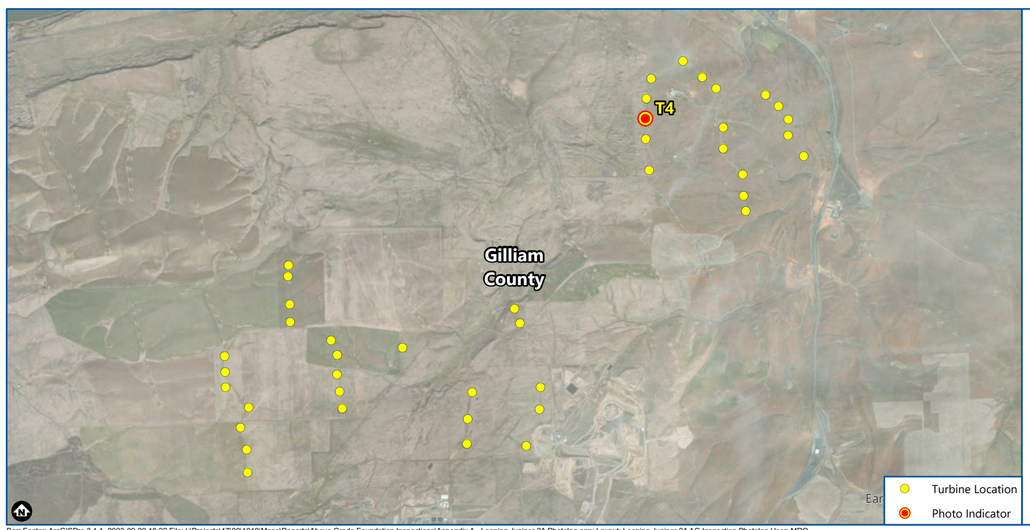

Name: T4

Backfill Condition: Not Good
Low backfill on North, East, and South sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.016in. Cracks are spaced 2 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Six anchor bolt covers with cracks in base or holes in top.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge to circumferential crack or tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 6″

TURBINE T4
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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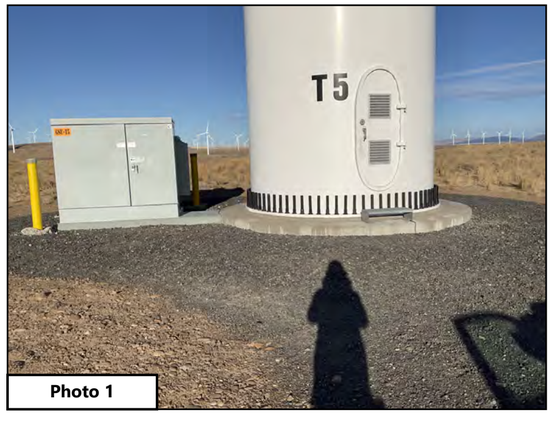

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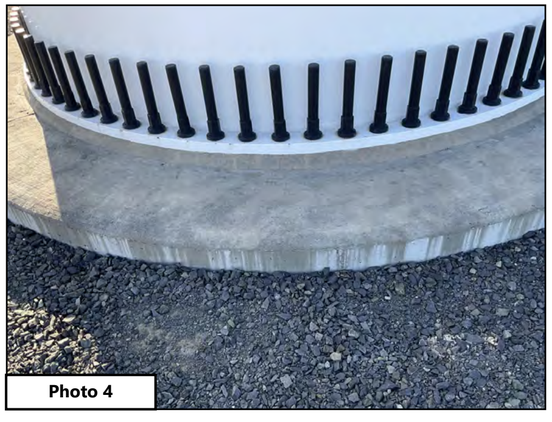
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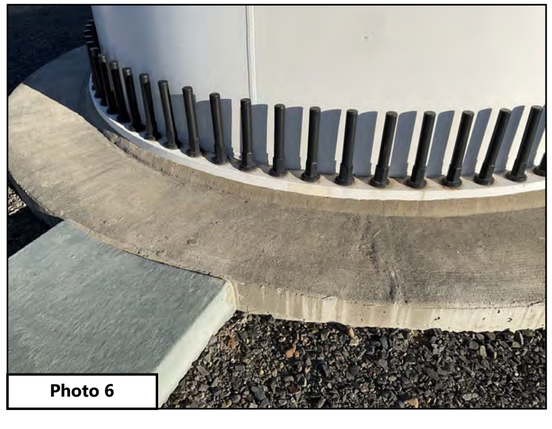
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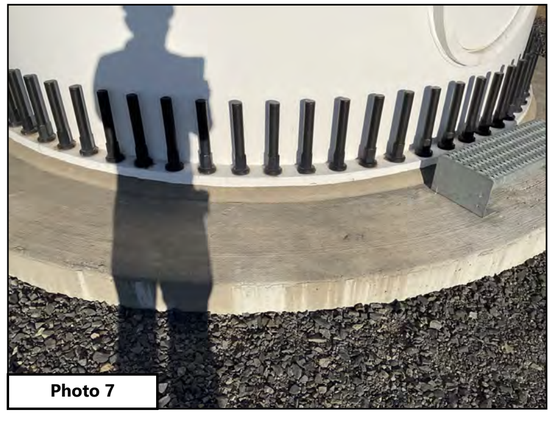
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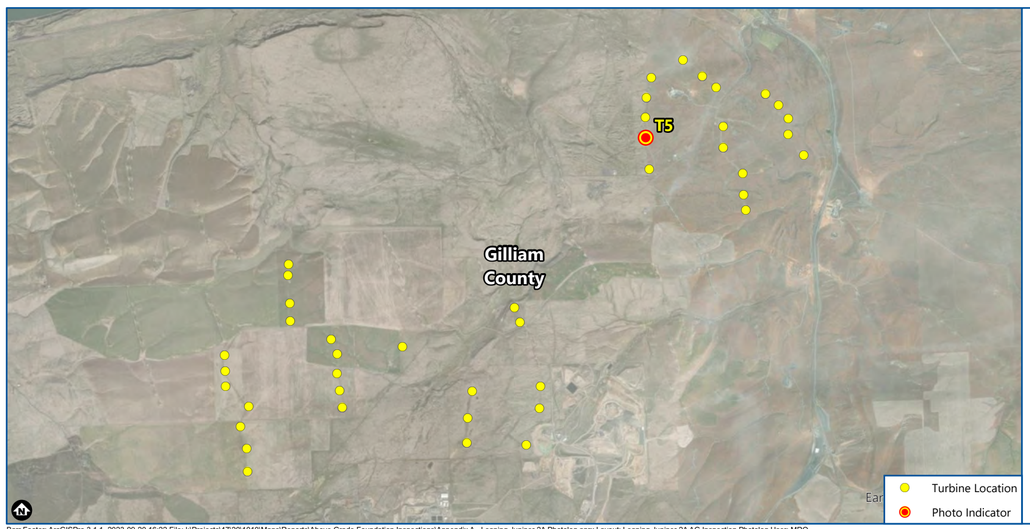

Name: T5

Backfill Condition: Not Good
Low backfill on East and South sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around south half of pedestal located 4 to 6 inches from tower flange. Max crack width is 0.008in.

Grout Condition: Radial Cracking
Radial cracks observed extending from pedestal to tower flange. Max crack width is 0.024in. Cracks spaced 4 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal edge extending from pedestal edge to circumferential crack or tower flange. Max crack width is 0.012in.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE T5
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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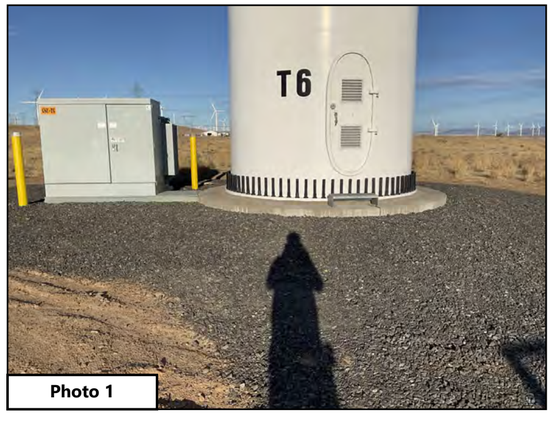

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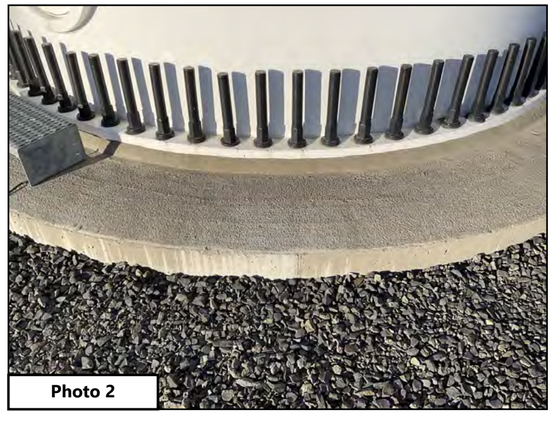
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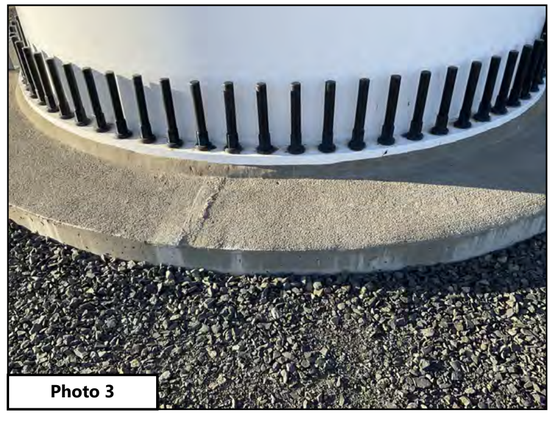
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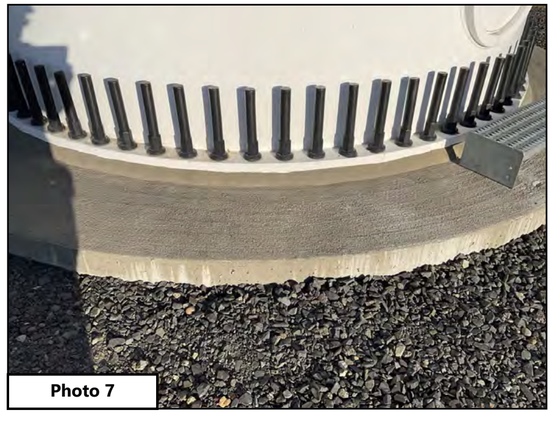
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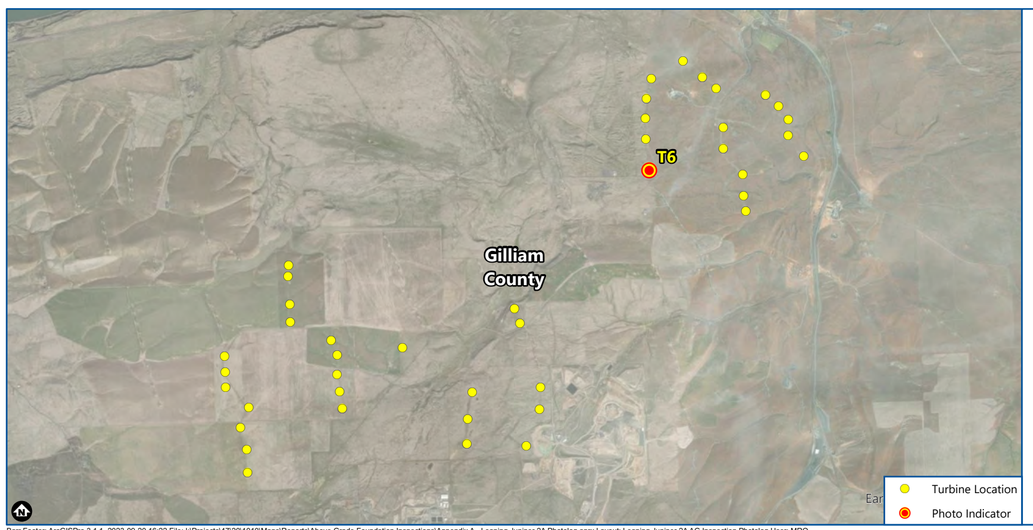

Name: T6

Backfill Condition: Good

Pedestal Condtion: Shrinkage Cracking
Shrinkage cracks observed on pedestal edge extending 3 to 6 inches from edge towards tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed extending from pedestal to tower flange. Max crack width is 0.024in. Cracks are spaced 4 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes:

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 5″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 6″

TURBINE T6
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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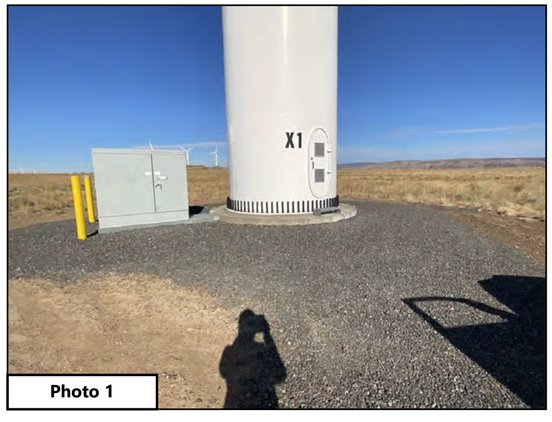

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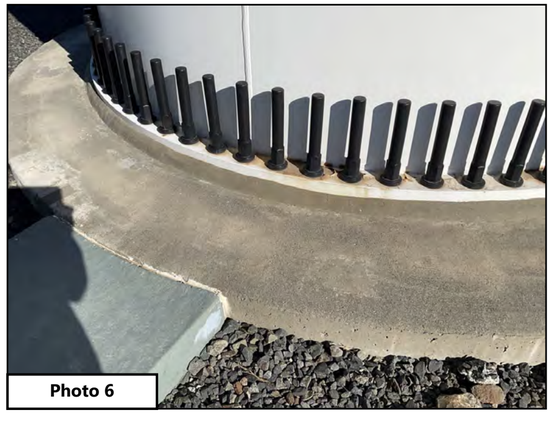
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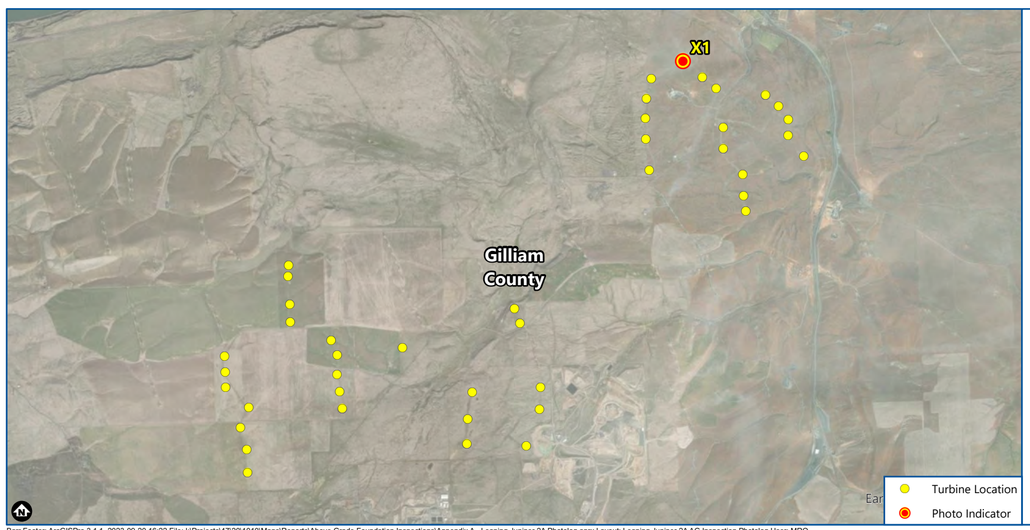

Name: X1

Backfill Condition: Not Good
Lo backfill on North and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 8 inches from flange. Max crack width is 0.02in. Edge spalling of repair near PMT.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed from pedestal to flange. Max crack width is 0.02in. Cracks spaced 3 to 12 inches OC. Flaking and spalling.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed on pedestal edge that extend from edge to circumferential crack. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE X1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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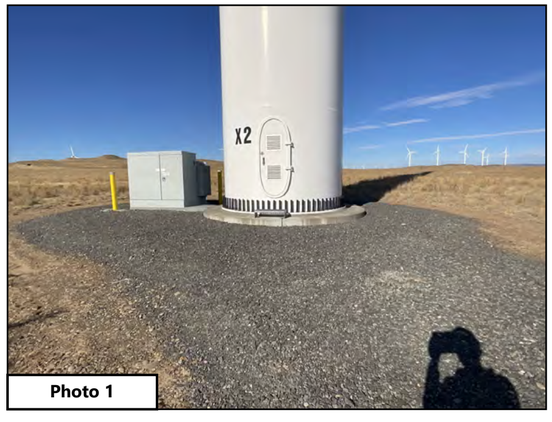

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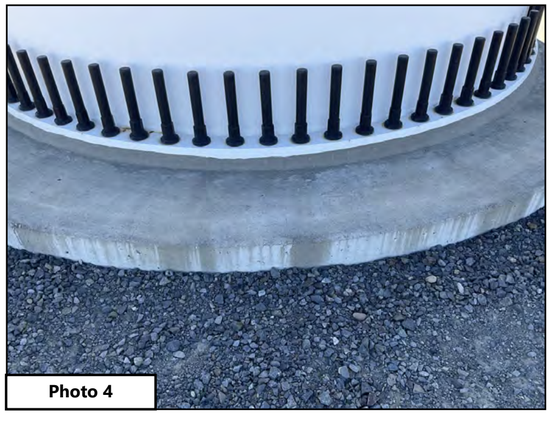
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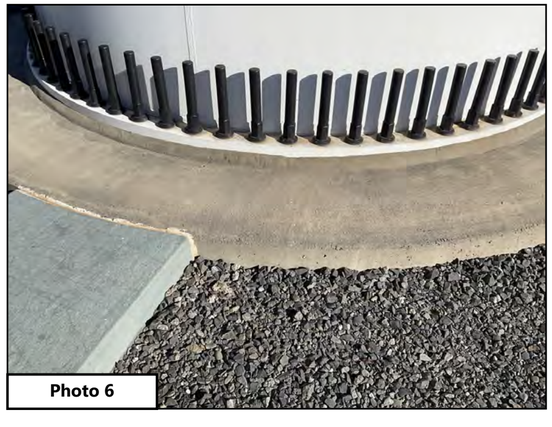
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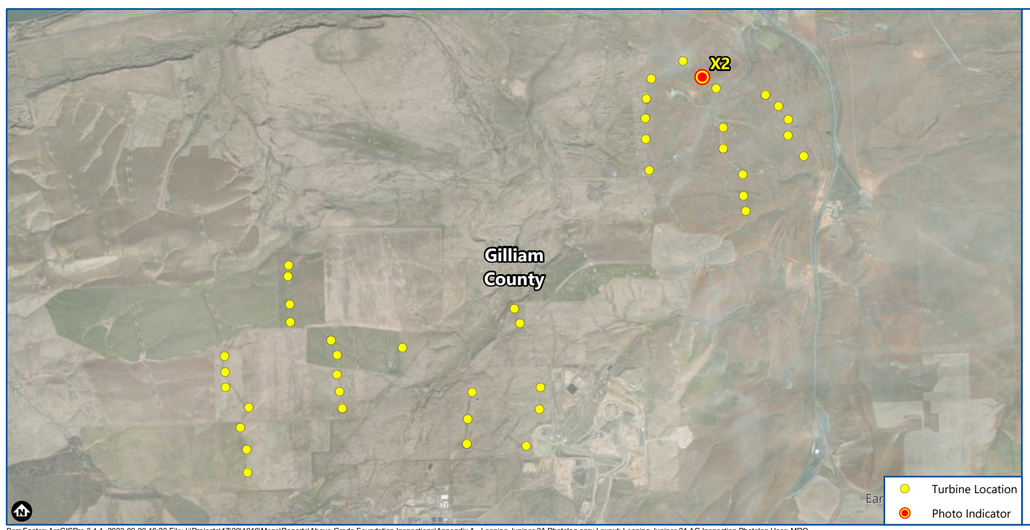

Name: X2

Backfill Condition: Not Good
Low backfill on North and East sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 4 to 8 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.024in. Cracks are spaced 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Two anchor bolt covers observed with cracks in base.

Additional Notes: Radial cracks observed around pedestal edge extending from edge to circumferential crack. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 5″

Pedestal Height Measurements - West (inches): 6″

TURBINE X2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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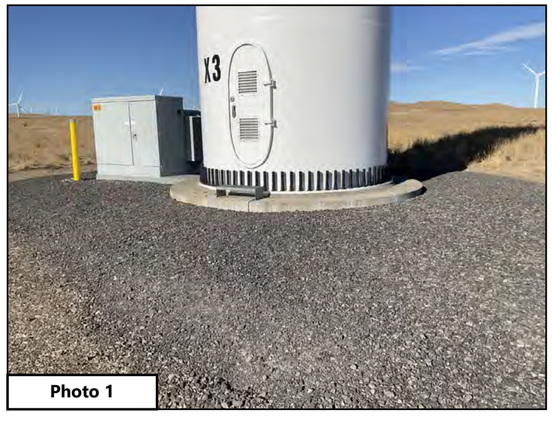

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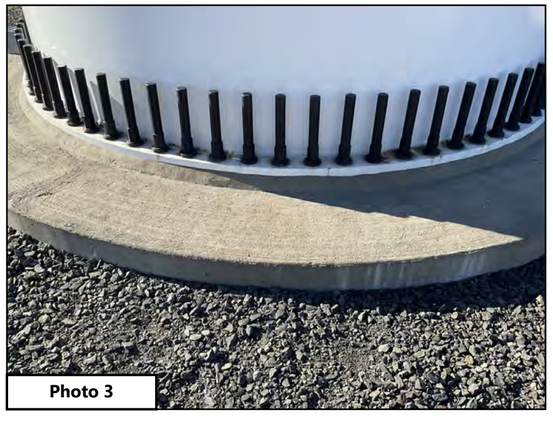
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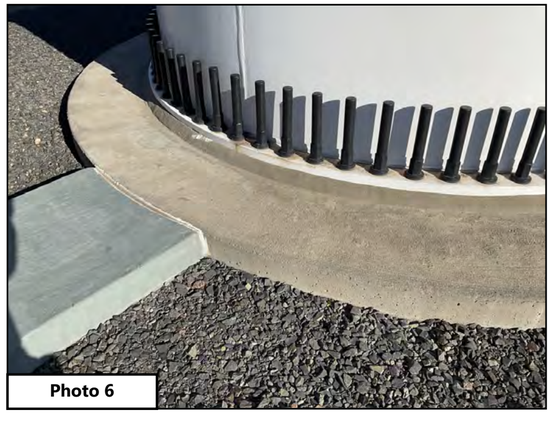
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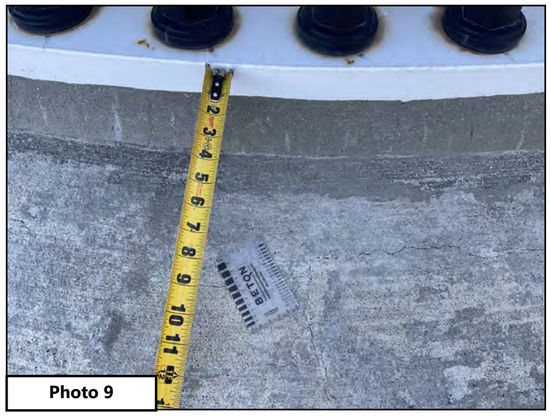
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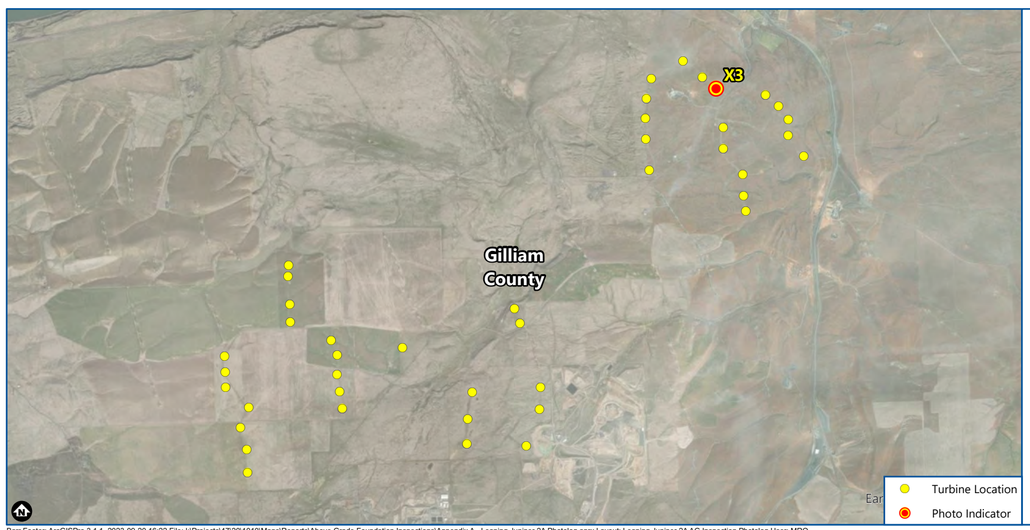

Name: X3

Backfill Condition: Good

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 3 to 8 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.02in. Cracks spaced 2 to 8 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
One anchor bolt cover observed with crack in base.

Additional Notes: Radial cracks observed around pedestal edge extending from edge to circumferential crack. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 6″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 5″

Pedestal Height Measurements - West (inches): 6″

TURBINE X3
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Avangrid Renewables, LLC
Gilliam County, Oregon

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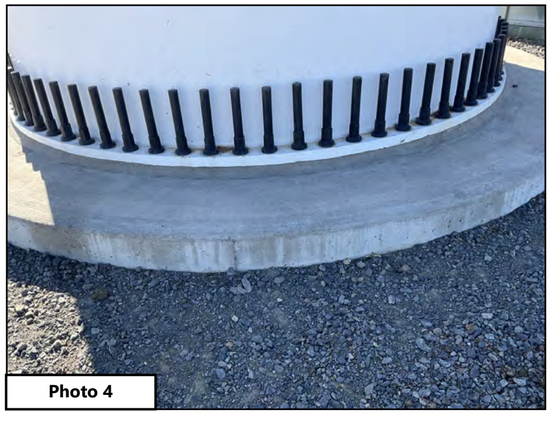
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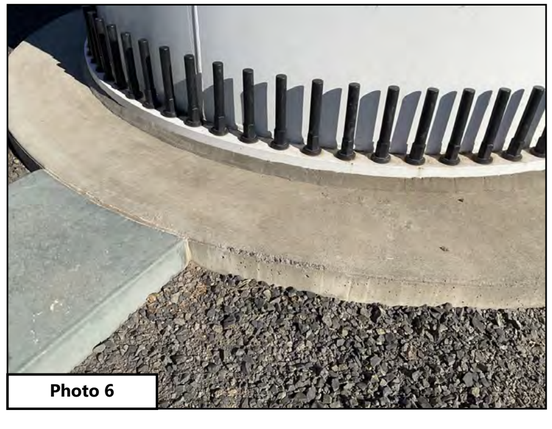
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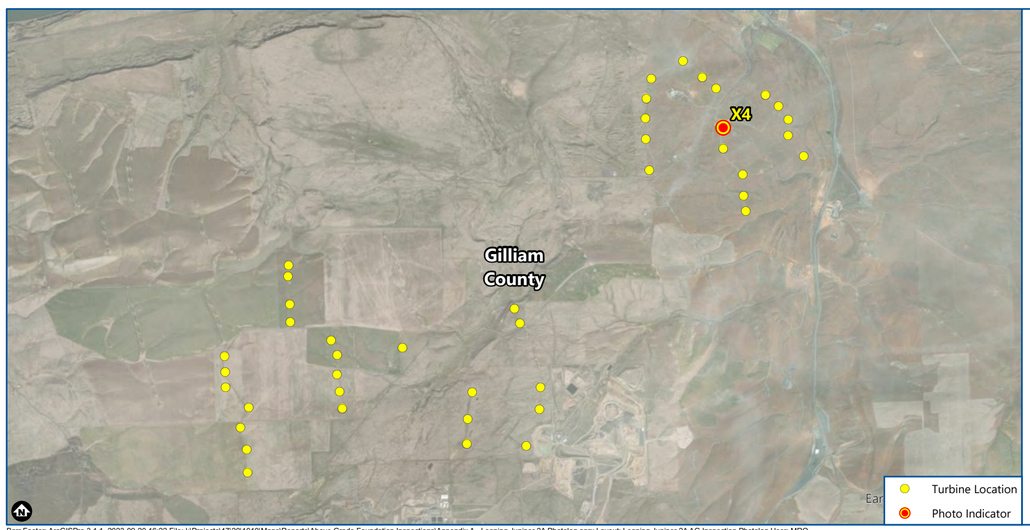

Name: X4

Backfill Condition: Not Good
Low backfill on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack on pedestal on SW side located 4 to 7 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.024in. Crack spacing is 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Five anchor bolts covers with cracks or holes.

Additional Notes: Radial cracks observed around pedestal edge extending from edge towards circumferential crack or flange. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE X4
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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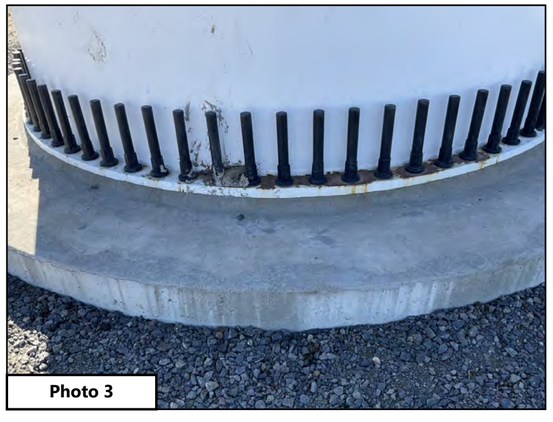
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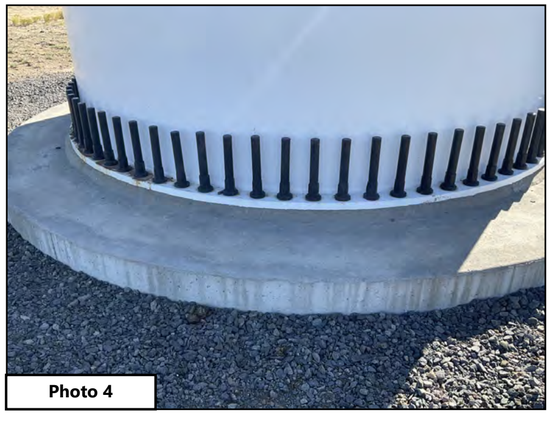
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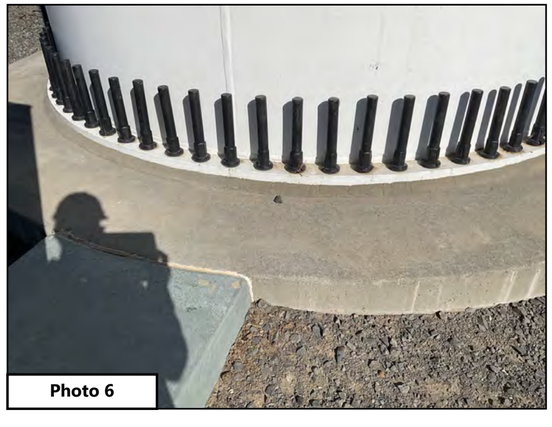
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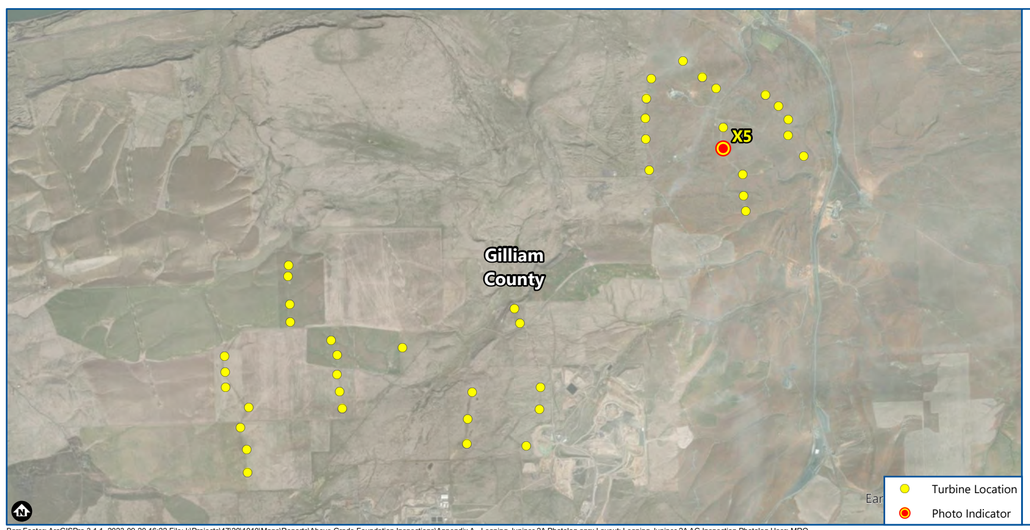

Name: X5

Backfill Condition: Not Good
Low backfill on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed on East side of pedestal located 4 to 7 inches from tower flange. Max crack width is 0.012in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.02in. Cracks spaced 4 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Twenty six anchor bolt covers with cracks in base.

Additional Notes: Radial cracks observed around pedestal edge extending from edge towards flange or circumferential crack. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 9″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE X5
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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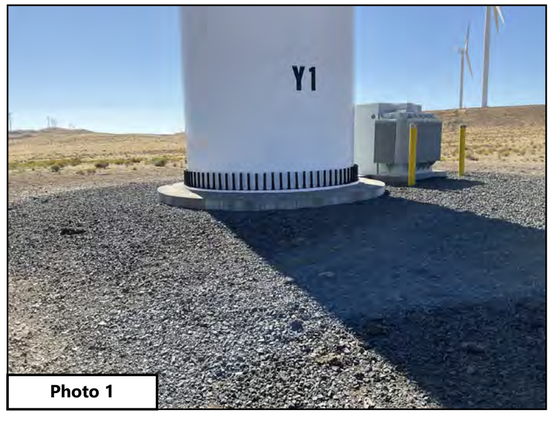

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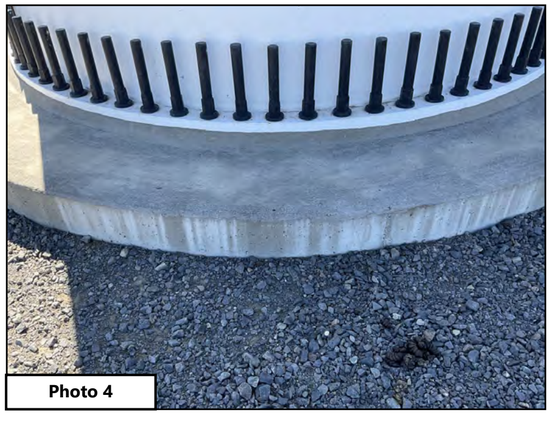
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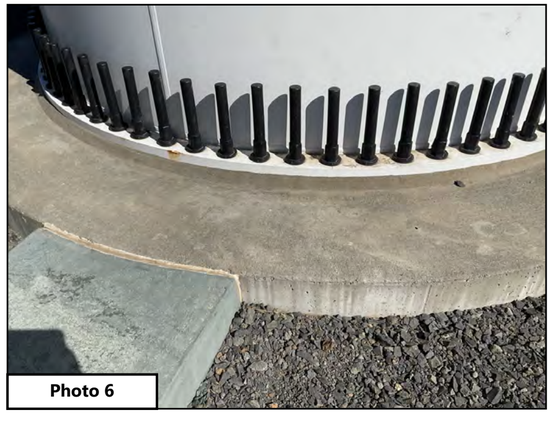
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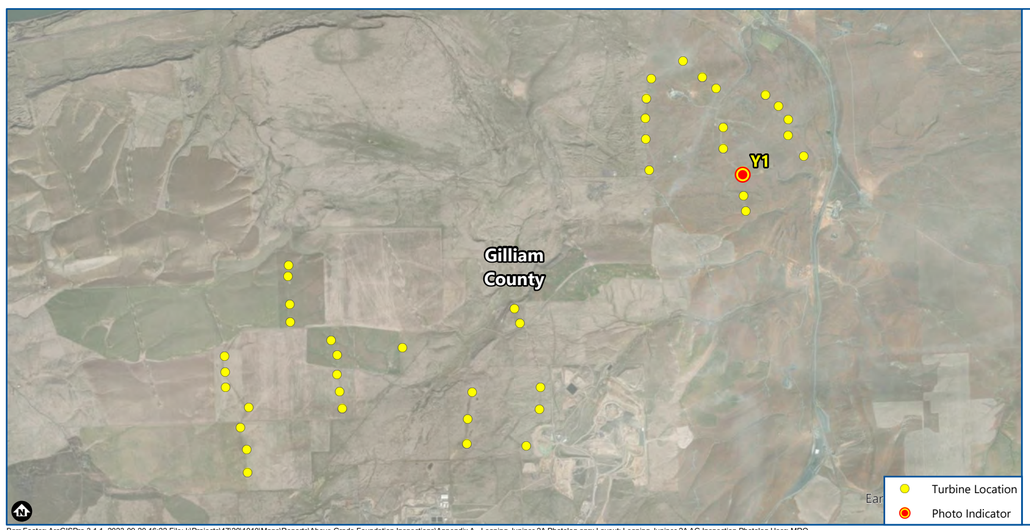

Name: Y1

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 9 inches from tower flange. Max crack width is 0.012in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.016in. Cracks spaced 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
One anchor bolt cover with damage to top.

Additional Notes: Radial cracks observed around pedestal edge extending from edge towards circumferential crack and tower flange. Max crack width is 0.012in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 8″

Pedestal Height Measurements - West (inches): 7″

TURBINE Y1
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

Leaning Juniper 2A Wind Project
Avangrid Renewables, LLC
Gilliam County, Oregon

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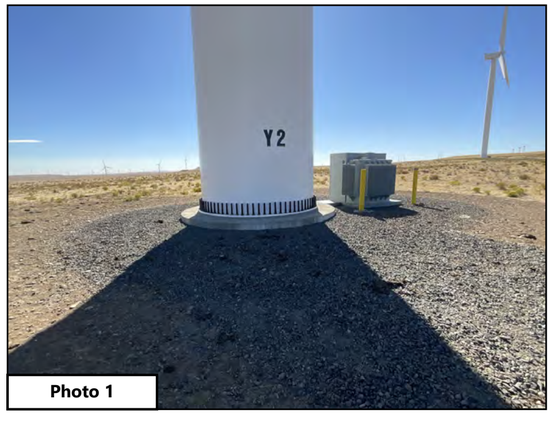

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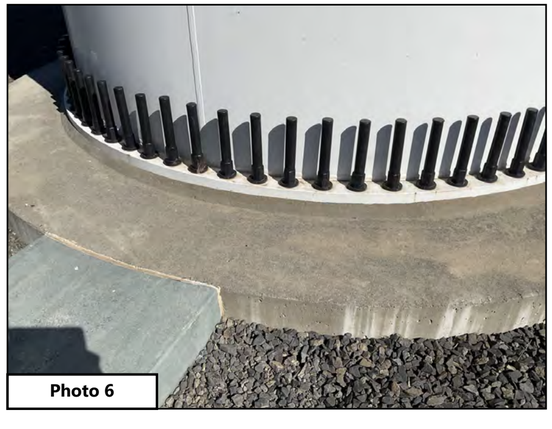
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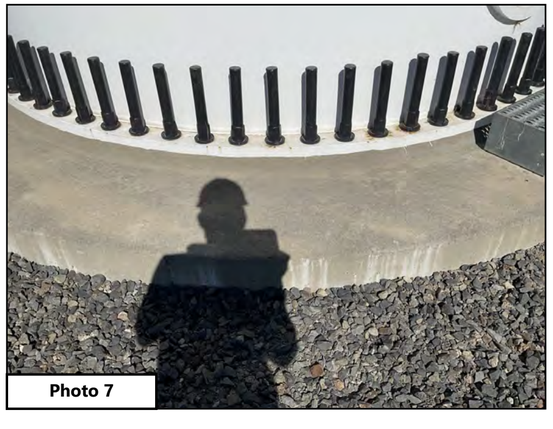
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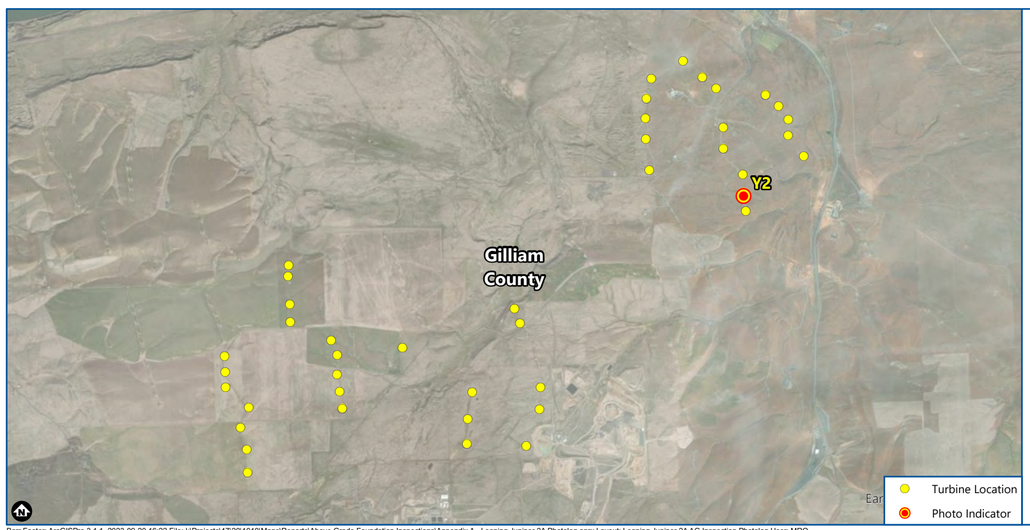

Name: Y2

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around pedestal on East and West sides. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to tower flange. Max crack width is 0.012in. Cracks spaced 2 to 12 inches OC.

Sealant Condition: NA
No sealant observed.

Anchor Bolt Cover Condition: Damaged
Six anchor bolt covers with cracks in base.

Additional Notes: Radial cracks observed around pedestal edge extending from edge towards tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE Y2
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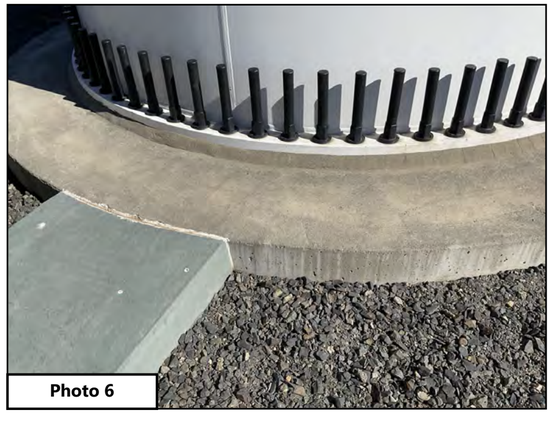
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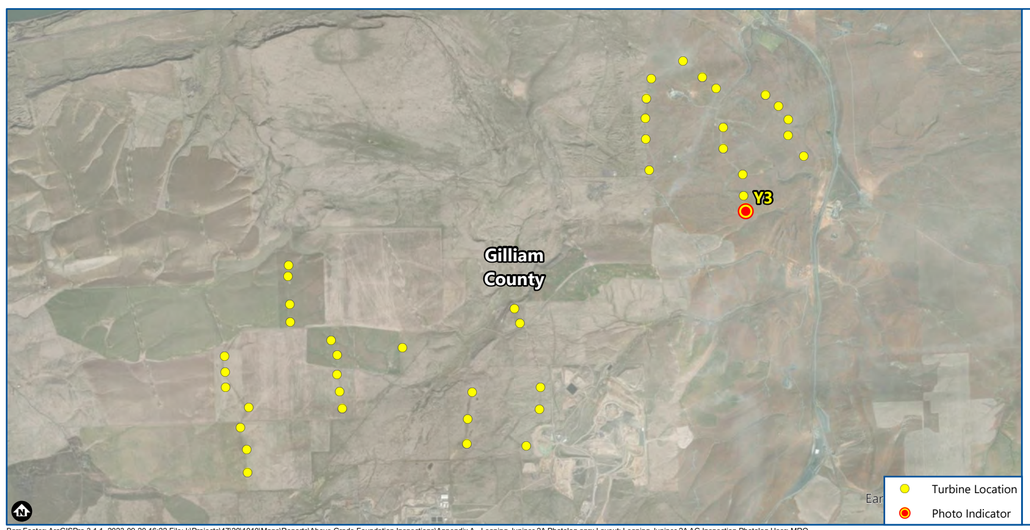

Name: Y3

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to flange. Max crack width is 0.028in. Cracks spaced 3 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Two anchor bolt covers with cracks in base.

Additional Notes: Radial cracks observed around pedestal extending from pedestal edge towards circumferential crack and tower flange. Max crack width is 0.016in.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 8″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE Y3
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Avangrid Renewables, LLC
Gilliam County, Oregon

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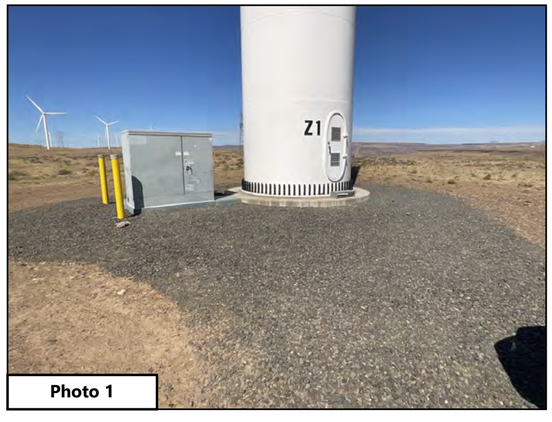

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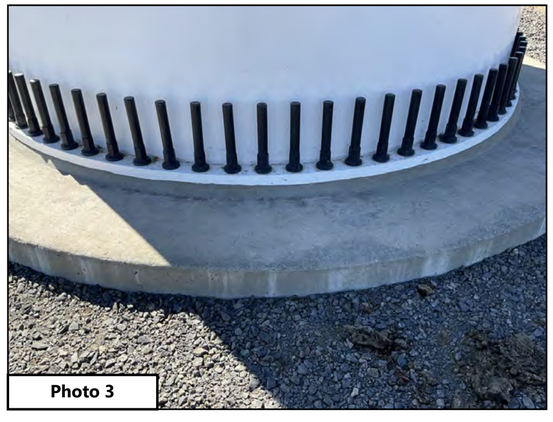
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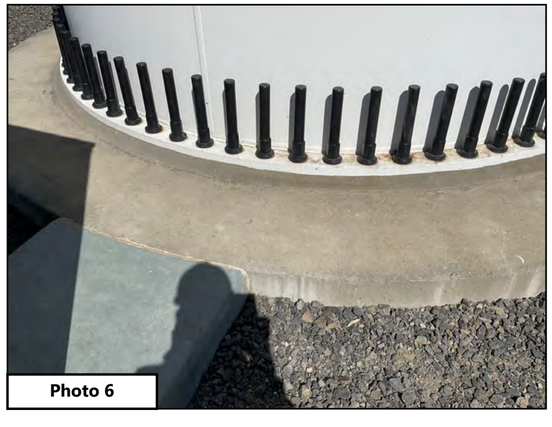
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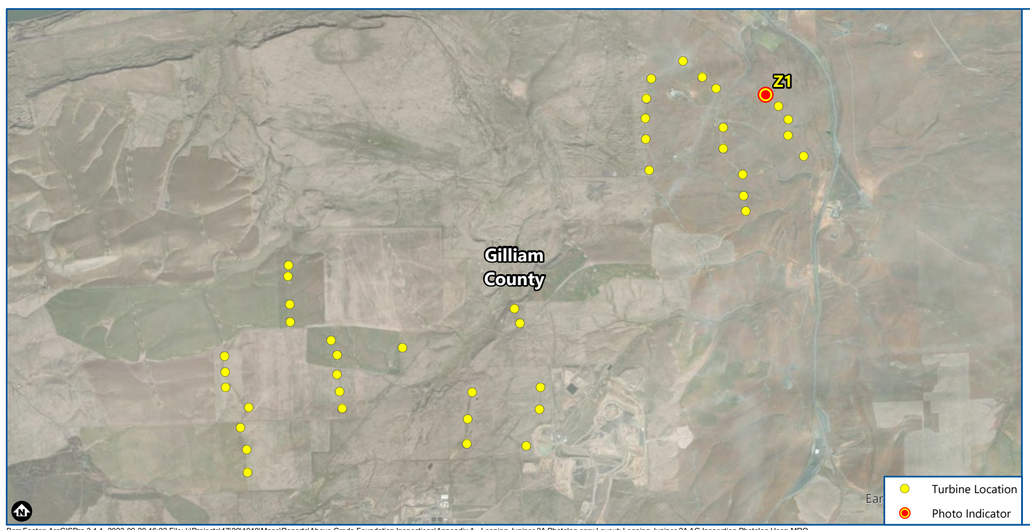

Name: Z1

Backfill Condition: Not Good
Backfill low on North, East, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 4 to 8 inches from tower flange. Max crack width is 0.016in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed extending from pedestal to flange. Max crack width is 0.012in. Cracks spaced 8 to 12 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Good
No damaged or missing anchor bolt covers.

Additional Notes: Radial cracks observed around pedestal edge extending towards circumferential crack and tower flange. Max crack width is 0.024in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 6″

Pedestal Height Measurements - West (inches): 7″

TURBINE Z1
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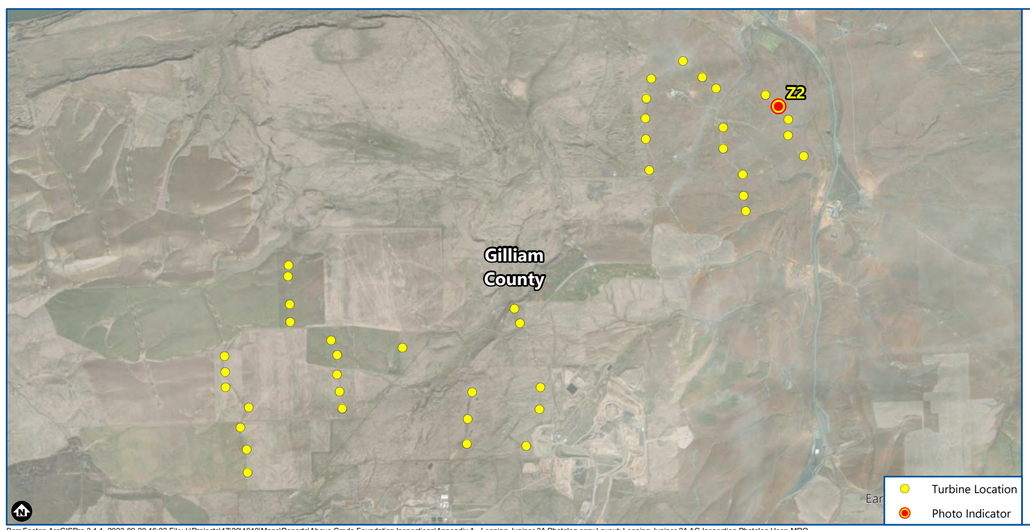

Name: Z2

Backfill Condition:

Pedestal Condtion:

Grout Condition:

Sealant Condition:

Anchor Bolt Cover Condition: Good

Additional Notes: Not inspected, foundation decommisioned.

Pedestal Height Measurements - North (inches):

Pedestal Height Measurements - East(inches):

Pedestal Height Measurements - South(inches):

Pedestal Height Measurements - West (inches):

TURBINE Z2
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Gilliam County, Oregon

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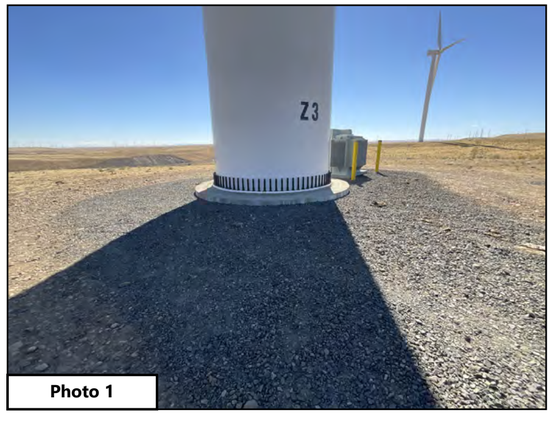

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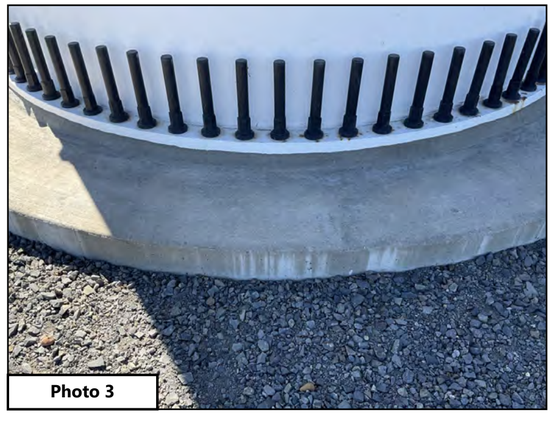
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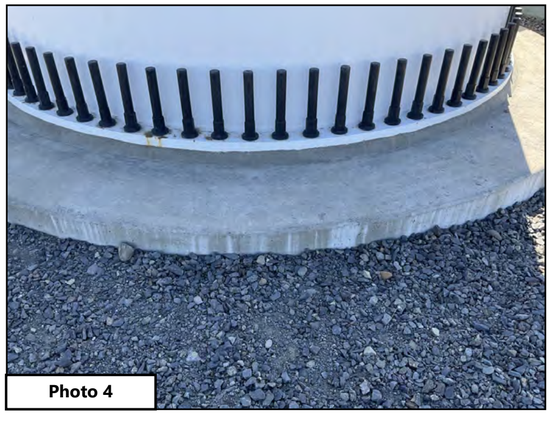
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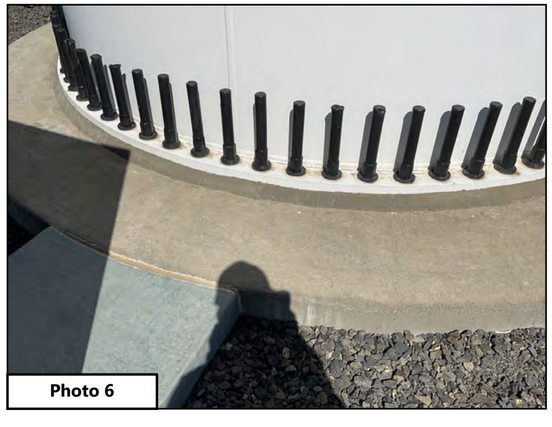
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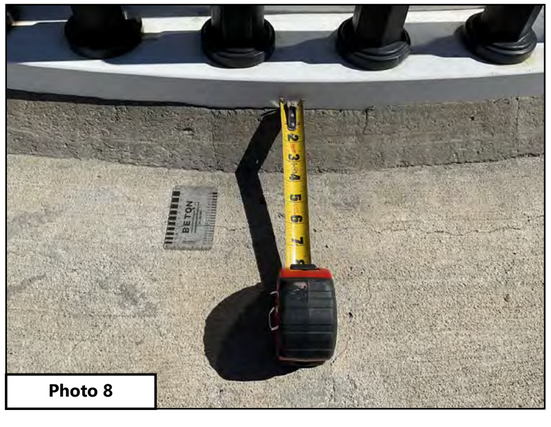
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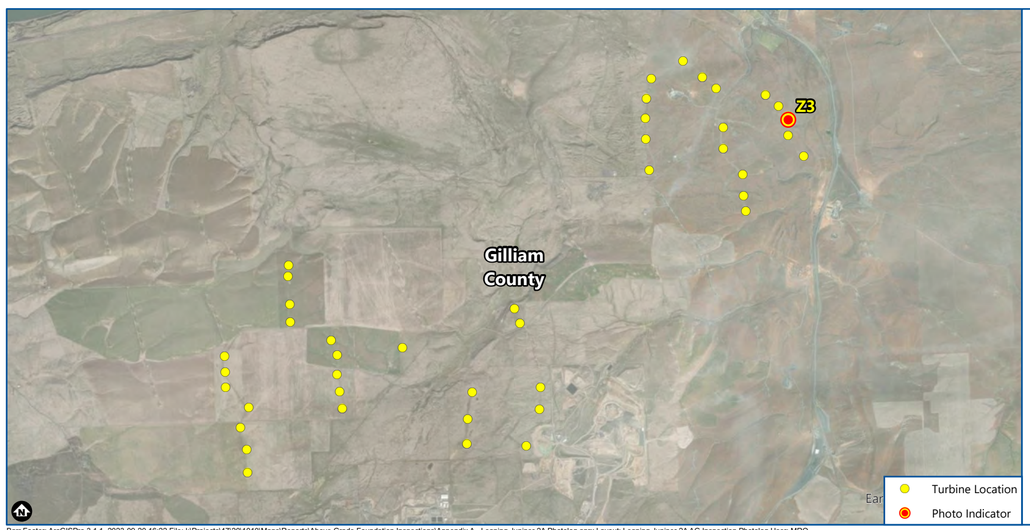

Name: Z3

Backfill Condition: Not Good
Low backfill on North, South, and West sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Radial Cracking
Radial cracks observed around grout bed extending from pedestal to flange. Max crack width is 0.024in. Cracks are spaced 4 to 36 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Six anchor bolt covers with cracks in base or damage to top.

Additional Notes: Radial cracks observed around pedestal edge that extend from edge to circumferential crack or tower flange. Max crack size is 0.024in.

Pedestal Height Measurements - North (inches): 7″

Pedestal Height Measurements - East(inches): 6″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE Z3
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Gilliam County, Oregon

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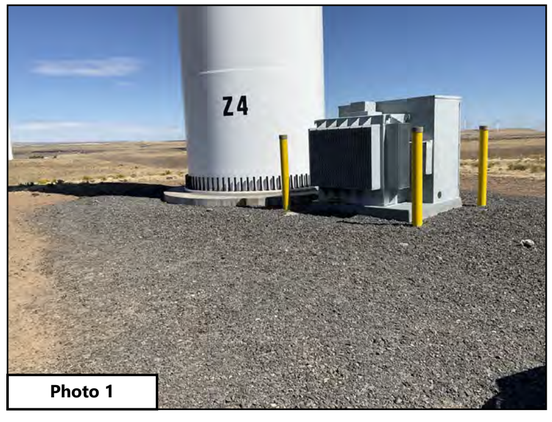

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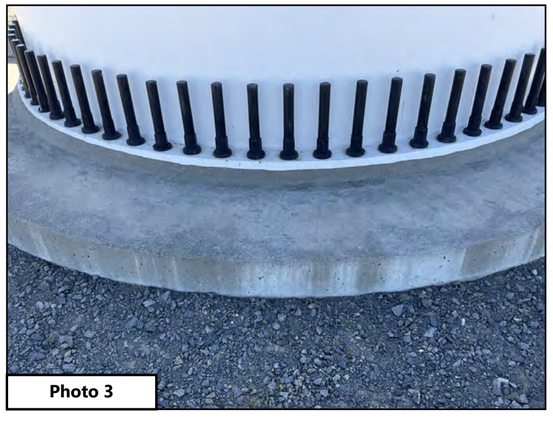
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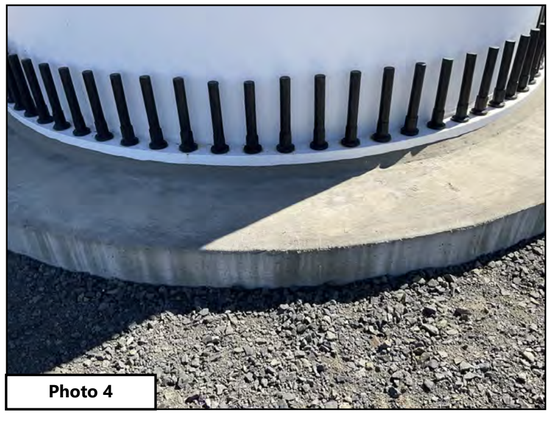
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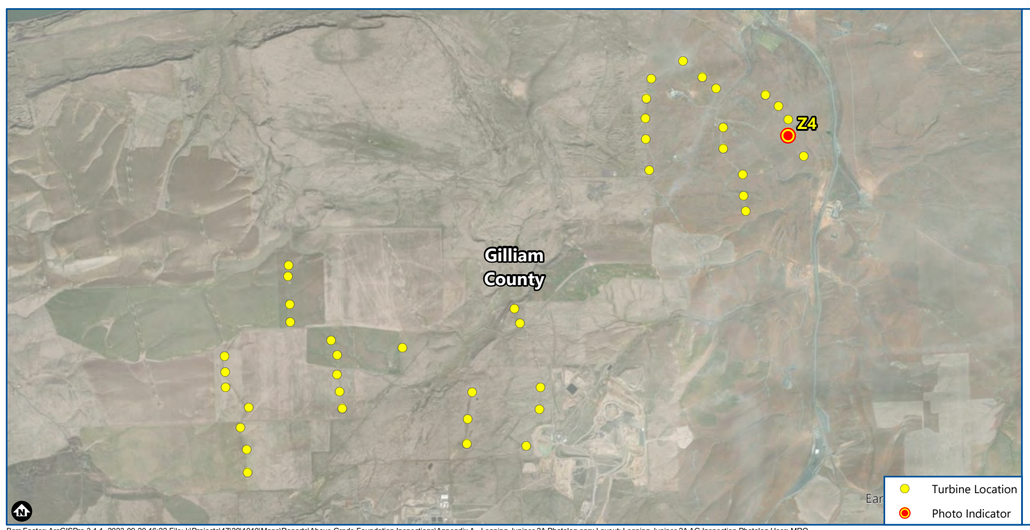

Name: Z4

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 9 inches from tower flange. Max crack width is 0.02in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed from pedestal to flange. Max crack width is 0.02in. Cracks are spaced 4 to 36 inches OC.

Sealant Condition: NA
No sealant present.

Anchor Bolt Cover Condition: Damaged
Four anchor bolt covers with cracks in bases.

Additional Notes: Radial cracks observed extending from pedestal edge to circumferential crack or tower flange. Max crack width is 0.02inm.

Pedestal Height Measurements - North (inches): 8″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 8″

TURBINE Z4
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Avangrid Renewables, LLC
Gilliam County, Oregon

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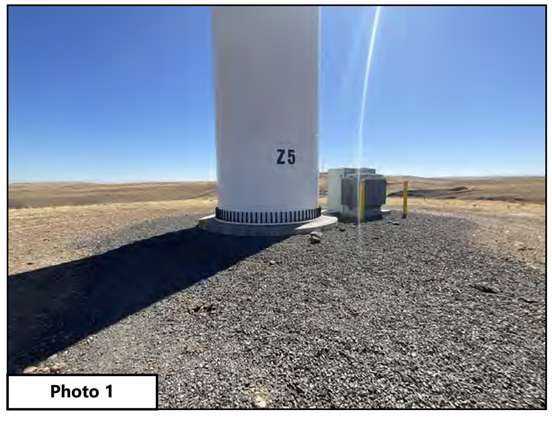

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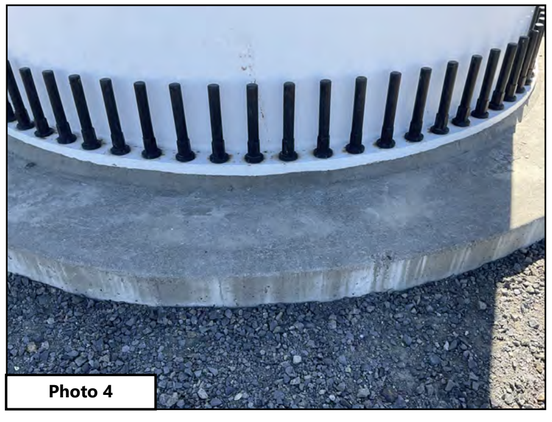
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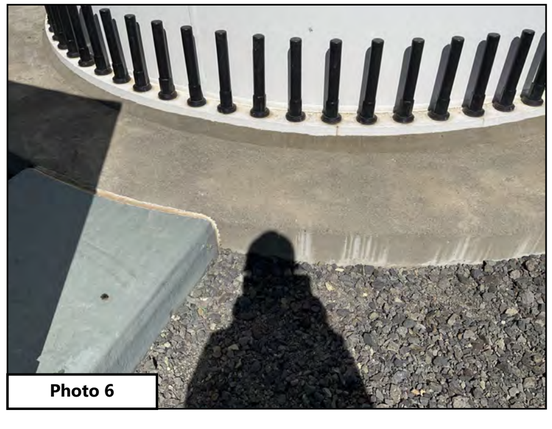
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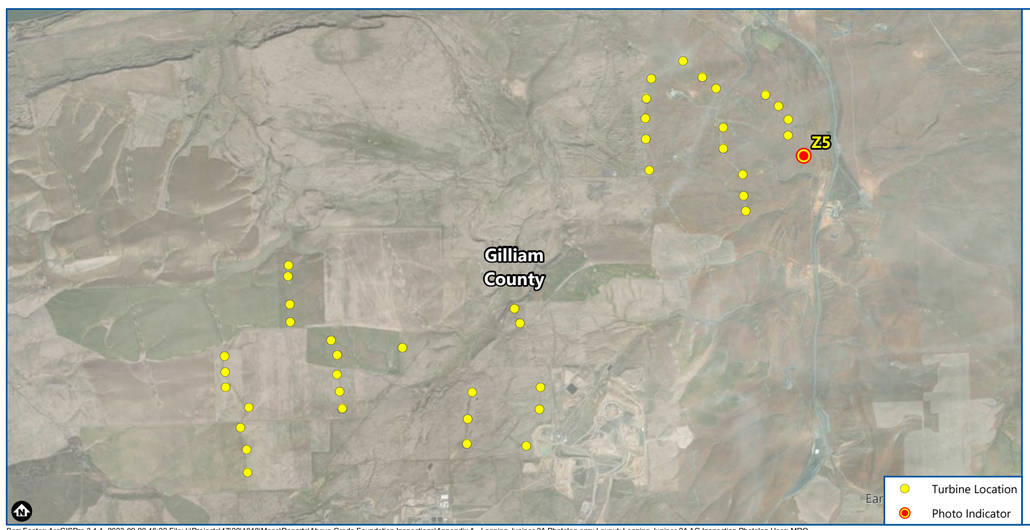

Name: Z5

Backfill Condition: Not Good
Low backfill on all sides.

Pedestal Condtion: Circumferential Cracking
Circumferential crack observed around entire pedestal located 4 to 7 inches from tower flange. Max crack width is 0.024in.

Grout Condition: Radial Cracking
Radial cracks observed in grout bed that extend from pedestal to flange. Max crack width is 0.02in. Cracks are spaced 3 to 18 inches OC.

Sealant Condition: NA

Anchor Bolt Cover Condition: Good

Additional Notes: Radial cracks are observed are the pedestal that extend from the edge to circumferential crack or tower flange. Max crack width is 0.02in.

Pedestal Height Measurements - North (inches): 9″

Pedestal Height Measurements - East(inches): 7″

Pedestal Height Measurements - South(inches): 7″

Pedestal Height Measurements - West (inches): 7″

TURBINE Z5
ABOVE GRADE FOUNDATION INSPECTION SEPTEMBER 2023

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Attachment 4d
Foundation Evaluation Report with Preliminary Retrofit Design

Leaning Juniper IIa Wind Project

Wind Turbine Foundation Evaluation Report
Repowering with a GE2.5-116

Prepared for
Avangrid Renewables, LLC

December 2023

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435-4803
Phone: 952.832.2600
Fax: 952.832.2601

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Appendix A - Foundation Design Drawings and Assessment Calculations

Certifications

I hereby certify that this engineering report was prepared by me or under my direct personal supervision and that I am a duly licensed Engineer under the laws of the State of Oregon.

DRAFT FOR REVIEW

12/14/23

Joel Bahma, P.E.
License Number 75488PE

Date

In addition to the Engineer of Record, the professional staff involved in the preparation of this report includes the following:

- Peter Blake, Barr Engineering Co.
- Kali Gustafson, Barr Engineering Co.
- Daniel Johnson, Barr Engineering Co.

1.0 Executive Summary

Under authorization from Avangrid Renewables, LLC (Avangrid), Barr Engineering Co. (Barr) performed a structural assessment of the existing foundations at the Leaning Juniper IIa Wind Project in Oregon. Avangrid proposes to replace the existing turbines with new turbines. The objectives of the structural assessment are as follows:

- Determine if the existing foundation can accommodate the design loads provided by GE for the GE2.5-116 wind turbine using 2023 industry design standards or variations as further specified.
- Identify the foundation elements that do not meet standards, if any.
- Make recommendations as to the course of action to be undertaken, if necessary.

The Leaning Juniper IIa foundations were analyzed for the S88-2.1 baseline and GE2.5-116 repower wind turbine loads. The foundations passed most of the design checks with one exception related to fatigue loading:

1. The concrete bearing fatigue strength is inadequate when only the baseline fatigue loading is considered.

Barr recommends a foundation upgrade to address the concrete bearing fatigue strength. The upgrade could consist of:

A. Providing confinement of the pedestal concrete with a reinforced concrete collar around the existing pedestal.
B. Providing confinement of the pedestal concrete with a fiber-reinforced polymer wrap around the existing pedestal.

The tension in the anchor bolts is critical to ensuring that the anchor bolts have the capacity to resist fatigue stresses due to the oscillating nature of the tension applied by the wind turbine tower to the bolts. A common maintenance practice is for 10% of the anchor bolts on each foundation to be checked for adequate tension at an annual or similar interval and for all bolts to be re-tightened if any bolt fails the tension check. Barr recommends that this maintenance program or a similar practice be followed for this project site.

Barr's analysis and calculations rely on the foundation loading provided by GE and are dependent on the GE load data being correct. The GE load data cannot be independently confirmed. The actual loads experienced by the foundation will likely vary depending on weather conditions and equipment performance.

2.0 Introduction

Avangrid is considering the repowering of the existing wind turbines at the Leaning Juniper IIa Wind Project. **Table 2-1** below lists the project name, project location, original foundation designer, the existing wind turbine, and the repower wind turbine model. The existing foundation design was based on a fatigue spectrum with a 20 year design life and Avangrid would like to utilize the existing foundations for an additional 25 year life following the repowering.

Table 2-1 Project, Location, Original Designer, Original Turbine, and Repower Turbine

Project Name	State	Original Foundation Drawing IFC Date	Estimated Repowering Date	Original Foundation Designer	Existing Turbine	Repower Turbine
Leaning Juniper IIa	Oregon	August 2009	December 2024	Barr	S88 2.1 MW 79.2m HH	GE2.5-116 81m HH

Foundation design drawings and assessment calculations for the Leaning Juniper IIa Wind Project are included in **Appendix A**.

3.0 References, Codes and Standards

3.1 Project Documents

Four project-related documents were used to help with structural assessment of the foundations. These documents are the GE foundation load document, the original Barr design drawings, the original geotechnical report, and the original Barr design computations.

3.2 Codes, Standards, and Technical References

A detailed list of key codes, standards, and technical references is provided in **Section 8.2** of this report. These documents were used as a basis for this assessment and are called the "2023 standards". A visual summary of these documents is shown on **Figure 3-1** below.

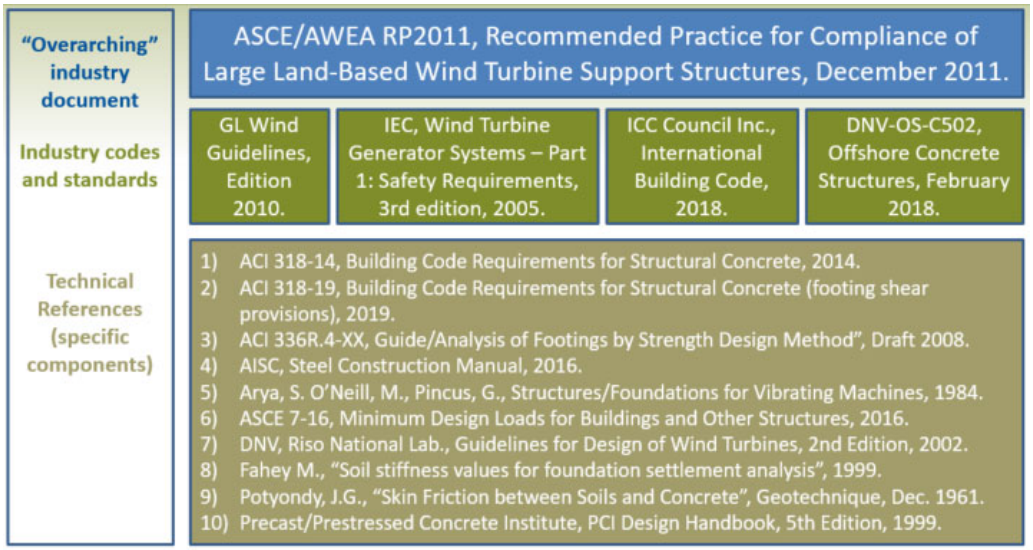


Figure 3-1 Organization of Codes, Standards, and Technical References

Wind turbines are unique structures with specialized concerns of highly eccentric loads and dynamic loading induced from rotating machinery. Structural design codes are typically intended for buildings or bridges and designers must be aware of areas where structural codes are not adequate. The result of this fact is that towers and foundations are designed using a combination of building codes and other standards:

- ASCE/AWEA joint committee produced a recommended practice document for design of wind energy structures that provides an overall framework for the design of wind turbine support structures, directing the designer to other design codes for specific elements of structural design.
- The GL Wind Guidelines provide guidance on the load cases to be considered and general guidance on design criteria for wind turbine support structures.
- IEC 61400 and ASCE 7 provide the basis for load development.

- International Building Code (and incorporated ACI documents) is utilized for reinforced concrete design capacities but does not address fatigue strength of reinforced concrete.
- DNV's standard for offshore concrete structures is used for fatigue strength of reinforced concrete members.
- Specific technical standards are incorporated for other design considerations.

Section 8.2.1 lists documents referenced by building codes in the United States for the structural design of reinforced concrete foundations. **Section 8.2.2** lists industry standards which, while not referenced by building codes, were written specifically to apply to the design of wind turbine support structures. **Section 8.2.3** lists technical references that prescribe methods or approaches which were used in Barr's assessment.

4.0 Design Loads

4.1 Wind Turbine Loads

4.1.1 GE2.5-116 81m HH

Wind turbine loads were calculated by GE in accordance with IEC 61400-1 (**Standard 4**) and presented in the foundation load document (**Project Document 1**).

4.1.2 Wind Turbine Accidents and Abnormal Operation

Barr's analysis and calculations rely on the foundation loading provided by GE and are dependent on the GE load data being correct. The GE load data cannot be independently confirmed. The actual loads experienced by the foundation will likely vary depending on weather conditions and equipment performance.

4.2 Seismic Loads

The seismicity for the project site is low with the original geotechnical report (**Project Document 3**), indicating the unadjusted S_s and S_1 values are 0.45 and 0.15 respectively. The seismic plus operating load is not a critical design load case.

4.3 Buoyancy Loads

As indicated by the original geotechnical report (**Project Document 3**) no evidence of a current water table was found during the boring investigations, and groundwater was not considered to be a factor in the original foundation design. Thus, loads due to buoyancy were not evaluated in this analysis.

4.4 Soil Backfill Loads

Construction data was provided and reviewed for backfill placed at the foundations. The average dry density for backfill placed at all foundations was 109 pounds per cubic foot (pcf), and the average site moisture content was 8.7%. These values result in a moist density of 118 pcf used in this analysis.

Also included in the 2023 design procedures and in accordance with ACI 336R.4 (**Technical Reference 1**), an additional effect due to soil edge friction was idealized as a "soil wedge" when performing stability and ultimate strength checks. The soil wedge is not considered for fatigue strength checks.

5.0 Structural Assessment

Barr conducted a structural assessment of the existing foundations in accordance with 2023 standards. The assessment considered loads for the existing S88-2.1 turbine and repower GE2.5-116 turbine as outlined in **Project Document 1**. This assessment was conducted by calculation only and did not include a physical inspection or condition assessment of the existing foundations.

5.1 Global Stability, Bearing Capacity and Stiffness

5.1.1 Foundation Summary

The foundation global checks are summarized in **Table 5-1**.

Table 5-1 Summary of Global Stability, Bearing Capacity and Stiffness Assessment

Paragraph Number	Design Item	Leaning Juniper IIa	Acceptance Criteria
5.1.2	Factor of Safety Against Sliding	12.5	>1.5
5.1.2	Factor of Safety Against Overturning – Check #1	3.2	>1.5
5.1.2	Factor of Safety Against Overturning – Check #2	1.9	>1.0
5.1.3	Normal Load Bearing Contact Length	100%	100%
5.1.3	Extreme Load Bearing Contact Length	89%	>50%
5.1.4	Normal Load Bearing Capacity Utilization Ratio	0.81	<1.00
5.1.4	Extreme Load Bearing Capacity Utilization Ratio	0.67	<1.00
5.1.4	Abnormal Load Bearing Capacity Utilization Ratio	0.73	<1.00
5.1.4	Seismic Load Bearing Capacity Utilization Ratio	0.68	<1.00
5.1.5	Rotational Stiffness	4.0	>1.0
5.1.5	Translational Stiffness	1.3	>1.0

5.1.2 Overturning and Sliding Stability

Barr computed a factor of safety against overturning on service level extreme loads in accordance with **Standards 1** and **4**.

5.1.3 Foundation Base Soil Bearing Contact Length

Barr computed the foundation bearing contact length with the soils beneath under normal and extreme loads in accordance with **Technical Reference 4** which conservatively assumes an infinitely stiff foundation on an infinitely stiff subgrade.

5.1.4 Foundation Bearing Capacity

Based on the original geotechnical report (**Project Document 3**) allowable gross bearing capacities of 2,800 psf and 3,700 psf were used in the evaluation for normal and extreme loads, respectively. The

bearing capacity utilization factor is defined as the applied bearing pressure divided by the allowable bearing pressure.

5.1.5 Foundation Stiffness

Project Document 1 lists a minimum required foundation rotational stiffness of 20 GigaNewton meters per radian (GN-m/rad) and a concurrent minimum foundation lateral stiffness of 1,000 MegaNewton per meter (MN/m).

A strain reduction factor in accordance with Fahey (**Technical Reference 5**) was applied to be consistent with 2023 design procedures.

5.2 Tower/Foundation Connection Ultimate Strength

In the following sections, the "strength utilization ratio" is defined as the effect of the design load divided by the design strength. The strength utilization ratio must be less than 1.0 for the design element to pass.

5.2.1 Concrete Properties

The original foundation design specified a minimum 28-day compressive strength of concrete of 5,000 psi for the footing and pedestal. According to guidance in ACI 318 (**Code 1a**), Barr estimated an equivalent in-place compressive strength of concrete based on analysis of cylinder tests from the original construction. Construction test records were reviewed for cylinders that were broken at 28 days. Compressive strengths of 6,278 psi and 5,589 psi were calculated for the footing and pedestal, respectively, and were used in this evaluation.

Additionally, ACI 318 (**Code 1a**) allows for a favorable increase in the strength reduction factors from concrete design (0.8 for bearing, 0.8 for shear, and 1.0 for tension-controlled flexure) when as-built material properties are analyzed.

5.2.2 Foundation Summary

The tower/foundation connection strength design checks are summarized in **Table 5-2**.

Table 5-2 Summary of Tower/Foundation Connection Ultimate Strength Assessment

Paragraph Number	Design Item	Leaning Juniper IIa	Acceptance Criteria
5.2.3	Anchor Bolt Strength Utilization Ratio	0.52	<1.00
5.2.4	Bottom Flange Bearing on Pedestal Concrete Strength Utilization Ratio	0.78	<1.00
5.2.5	Grout Strength Utilization Ratio	0.93	<1.00
5.2.6	Embedment Plate/Anchor Bolt Pull-out Strength Utilization Ratio (steel only)	0.53	<1.00
5.2.7	Embedment Plate Strength Utilization Ratio	0.72	<1.00

5.2.3 Anchor Bolt Strength

The anchor bolt strength was checked in accordance with AISC (**Code 1b**).

The tension in the anchor bolts is critical to ensuring that the anchor bolts have the capacity to resist fatigue stresses due to the oscillating nature of the tension applied by the wind turbine tower to the bolts. A common maintenance practice is for 10% of the anchor bolts on each foundation to be checked for adequate tension at an annual or some other interval and for all bolts to be re-tightened if any bolts fail the tension check.

5.2.4 Bottom Flange Bearing on Concrete Pedestal Strength

Bottom flange bearing on the concrete pedestal was checked in accordance with ACI 318 (**Code 1a**).

5.2.5 Grout Strength

Bottom flange bearing on the grout was checked in accordance with ACI 318 (**Code 1a**).

5.2.6 Embedment Plate/Anchor Bolt Pull-out Strength

The calculations indicate that the ultimate strength of the anchorage is adequate when the strength of only the vertical reinforcing is considered. This methodology is consistent with AWEA/ASCE (**Standard 1**).

5.2.7 Embedment Plate Strength

The embedment plate strength was checked in accordance with AISC (**Code 1b**).

5.3 Reinforced Concrete Ultimate Strength

Reinforced concrete ultimate strength design checks were performed in accordance with the requirements of ACI 318 (**Code 1a**). Size effects in concrete shear strength were also considered (**Technical Reference 3**). The design check procedures also used **Technical Reference 1** and **4** for calculation of soil bearing and friction resistances. Characteristic design loads were factored in accordance with ACI 318 (**Code 1a**), AWEA/ASCE (**Standard 1**), and IEC (**Standard 4**).

5.3.1 Foundation Summary

The foundation ultimate strength design checks are summarized in **Table 5-3**.

Table 5-3 Summary of Reinforced Concrete Ultimate Strength Assessment

Paragraph Number	Design Item	Leaning Juniper IIa	Acceptance Criteria
5.3.2	Footing Concrete One-Way Shear ACI 318-19 Strength Utilization Ratio	0.35	<1.00
5.3.3	Footing Bottom Reinforcing Moment Strength Utilization Ratio	0.26	<1.00
5.3.3	Footing Top Reinforcing Moment Strength Utilization Ratio	0.96	<1.00
5.3.4	Footing Two-Way Shear Strength Utilization Ratio	0.29	<1.00

5.3.2 Footing Concrete One-Way Shear Strength

Barr calculated the footing concrete one-way shear strength in accordance with the requirements of ACI 318-19 (**Technical Reference 3)** to account for size effects associated with the thickness of the footing.

5.3.3 Footing Moment Strength

The top and bottom reinforcing bars were checked in accordance with ACI 318 (**Code 1a**) in orthogonal directions (east-west, north-south), at 45 degrees to the orthogonal, and at the cut-off locations. Moment strength was checked across the entire foundation width at the critical section as specified in section 15.4 of ACI 318 (**Code 1a**).

5.3.4 Footing Two-Way Shear Strength

The two-way shear strength of the footing was checked in accordance with ACI 318 (**Code 1a**). The fraction of the unbalanced moment that could be carried by the flexural reinforcing steel was calculated, with the remainder carried by concrete shear.

5.4 Reinforced Concrete Fatigue Strength

Reinforced concrete fatigue strength was checked in accordance with provisions contained in the DNV Offshore Standard (**Standard 2**), thus meeting the requirements of AWEA/ASCE (**Standard 1**). A duration of 20 years is the standard design life prescribed by IEC (**Standard 4**). GE assumed a fatigue life of 20 years when forming the repower turbine fatigue loading (**Project Document 1**). Barr modified the number of cycles in the GE loading by a factor of 25/20 to evaluate for a 25 year repower fatigue life. The fatigue strength assessment evaluated 15.4 years of cycles for the S88-2.1 and 25 years for the GE2.5-116 for a total of 40.4 years.

5.4.1 Foundation Summary

The foundation fatigue strength design checks are summarized in **Table 5-4.**

Table 5-4 Summary of Reinforced Concrete Fatigue Strength Assessment

Paragraph Number	Design Item	Leaning Juniper IIa		Acceptance Criteria
N/A	Evaluated Duration	15.4 years Baseline only	40.4 years Baseline + Repower	N/A
5.4.2	Footing Concrete Compression Cumulative Damage	0.00	0.00	<1.00
5.4.3	Footing Concrete One-Way Shear Cumulative Damage	0.00	0.00	<1.00
5.4.4	Grout Bearing Cumulative Damage	0.00	0.06	<1.00
5.4.5	Pedestal Concrete Bearing Cumulative Damage	**220451873531**	**>>220451873531**	<1.00
5.4.6	Embedment Plate/Anchor Bolt Concrete Pull-out Cumulative Damage (steel only)	0.02	0.44	<1.00
5.4.7	Bottom Reinforcing Cumulative Damage	0.00	0.00	<0.50
5.4.8	Top Reinforcing Cumulative Damage	0.00	0.07	<1.00

5.4.2 Footing Concrete Fatigue Strength in Beam Compression

Footing concrete in beam compression was checked in accordance with DNV (**Standard 2**).

5.4.3 Footing Concrete Fatigue Strength in One-Way Shear

Footing concrete fatigue strength in one-way shear was checked using provisions contained in DNV (**Standard 2**). The one-way shear was checked at the critical section for shear as specified in section 11.1.3.1 of ACI 318 (**Code 1a**). It is industry standard practice to assume that a portion of the cross section resists the load from the entire cross section because the outer portions of the foundation have reduced stiffness and redistribution of load is generally not assumed for fatigue loading. Barr assumed an effective foundation width of the embedment ring diameter plus three times the footing thickness for this check to resist all one-way shear required for static equilibrium. Barr is not aware of any standard that specifically

prescribes an effective foundation width to be used in this calculation. The width selected by Barr is specified in ACI 318 (**Code 1a**) for an analogous application related to reinforced concrete ultimate strength design.

5.4.4 Grout Fatigue Strength in Bearing

Grout fatigue strength in bearing was checked using the provisions contained in DNV (**Standard 2**).

5.4.5 Pedestal Concrete Fatigue Strength in Bearing

Pedestal concrete fatigue strength in bearing was checked using the provisions contained in DNV (**Standard 2**). Since no reinforcement for bursting forces below the pedestal is present, the angle of load spreading was set to 0 degrees.

The pedestal concrete fatigue strength in bearing was found to be inadequate. See **Section 6.0.**

5.4.6 Footing Concrete Fatigue Strength in Embedment Plate/Anchor Bolt Pull-Out

Current design practices (**Standard 1**) require that the strength of only the concrete shear resistance or the vertical reinforcing be considered, i.e., these two resistances should not be added together. The fatigue strength of the Z-bar anchorage was found to be adequate when the strength of only the vertical reinforcing resistance is considered.

5.4.7 Bottom Reinforcing Fatigue Strength in Tension

Bottom reinforcing fatigue strength was checked using provisions contained in DNV (**Standard 2**). A limit of 0.50 is selected since the bottom steel fatigue damage cannot be inspected. Moment demand was calculated across the entire foundation width at the critical section as specified in section 15.4 of ACI 318 (**Code 1a**). It is industry standard practice to assume that a portion of the cross section resists the load from the entire cross section because the outer portions of the foundation have reduced stiffness and redistribution of load is generally not assumed for fatigue loading. The effective foundation width resisting all bending moment required for static equilibrium in this check was the same width that was used for shear (embedment ring diameter plus three times the footing thickness).

5.4.8 Top Reinforcing Fatigue Strength in Tension

Top reinforcing fatigue strength was checked using provisions contained in DNV (**Standard 2**). Moment strength was checked across the entire foundation width at the critical section as specified in section 15.4 of ACI 318 (**Code 1a**) as well as the location of bending in the reinforcement. It is industry standard practice to assume that a portion of the cross section resists the load from the entire cross section because the outer portions of the foundation have reduced stiffness and redistribution of load is generally not assumed for fatigue loading. The effective foundation width resisting all bending moment required for static equilibrium in this check was the same width that was used for shear (embedment ring diameter plus three times the footing thickness).

6.0 Recommendations

The Leaning Juniper IIa foundations were analyzed for the S88-2.1 baseline and GE2.5-116 repower wind turbine loads. The foundations passed most of the design checks with one exception related to fatigue loading:

1. The concrete bearing fatigue strength is inadequate when only the baseline fatigue loading is considered.

Barr recommends a foundation upgrade to address the concrete bearing fatigue strength. The upgrade could consist of:

A. Providing confinement of the pedestal concrete with a reinforced concrete collar around the existing pedestal.
B. Providing confinement of the pedestal concrete with a fiber-reinforced polymer wrap around the existing pedestal.

The tension in the anchor bolts is critical to ensuring that the anchor bolts have the capacity to resist fatigue stresses due to the oscillating nature of the tension applied by the wind turbine tower to the bolts. A common maintenance practice is for 10% of the anchor bolts on each foundation to be checked for adequate tension at an annual or similar interval and for all bolts to be re-tightened if any bolt fails the tension check. Barr recommends that this maintenance program or a similar practice be followed for this project site.

Barr's analysis and calculations rely on the foundation loading provided by GE and are dependent on the GE load data being correct. The GE load data cannot be independently confirmed. The actual loads experienced by the foundation will likely vary depending on weather conditions and equipment performance.

7.0 Limitations of Analysis

This report contains opinions made by Barr, using its professional judgement and reasonable care. Use or reliance upon this report is subject to the following conditions:

1. The report being read in the context of and subject to the terms of the agreement between Barr and Avangrid, including the methodologies, procedures, techniques, assumptions, and other relevant terms or conditions that were specified or agreed therein.

2. The report being read as a whole, with sections or parts hereof read or relied upon in context.

3. The report is based on information made available to Barr by Avangrid or by third parties and, unless stated otherwise in this report, Barr has not verified the accuracy, completeness, or validity of such information, makes no representations regarding its accuracy and assumes no liability in connection therewith.

4. GE has provided a complete load document that was used for the evaluation. Barr's analysis and calculations rely on the foundation loading provided by GE and are dependent on the GE load data being correct. The GE load data cannot be independently confirmed. The actual loads experienced by the foundation most likely were and will be different from those contained in the loading document, depending on weather conditions, equipment performance, and the occurrence of events not considered in the loads provided by GE.

5. The conclusions and opinions expressed in this report are based on a review of the documents listed in **Section 8.2**, as well as our education, training, and experience as licensed professional engineers. These conclusions and opinions are based on the information that has been provided to us at this time and may be modified or supplemented if new information becomes available.

8.0 References

8.1 Project Documents

1. GE Renewable Energy, Foundation Load Specification for Wind Turbine Generator Systems, Leaning Juniper IIA Repower Oregon (GE Project 1263158) 2.5-116, 60 Hz, 81m Hub Height (Tower plus Adapter), Standard Weather/Cold Weather Extreme, IEC Class S, Rev A 2023-12-13.

2. Barr Engineering Co., Leaning Juniper IIa Wind Project, Arlington, Oregon, Spread Footing Foundation Plan, Elevation, Section & Details, Sheet S-01 Revision 0 Dated August 5, 2009 & Technical Specifications and Submittals, Sheet S-02 Revision 0 Dated August 5, 2009 & Engineered Fill Section and Specifications, Sheet S-03 Revision 0 Dated August 5, 2009 & Pedestal Blockout Plan & Section, Sheet S-04 Revision 1 Dated February 2, 2010.

3. Barr Engineering Co., Geotechnical Engineering Report, Leaning Juniper IIa Wind Project, Arlington, Oregon, August 5, 2009.

4. Barr Engineering Co., Foundation Design Computations, Suzlon S88 2.1 MW, 79.2m HH, Leaning Juniper IIa Wind Project, Iberdrola Renewables, Arlington, Oregon, March 29, 2010.

8.2 Codes, Standards and Technical References

8.2.1 Codes

1. International Code Council Inc., International Building Code, 2018.

    a. American Concrete Institute, ACI 318-14, Building Code Requirements for Structural Concrete, 2014.

        i. American Concrete Institute, ACI 318-19, Building Code Requirements for Structural Concrete, 2019. (one-way shear provisions only)

    b. American Institute of Steel Construction Inc., AISC 360-16, Specification for Structural Steel Buildings, 2016.

    c. American Society of Civil Engineers, ASCE 7-16, Minimum Design Loads for Buildings and Other Structures, 2016.

8.2.2 Standards

1. American Wind Energy Association, American Society of Civil Engineers, ASCE/AWEA RP2011, Recommended Practice for Compliance of Large Land-Based Wind Turbine Support Structures, December 2011.

2. Det Norske Veritas, Offshore Standard DNV-OS-C502, Offshore Concrete Structures, February 2018.

3. Germanischer Lloyd, GL Wind Guidelines, Edition 2010.

4. International Electrotechnical Commission, Wind Turbine Generator Systems – Part 1: Safety Requirements, 3rd edition, 2005.

8.2.3 Technical References

1. American Concrete Institute, ACI 336R.4-XX, "Guide for Analysis of Spread Footings by the Strength Design Method", Draft 2008.

2. Arya, S. O'Neill, M., Pincus, G., Design of Structures and Foundations for Vibrating Machines, Gulf Publishing Company, 1984.

3. American Concrete Institute, ACI 318-19, Footing Shear Provisions, Building Code Requirements for Structural Concrete, 2019.

4. Det Norske Veritas Copenhagen and Wind Energy Department, Riso National Laboratory, Guidelines for Design of Wind Turbines, 2nd Edition, 2002.

5. Fahey M., "Soil stiffness values for foundation settlement analysis", Proc. 2nd Int. Conf. on Pre-Failure Deformation Characteristics of Geomaterials, Torino, Vol. 2, 1325-1332, 1999.

6. Potyondy, J.G., "Skin Friction between Various Soils and Construction Materials", Geotechnique, December 1961.

7. Precast/Prestressed Concrete Institute, PCI Design Handbook, 5th Edition, 1999.

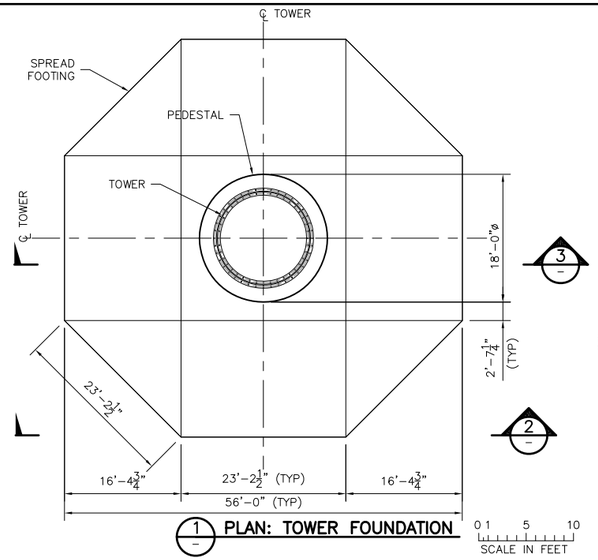
8. Nowak, Andrzej S., and Collins, Kevin R., Reliability of Structures, 2000.

9. Squeglia, Nicholas L., "Zero Acceptance Number Sampling Plans, 5th Edition, 2008.

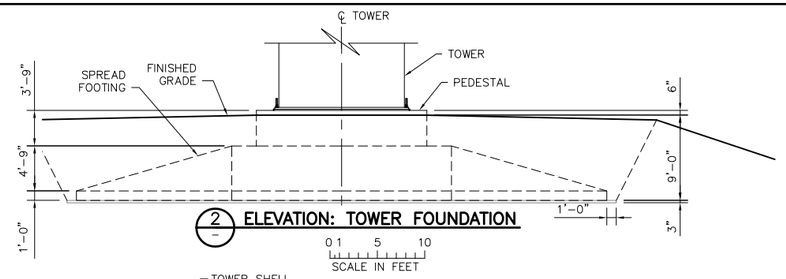
Appendix A

Leaning Juniper IIa – Foundation Design Drawings

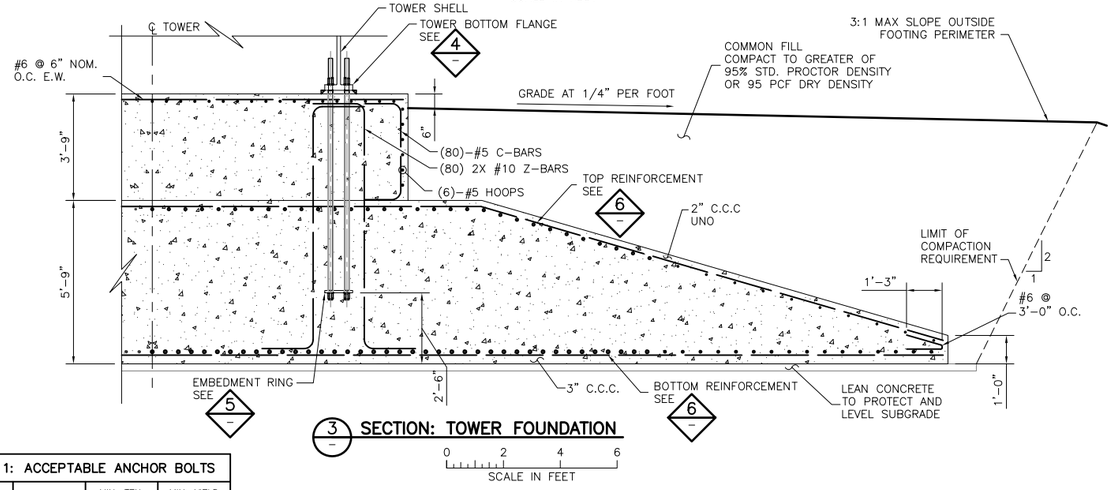
Assessment Calculations Provided Upon Request



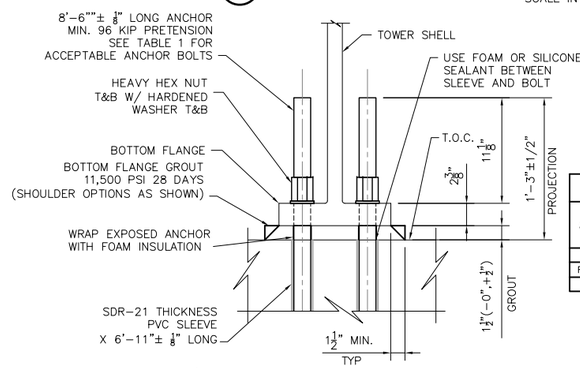
1 PLAN: TOWER FOUNDATION



2 ELEVATION: TOWER FOUNDATION

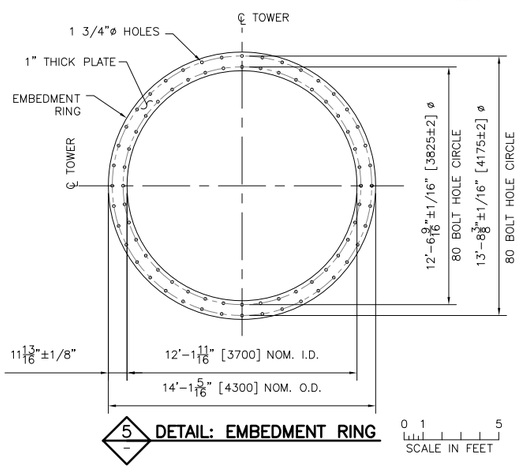


3 SECTION: TOWER FOUNDATION

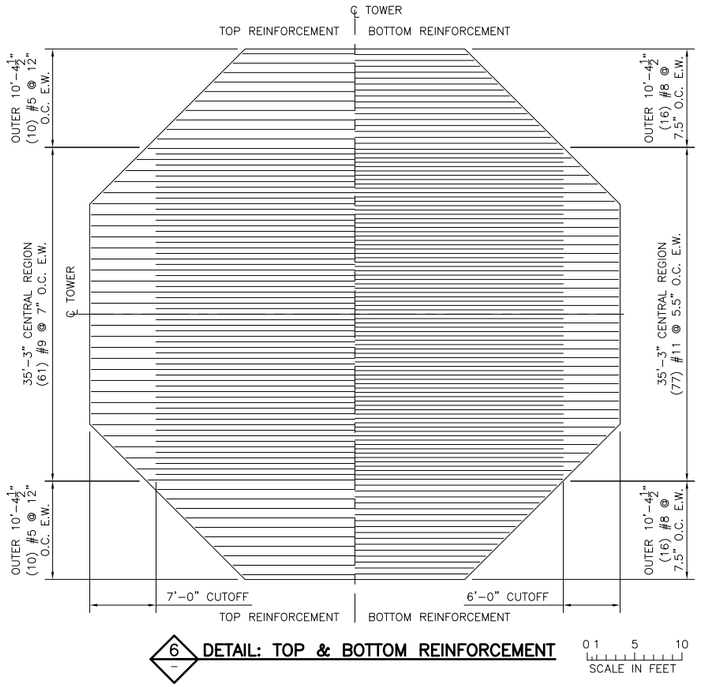


4 DETAIL: TOWER BOTTOM FLANGE

TABLE 1: ACCEPTABLE ANCHOR BOLTS			
ASTM TYPE	NOMINAL DIA. (IN)	MIN. TEN. STRENGTH (KSI)	MIN. YIELD STRENGTH (KSI)
A354 BD	1-3/8	150	130
F1554 GR105	1-1/2	125	105
A722	1-1/4	150	127.7



5 DETAIL: EMBEDMENT RING



6 DETAIL: TOP & BOTTOM REINFORCEMENT

BUILDING AND DESIGN CODES:

INTERNATIONAL BUILDING CODE 2006, INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS.

BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318, 2008, AMERICAN CONCRETE INSTITUTE.

WIND TURBINE AND TOWER:

MANUFACTURER: SUZLON
MODEL: S88
POWER OUTPUT: 2.1 MW
TURBINE HUB HEIGHT: 79.2 m
ROTOR DIAMETER: 88 m

DESIGN SERVICE LOADS:

UNFACTORED SERVICE LOADS DUE TO IEC LOAD CASE 6.2 TCIIIB (CRITICAL)

OVERTURNING MOMENT, Mxy = 59,715 kN-m = 44,044 ft-kips
HORIZONTAL BASE SHEAR, Hxy = 755 kN = 170 kips
VERTICAL TOWER LOAD, Wz = 2,751 kN = 618 kips

FOUNDATION DESIGN DATA:

MIN. FACTOR OF SAFETY AGAINST OVERTURNING: >2.0
MIN. FACTOR OF SAFETY AGAINST SLIDING: >2.0
MIN. FACTOR OF SAFETY AGAINST BEARING CAPACITY FAILURE: >2.26 ON EXTREME

REFERENCE DOCUMENTS:

1. SUZLON ENERGY A/S, "FOUNDATION DESIGN LOADS FOR S88 HH79.2 m, WIND TURBINE CLASS IEC 2A, BLADE AE43-V3-R07, GRADE S355 TOWER", DOCUMENT NO. WD90019, REVISION 00, DATED 01/02/07.

2. SUZLON ENERGY, "FLANGE DETAILS". DWG NO: S88.R80.001.06.01, SEPTEMBER 22, 2005, REV. 1.

3. BARR ENGINEERING COMPANY, "GEOTECHNICAL ENGINEERING REPORT, LEANING JUNIPER IIa WIND PROJECT, ARLINGTON, OREGON", AUGUST 2009.

MIN. 28-DAY COMPRESSIVE STRENGTH OF CONCRETE:
5000 PSI

MIN. YIELD POINT STRENGTH OF REINFORCING BAR:
60 KSI

MIN. STRENGTH OF ANCHOR BOLTS:
SEE TABLE 1

MIN. 28-DAY COMPRESSIVE STRENGTH OF NON-SHRINK GROUT:
11,500 PSI

MIN. YIELD POINT STRENGTH OF EMBEDMENT PLATE:
36 KSI

VOLUME OF FOUNDATION AS DIMENSIONED:
392 CUBIC YARDS

ESTIMATED WEIGHT OF STEEL:
39 TONS

MAX. AGGREGATE SIZE:
1½ INCHES WITH 85%-95% PASSING THE 1 INCH SIEVE

ALLOWABLE SOIL BEARING CAPACITY:
3700 PSF

ABBREVIATIONS:

B.O.	BOTTOM OF	O.C.	ON CENTER
C.C.C.	CLEAR CONCRETE COVER	O.D.	OUTSIDE DIAMETER
C	CENTER LINE	R	RADIUS
EL.	ELEVATION	T&B	TOP AND BOTTOM
E.W.	EACH WAY	T.O.C.	TOP OF CONCRETE
EX.	EXISTING	TYP	TYPICAL
I.D.	INSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
MIN.	MINIMUM	W/	WITH
NOM.	NOMINAL	ø	DIAMETER

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REGISTERED PROFESSIONAL ENGINEER 75488PE OREGON SEPT. 14, 2004 JOEL E. BAHMA
EXPIRATION DATE: 12/31/09

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0	CBT	JXB	JXB	05-AUG-09	RELEASE FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF OREGON.
SIGNATURE Joel E Bahma
PRINTED NAME JOEL E. BAHMA
DATE AUG. 05, 2009 REG. NO. 75488PE

CLIENT			8/5/09					
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	DATE RELEASED							

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Designed	BKT/CBT
Approved	JXB

IBERDROLA RENEWABLES
PORTLAND, OREGON

LEANING JUNIPER IIa WIND PROJECT
ARLINGTON, OREGON

SPREAD FOOTING FOUNDATION
PLAN, ELEVATION, SECTION & DETAILS

BARR PROJECT No.	
37/11-1004	
CLIENT PROJECT No.	
-	
DWG. No.	REV. No.
S-01	0

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CBT M:\coal\37111004\leaning juniper IIa_S-01_rev 0.dwg Plot at 1 08/05/2009 08:34:02

1.0 EXCAVATION, SUBGRADE PREPARATION, BACKFILL, & COMPACTION

A. GENERAL

1. ENSURE FOUNDATION SITE IS EXCAVATED AND GRADED IN ACCORDANCE WITH THE DRAWINGS.
2. ENSURE UNIFORM BEARING CONDITIONS ARE PROVIDED FOR THE FOUNDATION. DO NOT PLACE THE FOUNDATION ON VARIABLE OR DISTURBED SOIL CONDITIONS. UNIFORMITY SHALL BE VERIFIED BY MEANS OF PROOF ROLLING AND/OR AS STIPULATED BELOW.

B. SUBMITTALS

1. SUBMIT GRAIN SIZE ANALYSIS, NATURAL MOISTURE CONTENT, AND STANDARD PROCTOR MAXIMUM DRY DENSITY TEST DATA FOR COMMON FILL SOIL MATERIALS.
2. SUBMIT COMPACTION TEST RESULTS FOR FILL PLACED OVER THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED FILL.
3. SUBMIT SUBGRADE INSPECTION REPORT FOR EACH FOUNDATION COMPLETED BY A GEOTECHNICAL ENGINEER.

C. PRODUCTS

1. **LEAN CONCRETE:** CONTAINING ASTM C150, TYPE I CEMENT. 28 DAY COMPRESSIVE STRENGTH EQUAL TO OR GREATER THAN 1,000 PSI.

2. **COMMON FILL:** SHALL CONSIST OF SUITABLE MATERIALS EXCAVATED FROM THE FOUNDATION SITE OR IMPORTED AS NECESSARY. ADDITIONAL CRUSHING AND SCREENING MAY BE REQUIRED TO PROCESS THE MATERIAL TO THE SPECIFICATION REQUIREMENTS.
   a. MATERIALS BACKFILLED WITHIN 1 FOOT OF THE PEDESTAL SHALL BE FINE, WELL GRADED MATERIAL WITH A PARTICLE SIZE NO GREATER THAN 3".
   b. MATERIALS BACKFILLED OUTSIDE THIS AREA MAY CONSIST OF ALL OTHER EXCAVATED MATERIALS PROVIDED THEY MEET THE DENSITY REQUIREMENTS AND CAN BE PLACED USING METHODS THAT WILL PREVENT VOIDS FROM OCCURRING.
   c. ALL EXCAVATED AREAS AROUND THE FOUNDATION MUST BE BACKFILLED AND COMPACTED TO THE REQUIREMENTS LISTED BELOW.

3. **ENGINEERED FILL:** REFER TO SHEET S-03 FOR ENGINEERED FILL SPECIFICATIONS.

D. EXECUTION

1. REMOVE TOPSOIL FROM THE PLAN AREA AND STORE IN AN OWNER DESIGNATED AREA. THE TOPSOIL SHALL BE USED FOR SITE RESTORATION.

2. EXCAVATE SOILS TO THE LIMITS INDICATED ON DRAWING S-01 USING TECHNIQUES (E.G. A SMOOTH EDGED EXCAVATOR BUCKET) THAT WILL MINIMIZE DISTURBANCE TO THE SUBGRADE. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF SURFACE WATER AND/OR GROUNDWATER FLOWS INTO THE EXCAVATION.

3. PRIOR TO PLACING PROTECTIVE LEAN CONCRETE SURFACE, HAVE A GEOTECHNICAL ENGINEER INSPECT THE SUBGRADE CONDITIONS AND RECORD THE SOIL TYPE ENCOUNTERED, GROUNDWATER CONDITIONS OR OTHER SUBSURFACE CONDITIONS. VERIFY THAT OBSERVATIONS TAKEN ARE CONSISTENT WITH THE OBSERVATIONS CONTAINED IN THE GEOTECHNICAL DOCUMENTS REFERENCED ON DRAWING S-01.

4. TYPE 1 SUBGRADE CONDITIONS: IF SOILS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, PERFORM THE FOLLOWING TASKS:

   a. SURFACE COMPACT THE TOP OF THE SUBGRADE TO CONSOLIDATE LOOSE SOILS CREATED DURING EXCAVATION.
   b. REFER TO SHEET S-03 FOR OVER-EXCAVATION AND ENGINEERED FILL REQUIREMENTS AT SELECTED SITES.

5. TYPE 2 SUBGRADE CONDITIONS: IF ROCK CONDITIONS ARE ENCOUNTERED ACROSS THE ENTIRE FOOTPRINT OF THE FOUNDATION, PERFORM THE FOLLOWING TASKS:

   a. SUBSTANTIALLY REMOVE ALL LOOSE ROCK GREATER THAN 3" IN SIZE FROM THE BOTTOM OF THE EXCAVATION. AS PRACTICALLY AS POSSIBLE, REMOVE MATERIAL BELOW 3" IN SIZE TO EXPOSE UNDISTURBED ROCK.
   b. IF THE BOTTOM OF THE EXCAVATION IS OF VARIABLE ELEVATION, ESTABLISH A LEVEL BENCH BY USE OF LEAN CONCRETE FILL.

6. IF SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT CONSISTENT WITH THE GEOTECHNICAL REPORT (E.G. HALF SOILS AND HALF ROCK), OBTAIN WRITTEN INSTRUCTIONS FROM THE FOUNDATION ENGINEER AS TO THE MEANS OF CORRECTION TO BE UNDERTAKEN. OBTAIN WRITTEN CONFIRMATION FROM THE GEOTECHNICAL ENGINEER THAT THE SPECIFIED ACTIONS WERE COMPLETED.

7. FOR PROTECTION OF THE SUBGRADE AND ESTABLISHMENT OF A WORKING SURFACE, PLACE LEAN CONCRETE FILL AS INDICATED ON THE DRAWING. IT IS RECOMMENDED THAT THE LEAN CONCRETE FILL BE PLACED AS LEVEL AS PRACTICAL TO FACILITATE PLACEMENT OF THE REINFORCING STEEL AND EMBEDMENT RING. THE LEAN CONCRETE FILL MUST BE THICK ENOUGH TO SUPPORT THE REINFORCING STEEL AND THE ANCHOR BOLT CAGE.

8. BACKFILL AND COMPACTION: PLACE AND COMPACT COMMON FILL MATERIALS TO THE LIMITS, DEPTH AND DRY DENSITY INDICATED ON DRAWING S-01 PLACE FILL IN MAXIMUM LOOSE LIFTS OF 12 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY. BACKFILL MAY BE PLACED WHEN THE FOOTING AND PEDESTAL HAVE REACHED A COMPRESSIVE STRENGTH OF 2000 PSI.

9. GRADE THE SITE IN ACCORDANCE WITH DRAWINGS TO PREVENT WATER FROM PONDING OVER THE FOUNDATION WHILE MAINTAINING AT LEAST THE MINIMUM DEPTH OF FILL SPECIFIED ON THE DRAWINGS. RESTORE THE SITE IN ACCORDANCE WITH OWNER REQUIREMENTS.

E. TESTING AND INSPECTION

1. FOR EVERY 2500 CUBIC YARDS OF PLACED COMMON FILL, OBTAIN SAMPLES OF COMMON FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, PROCTOR AND/OR RELATIVE DENSITY TESTS.

2. FOR ALL PLACED AND COMPACTED COMMON FILLS AROUND THE FOUNDATION, PROVIDE ONE DENSITY TEST PER LIFT INDICATING TEST LOCATION, DRY DENSITY AND MOISTURE CONTENT.

3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY A GEOTECHNICAL ENGINEER.

2.0 CAST-IN-PLACE CONCRETE AND STEEL REINFORCING

A. GENERAL

1. CONCRETE WORK SHALL BE IN COMPLIANCE WITH THE FOLLOWING CODES AND SPECIFICATIONS:
   a. ACI 318-05, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
   b. ACI 301, STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE.

B. SUBMITTALS

1. FOR EACH CONCRETE TYPE USED, SUBMIT FOR APPROVAL A MIX DESIGN CERTIFIED BY A PROFESSIONAL ENGINEER AND MEETING THE MINIMUM SPECIFIED REQUIREMENTS.
2. SUBMIT PRODUCT DATA FOR ADMIXTURES, POZZOLAN, AND CURING MEMBRANE USED ON THE PROJECT. INCLUDE GRADATION OF COARSE AGGREGATE.
3. SUBMIT REINFORCING FABRICATION AND PLACEMENT SHOP DRAWINGS.
4. SUBMIT MILL REPORTS OF REINFORCING STEEL, CONFIRMING THE GRADE AND STRENGTH OF REINFORCING STEEL PROVIDED ON THE PROJECT.
5. SUBMIT QUALITY CONTROL FIELD TESTS OF AIR CONTENT, SLUMP, AIR TEMPERATURE, AND CONCRETE TEMPERATURE.
6. SUBMIT CONCRETE CYLINDER STRENGTH TEST RESULTS.
7. SUBMIT A PLAN FOR HOT AND COLD WEATHER PROTECTION OF CONCRETE IN ACCORDANCE WITH ACI 305-306.

C. PRODUCTS

1. **REINFORCING BARS:** TO ASTM A615, GRADE 60, DEFORMED, UNCOATED.
2. **CEMENT:** TO ASTM C150, TYPE I.
3. **FLY ASH:** TO ASTM C618, CLASS C OR F (IF SPECIFIED).
4. **MINIMUM CEMENTITIOUS CONTENT:** IN ACCORDANCE WITH APPROVED MIX DESIGN.
5. **COARSE AGGREGATES:** TO ASTM C33, GRADATION IN ACCORDANCE WITH SPECIFICATIONS AND APPROVED MIX DESIGN WITH A 1.5" MAXIMUM AGGREGATE SIZE WITH 85%-95% PASSING THE 1" SIEVE.
6. **FINE AGGREGATES:** TO ASTM C33, GRADATION IN ACCORDANCE WITH APPROVED MIX DESIGN.
7. **AIR ADMIXTURE AND CONTENT:** TO ASTM C260, RANGING FROM 4.5% ± 1.5% FOR PEDESTAL ONLY, NO AIR CONTENT REQUIREMENT FOR FOOTING.
8. **OTHER ADMIXTURES:** WATER REDUCING MIXTURE AND SUPERPLASTICIZER AS REQUIRED.
9. **MAXIMUM WATER CEMENT RATIO:** 0.45.
10. **28 DAY COMPRESSIVE STRENGTH:** 5,000.
11. **SLUMP:** IN ACCORDANCE WITH APPROVED MIX DESIGN AT THE POINT OF DEPOSITION WITH THE ADDITION OF ADMIXTURES.
12. **CURING MEMBRANE:** TO ASTM C309, TYPE 1 OR 2 (WHITE), CLASS A OR B.

D. EXECUTION

1. PLACE CONCRETE IN ACCORDANCE WITH THE FOLLOWING DIMENSIONAL TOLERANCES:
   a. REINFORCING PLAN SPACING: PLUS OR MINUS 2 INCHES.
   b. REINFORCING VERTICAL SPACING: PLUS OR MINUS 1 INCH.
   c. FOOTING CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 3 INCHES.
   d. PEDESTAL CLEAR CONCRETE COVER: MINUS 0 INCHES, PLUS 2 INCHES.
   e. FOOTING PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 3 INCHES.
   f. FOOTING THICKNESS: MINUS 0 INCHES, PLUS 3 INCHES.
   g. PEDESTAL PLAN DIMENSIONS: MINUS 0 INCHES, PLUS 2 INCHES.
   h. PEDESTAL HEIGHT: MINUS 1 INCH, PLUS 0 INCHES.
   i. PEDESTAL CENTERED TO WITHIN 2 INCHES RELATIVE TO FOOTING.

2. PLACE REINFORCING AT SPACING SPECIFIED MEETING THE REQUIRED DIMENSIONAL TOLERANCES.

3. PROVIDE NECESSARY CHAIRS AND STANDEES TO SUPPORT REBAR AND PREVENT MOVEMENT OR DISPLACEMENT OF THE MATS DURING PLACING OF CONCRETE.

4. REINFORCEMENT SHALL BE FREE OF LOOSE RUST, MILL SCALE, EARTH, ICE, CONCRETE, OR OTHER MATERIALS WHICH COULD PREVENT BONDING TO NEW CONCRETE.

5. SET FORMWORK IN ACCORDANCE WITH SPECIFIED DIMENSIONS AND TOLERANCES. PREVENT FORMWORK FROM DEFLECTING GREATER THAN 1 INCH DURING PLACEMENT OF CONCRETE. FORMWORK MUST BE REMOVED AFTER CONCRETE WORK IS COMPLETED.

6. PLACE CONCRETE IN ACCORDANCE WITH ACI 318. PLACE SUCCESSIVE LIFTS OF CONCRETE AS QUICKLY AS POSSIBLE TO ENSURE PROPER AMALGAMATION OF CONCRETE BETWEEN SUCCESSIVE LIFTS.

7. CONSOLIDATE CONCRETE IN ACCORDANCE WITH ACI 318 PREVENTING THE FORMATION OF JOINTS, VOIDS, HONEYCOMBING OR SEGREGATION OF AGGREGATE.

8. ROUGH FINISH TOP OF CONCRETE FOOTING USING A ROLLER SCREED.

9. PRIOR TO PLACING PEDESTAL CONCRETE, REMOVE CONCRETE SURFACE LAITANCE AND OTHER DEBRIS FROM TOP OF FOOTING.

10. TROWEL AND BROOM FINISH TOP OF PEDESTAL.

11. CURE CONCRETE FOOTING AND PEDESTAL IN ACCORDANCE WITH ACI 318. IF A CURING MEMBRANE IS USED, APPLY CURING MEMBRANE AS SOON AS BLEEDING HAS STOPPED AND FREE WATER HAS DISAPPEARED FROM THE SURFACE.

12. ALL METAL DEVICES USED TO SUPPORT FORMWORK OR TEMPORARY BRACING THAT ARE EMBEDDED IN THE FOOTING OR PEDESTAL SHALL BE REMOVED TO A DEPTH OF ONE INCH FROM THE SURFACE OF THE CONCRETE AND FILLED WITH GROUT.

E. TESTING AND INSPECTION

1. FOR EACH FOOTING PLACED, CAST A MINIMUM OF 6 CONCRETE CYLINDERS (6"X12" SIZE) FOR LABORATORY STRENGTH TESTING WITH TWO TESTS AT 28 DAYS (AVERAGE OF TWO CYLINDER BREAKS FOR EACH STRENGTH TEST) AND IF NECESSARY ONE AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
2. FOR EACH PEDESTAL, CAST A MINIMUM OF 4 CONCRETE CYLINDERS (6"X12" SIZE) FOR LABORATORY STRENGTH TESTING WITH ONE TEST AT 28 DAYS (AVERAGE OF TWO CYLINDER BREAKS FOR EACH STRENGTH TEST) AND IF NECESSARY ONE AT 56 DAYS. CAST ADDITIONAL CYLINDERS AS REQUIRED TO DETERMINE CONCRETE STRENGTH AT OTHER TIMES.
3. PERFORM A MINIMUM OF ONE AIR TEST AND A MINIMUM OF ONE SLUMP TEST PER SET OF CYLINDERS CAST. RECORD AMBIENT AIR TEMPERATURE AND CONCRETE TEMPERATURE.

3.0 ANCHOR BOLTS AND EMBEDMENT PLATE

A. GENERAL

1. PRODUCTS, SUBMITTALS, EXECUTION, AND TESTING ARE SPECIFIED TO PROVIDE DURABLE ANCHOR BOLTS AND EMBEDMENT PLATES.

B. SUBMITTALS

1. SUBMIT PRODUCT DATA FOR ANCHORS AND HARDWARE.

2. SUBMIT A 12-INCH LONG PRODUCT SAMPLE OF THE ANCHOR COMPLETE WITH WASHER AND NUT.

3. SUBMIT MILL CERTIFICATES FOR ANCHORS INDICATING YIELD AND TENSILE STRENGTH OF ANCHORS.

4. SUBMIT MILL CERTIFICATES FOR THE EMBEDMENT RING INDICATING THAT THE MATERIAL MEETS THE MINIMUM STRENGTH REQUIREMENTS.

5. SUBMIT 5 LABORATORY TENSION TESTS OF ANCHOR COMPLETE WITH THREADS.

6. SUBMIT A TENSIONING CALIBRATION PROCEDURE FOR REVIEW AND APPROVAL, INCLUDING VERIFICATION THAT THE EQUIPMENT PROVIDED AND TENSIONING METHODS USED ARE DELIVERING THE NECESSARY LOCK OFF LOAD.

7. SUBMIT A TENSIONING PROCEDURE AND A TENSION TESTING PROCEDURE FOR REVIEW AND APPROVAL.

8. SUBMIT TENSION TEST DATA FOR ANCHOR BOLTS THAT ARE TESTED INDICATING BOLT LOCATION AND TENSION VALUE.

C. PRODUCTS

1. **ANCHOR BOLTS:** SIZE, TYPE, AND GRADE AS INDICATED IN TABLE 1 ON SHEET S-01 WITH A MAXIMUM THREAD DIAMETER OF 1½ INCHES.

2. **ANCHOR BOLT SLEEVES:** PVC TO ASTM D1784, MANUFACTURED TO ASTM D2241, SDR21 THICKNESS.

3. **EMBEDMENT PLATE:** TO ASTM A36, PLAIN FINISH.

4. **HEAVY HEX NUTS:** TO ASTM A194, GRADE 2H, EXCEPT FOR THE DIMENSIONAL REQUIREMENTS. NUTS SHALL BE CAPABLE OF DEVELOPING THE MINIMUM TENSILE STRENGTH OF THE ANCHOR.

5. **HARDENED STEEL WASHERS:** TO ASTM F436, PLAIN FINISH.

6. **ANCHOR BOLT CAPS:** BY NORM TOOMAN CONSTRUCTION (WWW.NORMTOOMANCONST.COM), OR APPROVED EQUAL.

D. EXECUTION

1. THE FOLLOWING DIMENSIONAL TOLERANCES SHALL BE ADHERED TO FOR PLACEMENT OF ANCHOR BOLTS:

   a. ANCHOR BOLT PLAN LOCATION – PLUS OR MINUS 1/16 INCH.
   b. ANCHOR BOLT PLUMBNESS – LESS THAN 1/4 DEGREE.
   c. TEMPLATE AND EMBEDMENT RING PLAN DIMENSION – PLUS OR MINUS 1/16 INCH.
   d. EMBEDMENT RING LEVEL – PLUS OR MINUS 1/4 INCH.
   e. EMBEDMENT RING ELEVATION – PLUS OR MINUS 1/2 INCH.

2. USE A TEMPLATE RING TO SET ANCHOR BOLT PLUMBNESS AND POSITION. ENSURE THE TEMPLATE RING IS SET IN ACCORDANCE WITH THE SPECIFIED CONSTRUCTION TOLERANCES.

3. PLACE AND LEVEL THE EMBEDMENT RING IN ACCORDANCE WITH THE SPECIFIED TOLERANCES. ENSURE THE EMBEDMENT RING IS PROPERLY ANCHORED TO PREVENT MOVEMENT.

4. AFTER PLACEMENT OF CONCRETE PEDESTAL, PREVENT WATER FROM ENTERING THE SLEEVE ANNULUS FROM THE TOP SURFACE PRIOR TO SETTING OF TOWER AND GROUTING OF BASEPLATE.

5. AFTER SETTING OF THE LOWER TOWER SECTION(S) AND GROUTING OF THE BASEPLATE, APPLY A LOCK-OFF FORCE TO EACH ANCHOR BOLT WHICH IS GREATER THAN 96 KIPS AND LESS THAN 106 KIPS IN ORDER TO ACHIEVE A MINIMUM TENSION FORCE OF 96 KIPS IN THE ANCHOR. THE LOCK-OFF FORCE SELECTED BY THE CONTRACTOR SHOULD ACCOUNT FOR TENSION LOSSES DUE TO THE TENSIONING PROCEDURE TO ENSURE THE SPECIFIED TENSION TEST VALUE IS ACHIEVED. THE TENSIONING EQUIPMENT SHOULD BE CALIBRATED IN ACCORDANCE WITH THE APPROVED PROCEDURE.

6. AFTER TENSIONING IS COMPLETE, APPLY ANTI-CORROSION GREASE TO THE EXPOSED THREADS AND INSTALL ANCHOR BOLT CAPS.

E. TESTING AND INSPECTION

1. SUBMIT 5 LABORATORY TENSION TESTS ON PROJECT ANCHORS, COMPLETE WITH THREADS, PERFORMED BY AN INDEPENDENT TESTING LABORATORY. PERFORM TEST IN ACCORDANCE WITH ASTM A370, AND REPORT YIELD STRESS AND TENSILE STRESS.

2. AFTER ALL BOLTS HAVE BEEN TENSIONED, A MINIMUM OF 10% OF THE TOTAL BOLTS INSTALLED PER FOUNDATION SHALL BE RANDOMLY TESTED TO VERIFY THAT A 96 KIP TENSION LOAD HAS BEEN ACHIEVED BY USE OF AN APPROVED TENSION TESTING PROCEDURE. IF ANY OF THE BOLTS DO NOT MEET THE REQUIRED TENSION TEST VALUE, THEN ALL BOLTS MUST BE RETENSIONED AND THE TENSION TEST MUST BE REPEATED. REPEAT THE PROCEDURE UNTIL ALL THE TENSION TESTS PASS.

4.0 TOWER BASE GROUT

A. GENERAL
1. NO ITEMS.

B. SUBMITTALS

2. SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTRUCTIONS FOR MIXING, PLACING AND CURING FOR GROUT TO BE PLACED.

3. SUBMIT GROUT CUBE STRENGTH TEST RESULTS.

4. SUBMIT CONTRACTOR'S TOWER BASE SETTING/GROUTING PLAN.

– CONTINUED FROM SECTION 4.0

C. PRODUCTS

1. **CEMENTITIOUS NON-SHRINK GROUT:** PREPACKAGED GROUT CONFORMING TO ASTM C1107, GRADE C WITH A MINIMUM COMPRESSIVE STRENGTH OF 11,500 PSI AFTER 28 DAYS ACCORDING TO ASTM C109.

2. **EPOXY NON-SHRINK GROUT:** PREPACKAGED EPOXY GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 11,500 PSI AFTER 28 DAYS ACCORDING TO ASTM C579 AND A MAXIMUM COEFFICIENT OF THERMAL EXPANSION OF 30 X 10-6 IN/IN/°F IN ACCORDANCE WITH ASTM C531.

D. EXECUTION

1. MIX, PLACE, AND CURE GROUT IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTRUCTIONS.

2. FOR CEMENT GROUTS, PROVIDE GROUT SHOULDERS IN ACCORDANCE WITH DRAWING DETAILS. CONTRACTOR HAS THE OPTION TO PROVIDE EITHER A VERTICAL OR 45° SHOULDER. FOR ANY SHOULDER TYPE SELECTED, DO NOT ALLOW GROUT TO BE PLACED AGAINST THE SIDE OF THE TOWER FLANGE.

3. FOR EPOXY GROUTS, POUR GROUT UP THE SIDE OF THE TOWER FLANGE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND ALSO PROVIDE A 1/4" EXPANSION JOINT BETWEEN THE TOWER FLANGE AND THE GROUT.

4. COORDINATE GROUTING PROCEDURES WITH THE REQUIREMENTS OF THE TOWER MANUFACTURER.

E. TESTING

1. CAST MINIMUM OF 9 GROUT CUBES, AND PERFORM TWO LABORATORY STRENGTH TESTS AT 28 DAYS (AVERAGE OF THREE CUBE BREAKS FOR EACH STRENGTH TEST) AND IF NECESSARY ONE AT 56 DAYS. CAST ADDITIONAL GROUT CUBES AS REQUIRED TO DETERMINE STRENGTH AT OTHER TIMES.

5.0 MISCELLANEOUS CONCRETE EMBEDMENTS

A. GENERAL

1. COORDINATE THE LOCATION AND PLACEMENT OF GROUNDING GRIDS, CONTROL CONDUIT AND ELECTRICAL CONDUIT.

B. SUBMITTALS

1. SUBMIT CONDUIT PLACEMENT DETAILS TO THE FOUNDATION ENGINEER FOR APPROVAL SHOWING DISTANCE FROM TOP OF PEDESTAL TO TOP CONDUIT PENETRATION (THROUGH SIDE OF PEDESTAL).

C. PRODUCTS
1. NO ITEMS.

D. EXECUTION

1. VERIFY THE LOCATION OF MISCELLANEOUS CONCRETE EMBEDMENTS AND CONDUIT SO AS NOT TO INTERFERE WITH THE FOUNDATION'S STRUCTURAL REINFORCING STEEL.

2. ENSURE THAT MISCELLANEOUS EMBEDMENTS ARE PROPERLY SECURED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.

3. TOP OF CONDUIT MUST BE A MINIMUM OF 24 INCHES BELOW TOP OF PEDESTAL.

6.0 SUBMITTALS

A. SUBMIT ONE ELECTRONIC COPY OF THE SUBMITTALS SPECIFIED TO THE FOUNDATION ENGINEER OF RECORD. SUBMITTALS SHALL BE MADE A MINIMUM OF ONE WEEK PRIOR TO ITS INCORPORATION INTO THE WORK.

B. THE FOUNDATION ENGINEER OF RECORD WILL REVIEW THE SUBMITTAL FOR CONFORMANCE AND COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.

C. THE REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN CONSTRUCTION OF THE WORK DUE TO ERRORS CONTAINED IN THOSE DOCUMENTS.

7.0 TESTING AND INSPECTION REQUIREMENTS

A. SUBMIT A LIST OF THE TESTING COMPANIES THAT WILL BE UTILIZED ON THE PROJECT FOR PERFORMANCE OF TESTS SPECIFIED.

B. SUBMIT NAME AND QUALIFICATIONS OF THE GEOTECHNICAL ENGINEER.

C. SUBMIT ONE ELECTRONIC COPY OF TESTING AND INSPECTION RECORDS SPECIFIED TO THE FOUNDATION ENGINEER OF RECORD.

D. THE FOUNDATION ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS.

E. EACH FOUNDATION CONSTRUCTED IS SUBJECT TO THE STIPULATED TESTING REQUIREMENTS.

8.0 TOWER ERECTION AND ANCHOR TENSIONING REQUIREMENTS

A. UP TO THREE TOWER SECTIONS MAY BE ERECTED, LEVELED AND GROUTED WHEN CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED 4,000 PSI.

B. THE NACELLE AND BLADES MAY BE ERECTED WHEN:

1. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED THE SPECIFIED 28 DAY STRENGTH.

2. THE GROUT STRENGTH HAS REACHED THE SPECIFIED 28 DAY STRENGTH.

3. UPON COMPLETION OF THE ANCHOR BOLT TENSIONING AND TESTING AS FOUND IN SECTION 3.E.2 VERIFYING THAT THE REQUIRED TENSION VALUE HAS BEEN ACHIEVED.

C. ANCHORS MAY BE TENSIONED WHEN:

1. THE CONCRETE STRENGTH OF THE FOOTING AND PEDESTAL HAS REACHED THE SPECIFIED 28 DAY STRENGTH.

2. THE GROUT STRENGTH HAS REACHED 6,000 PSI.

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REGISTERED PROFESSIONAL ENGINEER 75488PE OREGON SEPT. 14, 2004 JOEL E. BAHMA

EXPIRATION DATE: 6/31/09

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	CBT	JXB	JXB	05-AUG-09	RELEASE FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF OREGON.

SIGNATURE Joel E Bahma

PRINTED NAME JOEL E. BAHMA

DATE AUG. 05, 2009 REG. NO. 75488PE

CLIENT				8/5/09				
BID								
CONSTRUCTION								
RELEASED TO/FOR	A	B	C	0	1	2	3	
	DATE RELEASED							

BARR

Corporate Headquarters: Minneapolis, Minnesota
Ph: 1-800-632-2277

Project Office:
BARR ENGINEERING CO.
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
55435-4803
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Fax: (952) 832-2601
www.barr.com

Scale	AS SHOWN
Date	04-AUG-09
Drawn	CBT
Checked	JXB
Designed	CBT
Approved	JXB

IBERDROLA RENEWABLES
PORTLAND, OREGON

LEANING JUNIPER IIa WIND PROJECT
ARLINGTON, OREGON

SPREAD FOOTING FOUNDATION
TECHNICAL SPECIFICATIONS AND SUBMITTALS

BARR PROJECT No.	37/11-1004
CLIENT PROJECT No.	–
DWG. No.	S-02
REV. No.	0

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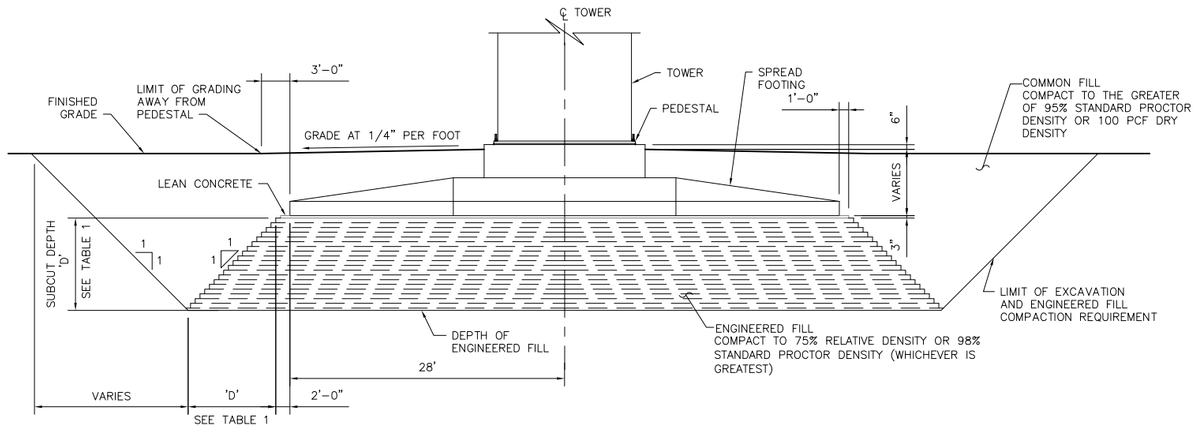
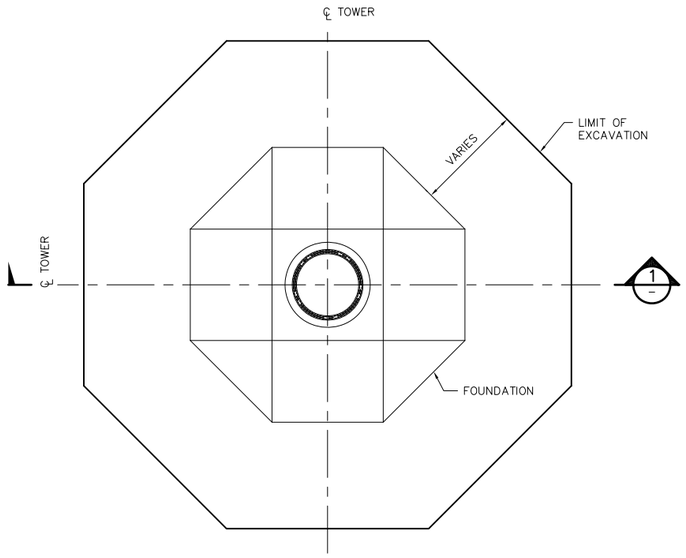


1 — SECTION: SUBCUT SOIL CORRECTION

0 1 5 10
SCALE IN FEET



2 — PLAN: SUBCUT SOIL CORRECTION

TABLE 1: ANTICIPATED DEPTH OF SUBCUT 'D' BELOW BOTTOM OF FOUNDATION

TURBINE SITE NO.	ANTICIPATED EXCAVATION DEPTH (FT)	ANTICIPATED SUBCUT DEPTH (FT)
C–1	TBD*	TBD*
D–1	TBD*	TBD*
D–2	TBD*	TBD*
D–3	TBD*	TBD*
D–4	TBD*	TBD*
K–2	TBD*	TBD*

* DYNAMIC CONE PENETROMETER TESTING IS REQUIRED

1.0 SUBGRADE SOIL CORRECTION

A. GENERAL

1. ENSURE FOUNDATION SITE IS EXCAVATED, BACKFILLED AND GRADED IN ACCORDANCE WITH THIS DRAWING AND DRAWING S–02.

2. SUBCUT AND REPLACE WITH ENGINEERED FILL AT TURBINE SITES NOTED IN TABLE 1.

3. THE MAXIMUM AND MINIMUM INDEX DENSITIES OF SOILS TO BE USED AS ENGINEERED FILLS SHALL BE MEASURED ACCORDING TO ASTM D4253, D4254, AND A STANDARD PROCTOR DENSITY TO ASTM D698 PRIOR TO THE MATERIALS BEING PLACED.

B. SUBMITTALS

1. SUBMIT GRAIN SIZE ANALYSIS, NATURAL MOISTURE CONTENT, AND MAXIMUM AND MINIMUM INDEX DENSITY TEST RESULTS FOR SOILS TO BE USED AS ENGINEERED FILL.

2. SUBMIT COMPACTION TEST RESULTS FOR ENGINEERED FILL PLACED BENEATH THE FOUNDATION INDICATING LOCATION OF TEST, DRY DENSITY, AND MOISTURE CONTENT OF PLACED ENGINEERED FILL.

3. SUBMIT COMPACTION TEST RESULTS FOR COMMON FILL PLACED OVER FOUNDATION IN ACCORDANCE WITH DRAWING S–02.

4. THE SUBGRADE FOR EACH FOUNDATION SHALL BE INSPECTED BY A GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO PLACEMENT OF ENGINEERED FILL. SUBMIT SUBGRADE INSPECTION REPORT FOR EACH FOUNDATION COMPLETED BY A GEOTECHNICAL ENGINEER.

C. PRODUCTS

1. **ENGINEERED FILL:** GRANULAR SOIL CONSISTING OF WELL GRADED GRAVEL, SAND OR CRUSHED STONE HAVING A MAXIMUM PARTICLE SIZE OF 1½" AND LESS THAN 10% PASSING THE NO. 200 SIEVE.

D. EXECUTION

1. WHERE NOTED IN TABLE 1, PERFORM SUBGRADE CORRECTION BY SUBCUTTING DEFICIENT SOILS AND REPLACING WITH COMPACTED ENGINEERED FILL.

2. HAVE THE GEOTECHNICAL ENGINEER WHO IS PERFORMING THE SUBGRADE INSPECTIONS PERFORM DYNAMIC CONE PENETROMETER TESTING (DCP) IN CONJUNCTION WITH HAND AUGERING AT THE SIX SITES INDICATED IN TABLE 1. AFTER THE EXCAVATION HAS REACHED THE BEARING ELEVATION, AUGER AND PERFORM DCP TESTING AT 1' INTERVALS TO A DEPTH OF 15 FEET BELOW THE ORIGINAL GRADE (6 FEET BELOW FOUNDATION BEARING ELEVATION). PERFORM DCP TESTING AT A MINIMUM OF 3 LOCATIONS WITHIN EACH EXCAVATION. DCP TEST LOCATIONS SHOULD BE MORE PREVALENT IN AREAS SUSPECTED TO BE SOFT. THE GEOTECHNICAL ENGINEER WILL DETERMINE IF SUBCUTTING IS REQUIRED AND TO WHAT DEPTH IT IS NEEDED.

3. CONTROL SURFACE WATER OR GROUNDWATER FLOWS INTO THE EXCAVATION USING MEANS DETERMINED BY THE CONTRACTOR. IF SUCH MEANS ARE EMPLOYED, RECORD THE MEANS UNDERTAKEN, SOURCE OF WATER (GROUND OR SURFACE), AND VOLUME OF WATER CONTROLLED. SUBMIT A DEWATERING RECORD TO THE FOUNDATION ENGINEER.

4. ENGINEERED FILL PLACEMENT AND COMPACTION: PLACE AND COMPACT ENGINEERED FILL TO THE LIMITS, DEPTH AND RELATIVE DENSITY OR STANDARD PROCTOR DENSITY INDICATED IN SECTION 1. PLACE AN INITIAL LIFT OF ENGINEERED FILL IMMEDIATELY AFTER COMPLETION OF THE EXCAVATION AND APPROVAL BY THE GEOTECHNICAL ENGINEER. PLACE ENGINEERED FILL IN LOOSE LIFTS OF 9 INCHES OR LESS TO ACHIEVE THE SPECIFIED DENSITY.

E. TESTING AND INSPECTION

1. FOR EVERY 2500 CUBIC YARDS OF PLACED ENGINEERED FILL: OBTAIN SAMPLES OF ENGINEERED FILL MATERIALS AND PERFORM GRAIN SIZE ANALYSIS, MOISTURE CONTENT, STANDARD PROCTOR, AND RELATIVE DENSITY TESTS.

2. FOR ENGINEERED FILL PROVIDE TWO DENSITY TESTS PER LIFT INDICATING TEST LOCATION, DRY DENSITY AND MOISTURE CONTENT. IN THE EVENT THAT THE SPECIFIED DENSITY REQUIREMENT IS NOT ACHIEVED, RECOMPACT AND RETEST THE ENGINEERED FILL.

3. PROVIDE A SUBGRADE INSPECTION REPORT TO BE COMPLETED BY A GEOTECHNICAL ENGINEER.

CONFIDENTIAL
FOR CONSTRUCTION

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REGISTERED PROFESSIONAL ENGINEER 75488PE OREGON JULY 14, 2006 JOEL E. BAHMA
EXPIRATION DATE: 12/31/09

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	CBT	JXB	JXB	05–AUG–09	RELEASE FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF OREGON.
SIGNATURE
PRINTED NAME JOEL E. BAHMA
DATE AUG. 05, 2009 REG. NO. 75488PE

RELEASED TO/FOR	A	B	C	0	1	2	3
CLIENT				8/5/09			
BID							
CONSTRUCTION							
DATE RELEASED							

BARR
Corporate Headquarters:
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www.barr.com

Scale	AS SHOWN
Date	04–AUG–09
Drawn	CBT
Checked	JXB
Designed	CBT
Approved	JXB

IBERDROLA RENEWABLES
PORTLAND, OREGON

LEANING JUNIPER IIa WIND PROJECT
ARLINGTON, OREGON

SPREAD FOOTING FOUNDATION
ENGINEERED FILL SECTION AND SPECIFICATIONS

BARR PROJECT No. 37/11–1004
CLIENT PROJECT No.
DWG. No. S–03
REV. No. 0

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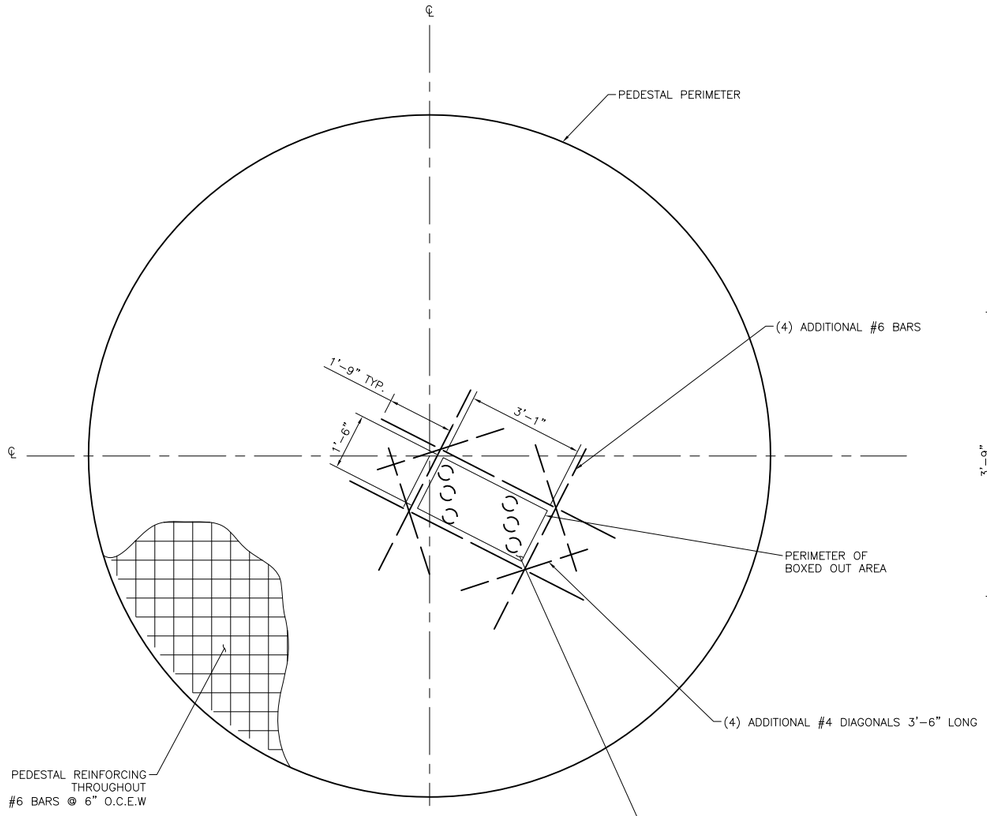

1 PLAN: PEDESTAL

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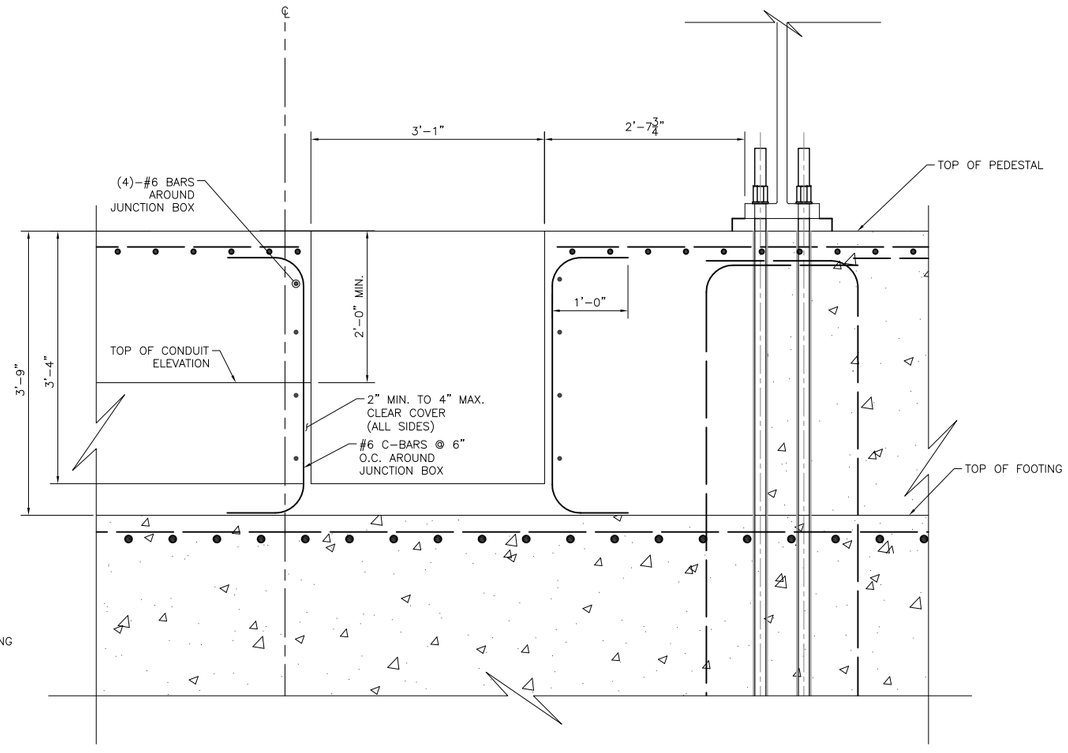
SCALE



2 SECTION: PEDESTAL

0 3 6 9 1 2
SCALE

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REGISTERED PROFESSIONAL ENGINEER
75488PE
OREGON
SEPT. 14, 2004
JOEL E. BAHMA
EXPIRATION DATE: 12/31/09

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
0	CBT	JXB	JXB	18-SEPT-09	RELEASE FOR CONSTRUCTION
1	CBT	JXB	JXB	02-FEB-10	BLOCKOUT DIMENSIONS REVISED TO MATCH ELECTRICAL DRAWING

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF OREGON.

SIGNATURE Joel E Bahma

PRINTED NAME JOEL E. BAHMA

DATE SEPT 18, 2009 REG. NO. 75488PE

	9/18/09	2/18/10					
CLIENT							
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	0	1	2	3	4	5
DATE RELEASED							

BARR
Corporate Headquarters:
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55435-4803
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www.barr.com

Scale	AS SHOWN
Date	17-SEPT-09
Drawn	CBT
Checked	JXB
Designed	CBT
Approved	JXB

IBERDROLA RENEWABLES
PORTLAND, OREGON

LEANING JUNIPER IIa WIND PROJECT
ARLINGTON, OREGON

PEDESTAL BLOCKOUT PLAN & SECTION

BARR PROJECT No.	
37/11-1004	
CLIENT PROJECT No.	
-	
DWG. No.	REV. No.
S-04	1

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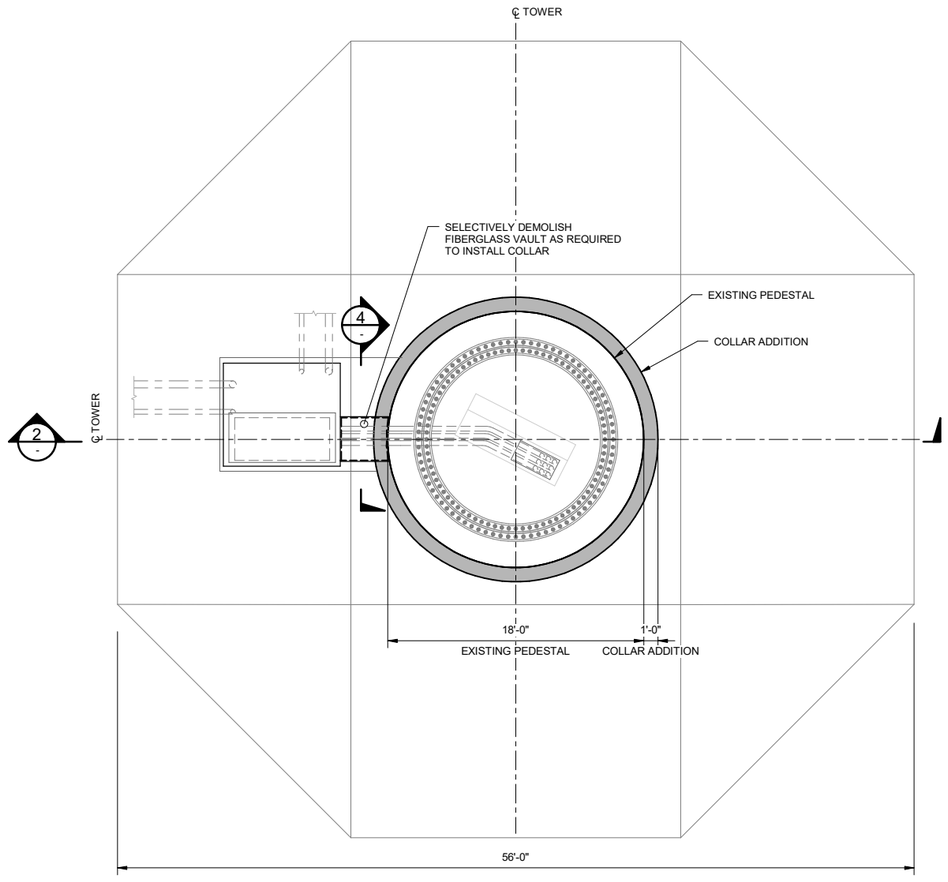
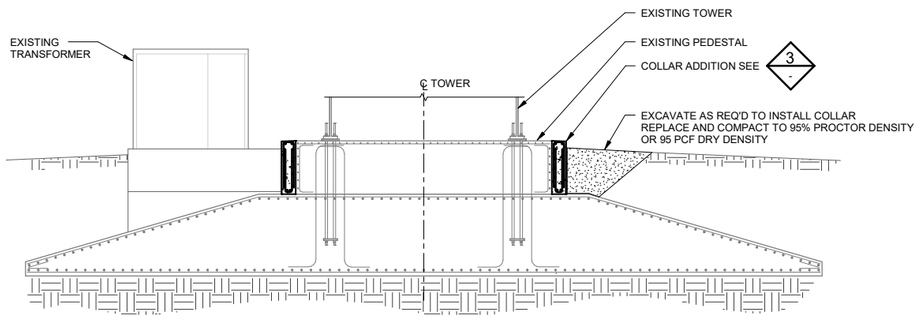
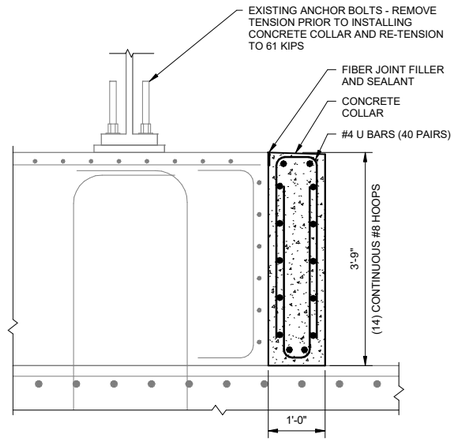


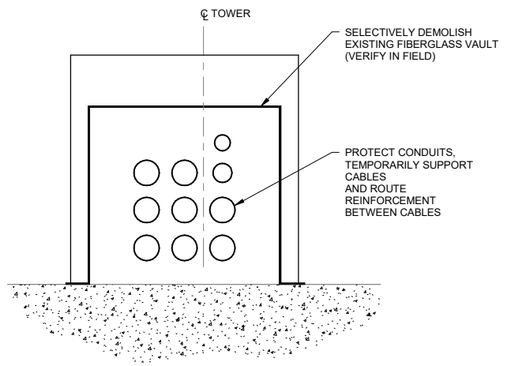
1 – PLAN: TOWER FOUNDATION WITH COLLAR ADDITION
3/16" = 1'-0"



2 – SECTION: TOWER FOUNDATION WITH COLLAR ADDITION
3/16" = 1'-0"



3 – DETAIL: COLLAR ADDITION
3/4" = 1'-0"



4 – SECTION - DUCT BANK DEMOLITION
1" = 1'-0"

BUILDING AND DESIGN CODES:
INTERNATIONAL BUILDING CODE 2021, INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS.
BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318, 2019, AMERICAN CONCRETE INSTITUTE.

WIND TURBINE AND TOWER:
MANUFACTURER: GE
MODEL: 2.5-116
POWER OUTPUT: 2.5MW
TURBINE HUB HEIGHT: 81m
ROTOR DIAMETER: 116m

EXTREME LOADS (UNFACTORED):

OVERTURNING MOMENT, Mxy = 45,017 kN-m
HORIZONTAL BASE SHEAR, Hxy = 576 kN
VERTICAL TOWER LOAD, Wz = 2,955 kN

NORMAL LOADS (UNFACTORED):

OVERTURNING MOMENT, Mxy = 38,146 kN-m
HORIZONTAL BASE SHEAR, Hxy = 489 kN
VERTICAL TOWER LOAD, Wz = 2,951 kN

MISALIGNMENT LOAD: 1,290 kN-m

RELATED REPORTS:
1. BARR ENGINEERING CO., "LEANING JUNIPER IIa WIND PROJECT, WIND TURBINE FOUNDATION EVALUATION REPORT, REPOWERING WITH A GE 2.5-116", DECEMBER 2023.

REFERENCE DOCUMENTS:
1. GE RENEWABLE ENERGY, FOUNDATION LOAD SPECIFICATION FOR WIND TURBINE GENERATOR SYSTEMS, LEANING JUNIPER IIA REPOWER OREGON (GE PROJECT 1263158), 2.5-116, 60HZ, 81M HUB HEIGHT (TOWER PLUS ADAPTER), NOMINAL, IEC CLASS S, REV A, DATED 2023-12-13.
2. BARR ENGINEERING CO., LEANING JUNIPER IIA WIND PROJECT, ARLINGTON, OREGON, SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS, SHEETS S-01, S-02, & S03 REVISION 0 DATED AUGUST 5, 2009 & PEDESTAL BLOCKOUT PLAN & SECTION, SHEET S-04 REVISION 1 DATED FEBRUARY 2, 2010.
3. STANTEC, LEANING JUPITER II WIND PROJECT, COLLECTOR SYSTEM, WTG/GSU CONDUIT LAYOUT AND DETAILS, PHASE A, DRAWING NO. LJ2A-E-524, SHEET 1, REV 0, DATED 02/03/10.

MIN. 28-DAY COMPRESSIVE STRENGTH OF CONCRETE:
5,000 PSI

MIN. YIELD STRENGTH OF REINFORCING BAR:
ASTM A615 60 KSI U.N.O.

VOLUME OF CONCRETE COLLAR AS DIMENSIONED:
8 CUBIC YARDS

ESTIMATED WEIGHT OF STEEL REINFORCING BAR IN COLLAR:
1.3 TONS

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NO.	BY	CHK	DATE	REVISION DESCRIPTION
B	PFB	JXB	12/14/2023	UPDATED SITE SPECIFIC LOADS
A	PFB	JXB	9/8/2023	PRELIMINARY DRAFT

PRELIMINARY
NOT FOR
CONSTRUCTION

CLIENT	9/8/23	12/14/23						
BID								
CONSTRUCTION								
RELEASED TO/FOR	A	B	C	0	1	2	3	
	DATE RELEASED							

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Corporate Headquarters:
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Project Office:
BARR ENGINEERING COMPANY
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SUITE 200
MINNEAPOLIS, MN 55435
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Fax: (218) 262-3460
www.barr.com

Scale	AS SHOWN
Date	8/23/2023
Drawn	DWU
Checked	KAG2
Designed	PFB/DAJ
Approved	JXB

AVANGRID RENEWABLES

PORTLAND, OREGON

LEANING JUNIPER IIA WIND PROJECT
ARLINGTON, OREGON

PRELIMINARY DESIGN
CONCRETE COLLAR FOUNDATION UPGRADE

BARR PROJECT NO. 47/20-1010.00
CLIENT PROJECT NO. -
DWG NO. PRELIM1
REV NO. B

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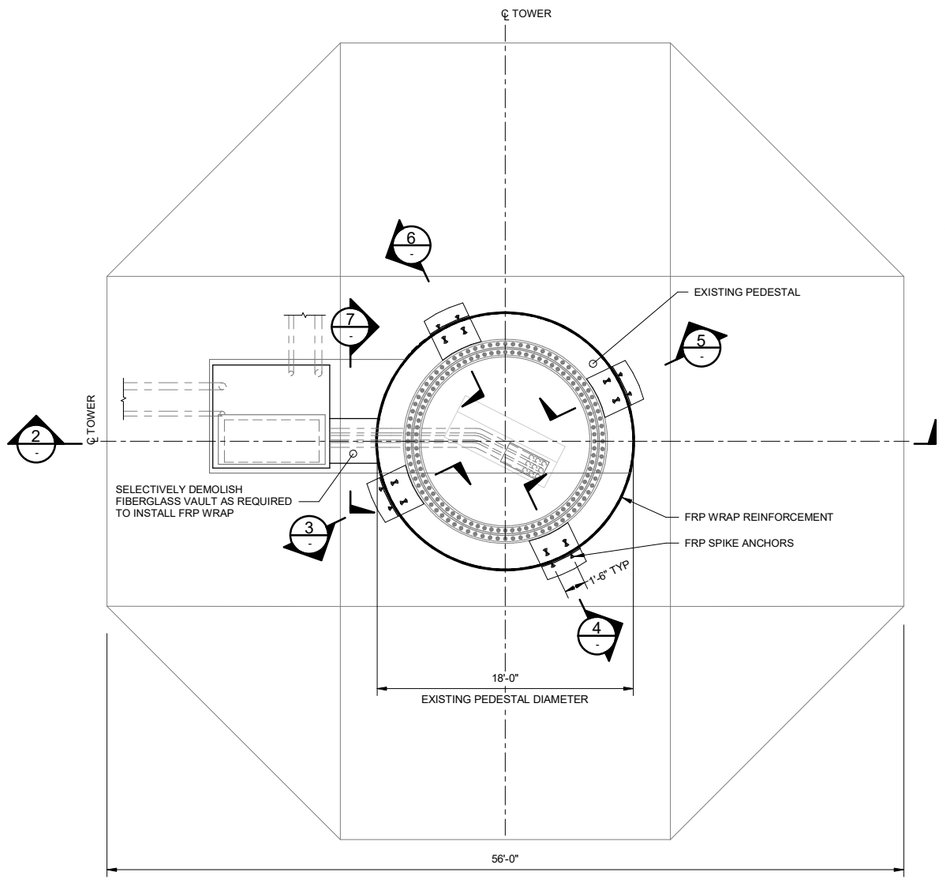
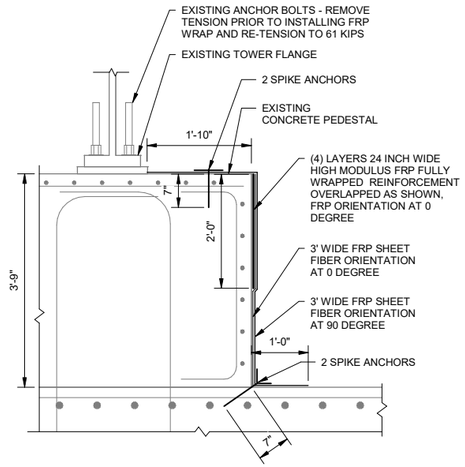
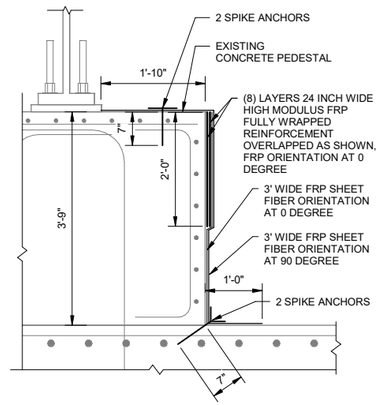


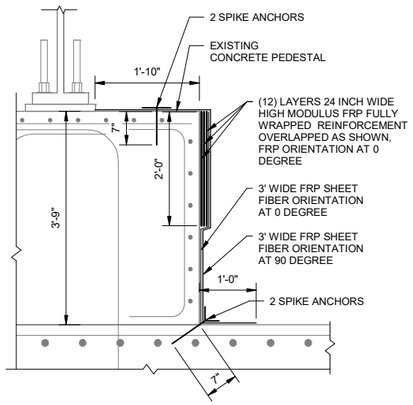
1 PLAN: TOWER FOUNDATION WITH FRP REINFORCEMENT
3/16" = 1'-0"



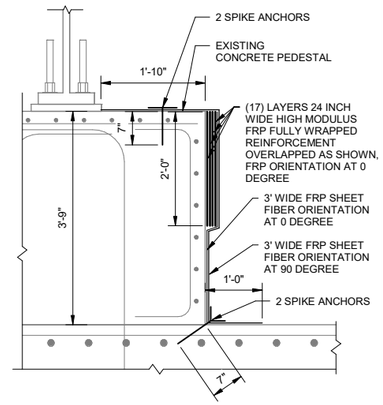
3 DETAIL: FRP REINFORCEMENT (4)
3/4" = 1'-0"



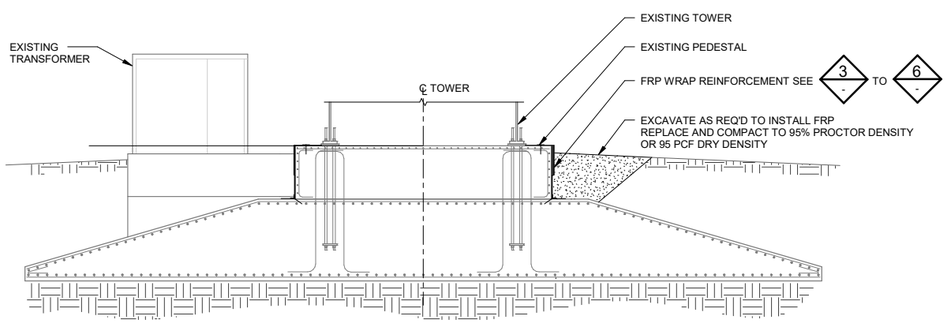
4 DETAIL: FRP REINFORCEMENT (8)
3/4" = 1'-0"



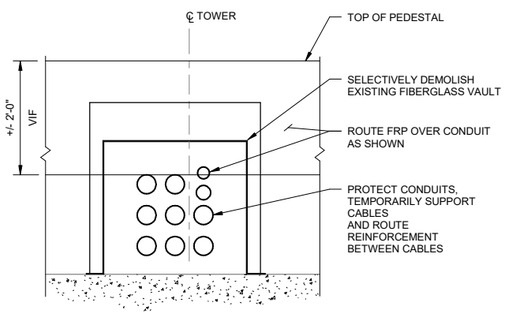
5 DETAIL: FRP REINFORCEMENT (12)
3/4" = 1'-0"



6 DETAIL: FRP REINFORCEMENT (17)
3/4" = 1'-0"



2 SECTION: TOWER FOUNDATION WITH FRP REINFORCEMENT
3/16" = 1'-0"



7 SECTION - DUCT BANK DEMOLITION
3/4" = 1'-0"

BUILDING AND DESIGN CODES:
INTERNATIONAL BUILDING CODE 2021, INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS.
ACI 440.2R-17 GUIDE FOR THE DESIGN AND CONSTRUCTION OF EXTERNALLY BONDED FRP SYSTEMS FOR STRENGTHENING CONCRETE STRUCTRES, AMERICAN CONCRETE INSTITUTE 2017.

WIND TURBINE AND TOWER:
MANUFACTURER: GE
MODEL: 2.5-116
POWER OUTPUT: 2.5MW
TURBINE HUB HEIGHT: 81m
ROTOR DIAMETER: 116m

EXTREME LOADS (UNFACTORED):

OVERTURNING MOMENT, Mxy = 45,017 kN-m
HORIZONTAL BASE SHEAR, Hxy = 576 kN
VERTICAL TOWER LOAD, Wz = 2,955 kN

NORMAL LOADS (UNFACTORED):

OVERTURNING MOMENT, Mxy = 38,146 kN-m
HORIZONTAL BASE SHEAR, Hxy = 489 kN
VERTICAL TOWER LOAD, Wz = 2,951 kN

MISALIGNMENT LOAD: 1,290 kN-m

RELATED REPORTS:
1. BARR ENGINEERING CO., "LEANING JUNIPER IIa WIND PROJECT, WIND TURBINE FOUNDATION EVALUATION REPORT, REPOWERING WITH A GE 2.5-116", DECEMBER 2023.

REFERENCE DOCUMENTS:
1. GE RENEWABLE ENERGY, FOUNDATION LOAD SPECIFICATION FOR WIND TURBINE GENERATOR SYSTEMS, LEANING JUNIPER IIA REPOWER OREGON (GE PROJECT 1263158), 2.5-116, 60HZ, 81M HUB HEIGHT (TOWER PLUS ADAPTER), NOMINAL, IEC CLASS S, REV A, DATED 2023-12-13.
2. BARR ENGINEERING CO., LEANING JUNIPER IIA WIND PROJECT, ARLINGTON, OREGON, SPREAD FOOTING FOUNDATION PLAN, ELEVATION, SECTION & DETAILS, SHEETS S-01, S-02, & S03 REVISION 0 DATED AUGUST 5, 2009 & PEDESTAL BLOCKOUT PLAN & SECTION, SHEET S-04 REVISION 1 DATED FEBRUARY 2, 2010.
3. STANTEC, LEANING JUPITER II WIND PROJECT, COLLECTOR SYSTEM, WTG/GSU CONDUIT LAYOUT AND DETAILS, PHASE A, DRAWING NO. LJ2A-E-524, SHEET 1, REV 0, DATED 02/03/10.

STRUCTURAL TECHNOLOGIES-V-Wrap™C200HM
HIGH MODULUS UNIDIRECTIONAL CARBON FIBER FABRIC LAMINATED WITH V-WRAP EPOXY RESINS SUCH AS: V-Wrap 600, V-Wrap 700S, and V-Wrap 770. OR APPROVED EQUAL

CURED COMPOSITE FRP PROPERTIES TESTED PER ASTM D3039:

TENSILE STRENGTH	155 KSI
TENSILE MODULUS	14,000 KSI
ELONGATION AT BREAK	1.1%
THICKNESS PER LAYER	0.04 IN
STIFFNESS/WIDTH	6.2 KIPS/IN

FABRIC SHEET WIDTH: 24 INCHES

TOTAL LENGTH OF FRP SHEET AS DIMENSIONED PER TURBINE: 1033 LINEAR FT

DESIGN LOADS:

SUSTAINED LOAD: 311 KIPS (UNFACTORED)
MAXIMUM FLUCTUATING LOAD: 278 KIPS (UNFACTORED)
MAXIMUM ABNORMAL EXTREME LOAD: 752 KIPS (FACTORED)

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B	PFB	JXB	12/14/2023	UPDATED SITE SPECIFIC LOADS
A	PFB	JXB	9/8/2023	PRELIMINARY DRAFT

PRELIMINARY
NOT FOR
CONSTRUCTION

CLIENT	9/8/23	2/14/23							
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CONSTRUCTION									
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AVANGRID RENEWABLES
PORTLAND, OREGON

LEANING JUNIPER IIA WIND PROJECT
ARLINGTON, OREGON

PRELIMINARY DESIGN
FRP WRAP FOUNDATION UPGRADE

BARR PROJECT NO.	47/20-1010.00
CLIENT PROJECT NO.	-
DWG NO.	PRELIM2
REV NO.	B

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Attachment 5
Revegetation and Noxious Weed Control Plan

Draft Repower Revegetation and Noxious Weed Control Plan

Leaning Juniper IIA Wind Power Facility Gilliam County, Oregon

Prepared for
Leaning Juniper Wind Power II, LLC

Prepared by

TETRA TECH

December 2023

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1.0 Introduction

Leaning Juniper IIA Wind Power Facility (Facility) is an operational wind power facility with 43 turbines and a maximum generating capacity of 90.3 megawatts (MW) located within a site boundary of approximately 6,404 acres in Gilliam County, Oregon. Leaning Juniper Wind Power II, LLC (Certificate Holder) is seeking a third amendment to the Facility Site Certificate to repower 36 of the Facility turbines and decommission 3 turbines, which will result in 40 operational turbines. The proposed changes to the Facility, as identified in the Request for Amendment 3 (RFA 3), would not alter the previously approved site boundary or micrositing corridors. All repower disturbance would occur in a portion of the micrositing corridor designated by Certificate Holder as the "repower corridor." Additional details regarding proposed activities associated with the Facility repower are provided in the RFA 3. The Oregon Department of Energy (ODOE) requested, as part of RFA 3, that the Certificate Holder develop a revegetation and noxious weed control plan for the Facility repower. This Draft Repower Revegetation and Noxious Weed Control Plan (Plan) supersedes the Revegetation Plan prepared for the Facility in 2013 (Attachment F of the Final Order on Amendment #2).

This Plan has been prepared to describe methods, success criteria, and monitoring and reporting requirements for the restoration and revegetation of areas temporarily disturbed during Facility repower construction. In addition, this Plan provides methods to prevent and minimize the introduction and spread of noxious weeds from the construction and operation of the Facility repower. The Certificate Holder and its contractors will be responsible for implementing the methods detailed in this Plan.

2.0 Existing Conditions and Description of Impacts

2.1 Existing Conditions

The Facility repower site is located on private land used primarily for livestock grazing, dry land winter wheat production, and operation of the existing wind Facility. A habitat survey was conducted in June and August 2023 to update the existing Facility habitat mapping. Habitat subtypes mapped within the repower corridor include the following:

- Dryland Wheat (DW)
- Developed: Other (DX)
- Exposed Basalt (EB)
- Escarpment (ESC)
- Annual Grass and Weeds (AG)
- Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass (SSA)

- Rabbitbrush-Snakeweed-Eriogonum/Bunchgrass (SSB)
- Eriogonum/Poa sandbergii – Annual Grass (SSC)
- Ephemeral Stream (ES)
- Herbaceous Wetland (HW)

2.2 Description of Impacts

Construction of the repower will result up to approximately 396 acres of temporary impacts. All areas of temporary disturbance are located in areas previously disturbed by the original Facility construction that have subsequently been successfully revegetated (MB&G 2015).

Table 1 presents the anticipated acreage of temporary impacts to habitat subtypes associated with Facility repower construction and operation. Table 1 will be updated prior to construction to reflect the final impact acreage by habitat subtype for the final layout. Figures depicting the location of Facility repower infrastructure, as well as habitat types and habitat categories mapped within the repower corridor, are included as Figures 7a and 7b of RFA 3.

Table 1. Anticipated Temporary Impacts by Habitat Subtype

ODFW[1] Habitat Category	Habitat Subtype	Temporary Disturbance (Acres)[2]
2	Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass (SSA)	36.1
	Eriogonum/Poa sandbergii – Annual Grass (SSC)	8.0
	Escarpment (ESC)	0.1
3	Rabbitbrush-Snakeweed-Eriogonum/Bunchgrass (SSB)	162.4
	Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass (SSA)	17.8
	Annual Grass and Weeds (AG)	6.5
4	Annual Grass and Weeds (AG)	12.7
	Category 1, 2, 3, and Habitat Total	**243.6**
6	Dryland Wheat (DW)	151.1
	Developed: Other (DX)	1.5
	Category 6 Habitat Subtotal	**152.7**
	Grand Total[1]	**396.2**

Note: Totals in this table may not appear to sum correctly due to rounding.

1. ODFW = Oregon Department of Fish and Wildlife

2. Temporary disturbance acreages generally include a 280-foot radius around turbines (except for M2 which is located near a Washington ground squirrel [*Urocitellus washingtoni*] colony), 60-foot width for access roads, 50-foot width for underground collection lines, temporary laydown areas, all clipped to the site boundary and excluding the existing permanent limits of disturbance.

3.0 Revegetation Methods

Revegetation of temporarily disturbed agricultural habitat will be conducted as described in Section 3.1. Revegetation of temporarily disturbed non-agriculture (i.e., Dryland Wheat) and non-

developed (i.e., Developed: Other) habitat will be conducted as described in Section 3.2. Restoration of temporarily disturbed developed habitat will be determined on a case-by-case basis and is not further discussed in this Plan.

Revegetation will begin as soon as feasible after completion of each construction phase. Seeding and planting will be done in a timely manner and in the appropriate season to facilitate germination and establishment of seeded species. Site preparation will involve standard, commonly used methods, and will take into account all relevant site-specific factors, including slope, size of area, and erosion potential. The Certificate Holder shall restore temporarily disturbed areas by preparing the soil and seeding using common application methods. The Certificate Holder shall use mulching and other appropriate practices to control erosion and sediment during construction and during revegetation work. As noted in the Soil Monitoring Plan prepared for the Facility repower (Appendix A), construction activities would need to comply with the Facility's Erosion and Sediment Control Plan and National Pollutant Discharge Elimination System 1200-C Stormwater Construction Permit. In addition, the Certificate Holder will implement a soil monitoring program as outlined in Appendix A to ensure that construction and operation of the repower are not likely to result in a significant adverse impact to soils.

3.1 Revegetation of Agricultural Lands

Temporarily disturbed agricultural lands (i.e., dryland wheat fields) will be reseeded with the appropriate crop or maintained as fallow in consultation with the landowner or farm operator. The Certificate Holder will consult with the landowner or farm operator to determine seed mix, application methods, and rates for seed and fertilizer. Success of cropland revegetation will have been achieved when production of the revegetated area is comparable to that of adjacent, non-disturbed croplands of the same type. Success determination will involve consultation with the landowner or farm operator, and the Certificate Holder will report to ODOE on the success of cropland restoration efforts.

3.2 Revegetation of Wildlife Habitat

Following construction, all areas, with the exception of temporarily disturbed agricultural lands and developed lands, will be reseeded with a mix of native or native grasses (see Section 3.2.2). All seeds will be obtained from a reputable supplier in compliance with the Oregon Seed Law (Oregon Administrative Rule 603-056). Seeding and planting will be done in a timely manner and in the appropriate season to facilitate germination and establishment of seeded species.

3.2.1 Seeding Methods

The seeding methods and timing of planting will be appropriate to the seed mixes (see Section 3.3.2), weather conditions (e.g., precipitation, wind speed, temperature, etc.), and site conditions (including area size, slope, and erosion potential) based upon consultation with ODFW and the seed supplier. Seeding between late-fall and late-winter/early-spring is typically recommended; however, the Certificate Holder will consult with ODFW and/or the seed supplier to determine the

optimal timing for seed application based on climatic conditions of the particular year when construction and revegetation efforts are implemented. Three common seed application methods that may be used are broadcast seeding, drill seeding, and hydroseeding.

3.2.2 Seed Mixes and Shrub Plantings

One seed mix is being proposed for revegetation efforts throughout all temporarily disturbed wildlife habitat areas of the Facility repower corridor. This seed mix, presented in Table 2, includes native grass species selected based on relative availability (i.e., are species commonly available from seed suppliers) and compatibility with local growing conditions. Appendix B provides a list of vendors within the region who supply or can be contracted to collect the seeds included in the proposed seed mix. Composition of the final seed mix will be determined following pre-construction baseline surveys (see Section 5.2) and in consultation with ODOE and ODFW.

The Certificate Holder will make all attempts to procure the approved seed mix. However, if the species included in the seed mix are not available at the time of procurement, the Certificate Holder will obtain approval from ODOE prior to making substitutions to the approved seed mix.

Table 2. Proposed Seed Mix

Common Name	*Scientific Name*	Percent of Mix
Sandberg bluegrass	*Poa secunda* ssp. *secunda*	25
Sherman big bluegrass; alkali bluegrass	*Poa secunda* ssp. *juncifolia* (syn. *Poa ampla*)	25
Streambank wheatgrass	*Elymus lanceolatus* ssp. *riparius* (syn. *Agropyron riparium*)	20
Thickspike wheatgrass	*Elymus lanceolatus* ssp. *lanceolatus*	20
Sand dropseed	*Sporobolus cryptandrus*	10

For the approximately 54 acres of temporarily disturbed Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass habitat (Table 1), basin big sagebrush (*Artemisia tridentata* var. *tridentata*) seeds would be added to the proposed seed mix at a rate of 0.1 to 0.2 pounds of pure live seed per acre. Due to the ability of broom snakeweed (*Gutierrezia sarothrae*) and rabbitbrush (*Chrysothamnus viscidiflorus, Ericameria nauseosa*) to recolonize disturbed areas, these species are not proposed for planting. However, if revegetation monitoring (see Section 5.0) indicates these species are not recolonizing temporarily disturbed areas of the Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass (SSA) and Rabbitbrush-Snakeweed-Eriogonum/Bunchgrass (SSB) habitat subtypes, remedial actions such as seeding of these species will be implemented.

4.0 Revegetation Documentation

Records will be kept of revegetation efforts, both for agricultural lands and other habitat. Records will include the following:

- Date construction phase or construction activity was completed;
- Description of the impacted area (location, acres impacted, pre-disturbance condition);
- Date revegetation was initiated;
- Description of the revegetation effort;
- Supporting figures representing the location, acres affected, and pre-disturbance condition of the revegetation area; and
- Confirmation from the landowner that temporary disturbances in cropland have been satisfactorily restored.

The Certificate Holder will update these records as revegetation work occurs and will provide ODOE with copies of these records, along with submission of the annual report required by the Site Certificate.

5.0 Revegetation Monitoring

Following implementation of revegetation efforts, the Certificate Holder will monitor the temporarily disturbed wildlife habitat areas, unless the landowner has converted the area to land uses that preclude meeting revegetation success criteria. Monitoring will be conducted by a qualified botanist or revegetation specialist annually for five years starting the first growing season after seeding.

Following annual monitoring, a monitoring report will be prepared and will include the following:

- The results of annual monitoring;
- The investigator's assessment of whether the revegetated areas are trending toward meeting the success criteria;
- Assessments of factors impacting the ability of the revegetated area to trend towards meeting the success criteria; and
- Recommendations of remedial actions, if any.

Based on the fifth annual assessment, a long-term monitoring plan will be developed in coordination with ODOE and ODFW. This may include remedial actions, additional monitoring, and/or additional mitigation for areas that have been determined by ODOE, in consultation with ODFW, not to have met the success criteria. If it is determined, in consultation with ODOE and ODFW, that revegetated areas have met the success criteria prior to the fifth annual assessment,

annual monitoring will be deemed complete and a long-term monitoring plan will be developed in coordination with ODOE and ODFW.

5.1 Monitoring and Reference Sites

To determine if revegetation efforts are meeting the success criteria outlined in Section 5.4, paired monitoring (i.e., treatment) and reference (i.e., control) sites will be established in each of the habitat subtypes that will be temporarily disturbed by construction (with the exception of agricultural land). Reference sites are intended to represent target conditions for the revegetation effort. Vegetation within monitoring sites in revegetation areas will be compared with those in the associated reference sites to measure success of the revegetation activities.

Seventeen paired monitoring and reference sites (34 total sites) will be established and monitored. Table 3 presents the number of monitoring and reference sites that will be established within each habitat subtype anticipated to be temporarily disturbed. The number of paired monitoring and reference sites was based on the extent of anticipated temporary disturbance as follows:

- Less than 1 acre of temporary disturbance = 0 sites
- 1 to 10 acres of temporary disturbance = 1 site
- 11 to 35 acres of temporary disturbance = 2 sites
- For each additional 25 acres of impacts, one additional site will be added (e.g., 36-60 acres of impact = 3 sites, 61-85 acres = 4 sites, etc.)

Table 3. Number of Monitoring and Reference Sites within Each Habitat Subtype

Habitat Category	Habitat Subtype	Temporary Disturbance (Acres)	Number of Monitoring Sites	Number of Reference Sites
2	Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass (SSA)	36.1	3	3
	Eriogonum/Poa sandbergii – Annual Grass (SSC)	8.0	1	1
	Escarpment (ESC)	0.1	0	0
3	Rabbitbrush-Snakeweed-Eriogonum/Bunchgrass (SSB)	162.4	8	8
	Sagebrush-Rabbitbrush-Snakeweed/Bunchgrass-Annual Grass (SSA)	17.8	2	2
	Annual Grass and Weeds (AG)	6.5	1	1
4	Annual Grass and Weeds (AG)	12.7	2	2
TOTAL		**243.6**	**17**	**17**

Preliminary locations of monitoring and reference sites are provided on Figure 1. Locations were randomly selected using existing habitat mapping. Additional monitoring and reference site locations were also chosen as alternative locations in case one of the selected monitoring and reference site locations is deemed unacceptable during pre-construction baseline surveys (see

Section 5.2). The locations of these alternative monitoring and reference sites are also provided on Figure 1.

5.2 Pre-Construction Baseline Surveys

Prior to initiation of construction, surveys will be conducted to evaluate baseline conditions within the proposed monitoring and reference sites shown on Figure 1. Both quantitative and qualitative data will be collected during the pre-construction baseline surveys as described in Section 5.3.1. Selection of appropriate sites and collection of pre-construction data will ensure that monitoring and reference sites are located in areas of similar habitat type and quality prior to disturbance. This will help ensure that comparison between monitoring and reference sites is appropriate for determining successful revegetation.

If it is determined during pre-construction baseline surveys that one of the selected monitoring or reference sites is deemed unacceptable (e.g., an area has been converted to cropland), one of the alternate monitoring and/or reference sites will be selected, and baseline monitoring will be conducted for those sites. In addition, a reconnaissance survey of alternate monitoring and reference sites that are not selected will be conducted to ensure that these sites are located in suitable areas (e.g., in the appropriate habitat type and habitat quality) in case one of these alternate sites is needed during future monitoring (e.g., one of the selected monitoring or reference sites is converted to a different land use).

5.3 Revegetation Monitoring Methods

5.3.1 Data Collection

Both quantitative and qualitative data will be collected during pre-construction baseline surveys and post-construction annual monitoring. Quantitative data will be collected along one 50-meter long transect located within each selected monitoring and reference site. During pre-construction baseline surveys (Section 5.2), the exact locations of these transects will be established and the ends of each transect line will be recorded using a global positioning system unit capable of submeter accuracy. The Daubenmire method (NRCS and BLM 1999) will be used to assess vegetative cover and species composition along each transect. A 0.5-meter by 0.5-meter quadrat will be placed every 5 meters along the transect, and the percent cover of each plant species, as well as bare soil, litter, and biotic crust within each quadrat, will be recorded using Daubenmire cover classes. Site characteristics including slope, aspect, elevation, soil type, and habitat type will also be recorded. The datasheet for recording data is provided in Appendix C. In addition, photographs will also be taken at the end of each transect, and the compass bearing will be recorded for each photograph taken.

Qualitative monitoring will supplement quantitative data and help to describe overall site conditions and assess the need for remedial actions to ensure sites are progressing toward the success criteria outlined in Section 5.4. Qualitative data that will be collected during pre-construction baseline surveys and annual monitoring will include the following:

- Evidence of ongoing, recent, or past disturbance
- Evidence of wildlife use
- Degree of erosion (high, moderate, or low)
- Overall plant vigor

5.3.2 Data Analysis

Based on data collected, the following parameters will be assessed for each reference and monitoring site:

- Total vegetative cover;
- Cover of native and desirable grass species;
- Cover of shrubs;
- Percent cover of invasive species and state and county-designated noxious weeds;
- Proportion of native and desirable plant species; and
- Species diversity (number of plant species observed).

These results will then be compared for each monitoring site and paired reference site to determine if the revegetated areas are trending toward meeting or have met the success criteria as described in Section 5.4.

5.4 Revegetation Success Criteria

Each monitoring report will include an assessment of whether the temporarily disturbed revegetated areas are meeting or trending toward meeting the success criteria. Revegetation areas would be deemed successfully revegetated when the following success criteria are met:

- **Native Forbs:** No success criteria will be applied as forbs are not included in the proposed revegetation seed mix due to concerns regarding noxious weed control.
- **Native Shrubs:** The average cover of the shrub component should be at least 50 percent of the reference site within 5 years. At least 15 percent of the shrub cover should be the dominant species found on the reference site. The diversity of shrub species within the revegetated areas should at least equal the shrub species diversity measured on the reference site.
- **Native and Desirable Grasses:** Cover of native and desirable (i.e., species included in seed mixes and/or native species that have naturally colonized) grass species is at least 85 percent similar to reference sites.
- **Noxious Weeds:** Presence and cover of noxious weeds is equal to or less than that of the reference site.

Final determination of whether the Certificate Holder has met the revegetation obligations will be made by ODOE, in consultation with ODFW.

6.0 Remedial Action

After each monitoring visit, the Certificate Holder's qualified investigator will report to the Certificate Holder regarding the revegetation progress of each revegetation area. If applicable, the investigator will make recommendations to the Certificate Holder for reseeding, weed control, or other remedial measures for areas that are not showing progress toward achieving revegetation success. The investigator will provide a description of factors that may be contributing to the lack of revegetation success. The Certificate Holder will include the investigator's recommendations for remedial actions and the measures taken in that year's monitoring report. ODOE may require reseeding or other remedial measures in cases where success criteria have not been met.

7.0 Noxious Weed Control

The management of noxious weeds will be considered throughout all stages of construction and operation of the Facility repower and will include the following:

- **Prevention:** Implementing measures to prevent the spread of noxious weeds during construction, operation, and maintenance activities.
- **Treatment:** Treating noxious weed populations with their appropriate control methods, at appropriate time intervals.
- **Monitoring:** Assessing noxious weed changes within the Facility site boundary over time and ensuring that legacy as well as new weed populations are not increasing their distributions.

7.1 Prevention

Prior to the start of construction, all personnel will be instructed on of the importance of noxious weed control. The Certificate Holder or their construction contractor will provide information and training to all construction personnel regarding noxious weed identification and prevention strategies. Operations and maintenance personnel will be similarly informed.

Implementation of best management practices will also aid in minimizing the spread of noxious weeds during construction activities, revegetation efforts, and operation and maintenance activities. Best management practices that will be implemented include:

- Limiting vehicle access to designated routes, whether existing roads or newly constructed roads, and the outer limits of construction disturbances per the final design for the Facility;
- Limiting vehicle traffic in noxious weed-infested areas;

- Cleaning construction vehicles prior to entering the Facility for the first time and upon completion of work at the Facility at a wash station located at an onsite location, or at a public car wash in the vicinity of the Facility;
- Cleaning vehicles and equipment associated with ground disturbance and movement of topsoil utilizing a mobile wash station after performing work in noxious weed-infested areas and prior to performing work in non-infested areas;
- Where feasible, not moving topsoil and other soils from noxious weed-infested areas outside of the infested areas and returning them to their previous location during reclamation activities;
- Providing information regarding target noxious weed species at the operations and maintenance building;
- Revegetating the site with appropriate, local native seed or native plants; when these are not available, non-invasive, and non-persistent non-native species may be used; and
- Ensuring that seed and straw mulch used for site rehabilitation and revegetation are certified free of noxious weed seed and propagules.

7.2 Treatment

Noxious weed treatment will focus on control of existing populations of noxious weeds within areas disturbed by repower construction. Existing noxious weed populations will be prevented from expanding in size and density and spreading to new sites. Where practicable, existing populations of noxious weeds should be eradicated. Additionally, if it is determined that noxious weeds have invaded areas immediately adjacent to the Facility (e.g., areas visible just beyond the outer limits of construction disturbances associated with the Facility or along access roads) as a result of construction, the Certificate Holder will contact the landowner and seek approval to treat those noxious weed populations. New noxious weeds detected during post-construction restoration will also be considered a result of construction activities and shall be controlled and treated accordingly.

Control of noxious weeds will be implemented through manual, mechanical, chemical, or biological control measures. Manual control methods include hand-pulling and using hand tools to remove noxious weeds. Mechanical control includes mowing or disking with machinery. Chemical application is accomplished through use of herbicides targeted to the individual weed species. Biological control is the use of non-native agents, including invertebrate parasites and predators, and plant pathogens, to reduce populations of non-native invasive plants (USFS 2005). Several state and county-designated noxious weeds have been targeted for biological control (ODA 2023a). The most appropriate control method depends on the noxious weed species being treated, the size of infestation, and the terrain and habitat needing treated. Standard treatment methods for noxious weeds can be found in the Pacific Northwest Weed Management Handbook (Peachey 2023), the Oregon Department of Agriculture (ODA) Oregon Noxious Weed Profiles (ODA 2023b), and *Weed Control in Natural Areas in the Western United States* (DiTomaso et al. 2013).

The Certificate Holder will be responsible for hiring a qualified (e.g., possesses a Commercial or Public Pesticide Applicator license from the ODA, has training in noxious weed management) contractor to implement the treatment of noxious weeds. In addition, the Certificate Holder or their contractor will ensure that noxious weed treatment does not affect revegetation efforts.

7.3 Noxious Weed Monitoring

Monitoring for noxious weeds will be conducted for the first five years following construction to assess weed growth and inform noxious weed control measures. Monitoring for noxious weed infestations will also enable the Certificate Holder to respond to new noxious weeds infestations in a timely manner and ensure the success of the site's revegetation. Noxious weed inspections will occur across the entire Facility through visual inspection of the site while driving and/or walking. These inspections will be used to inform ongoing noxious weed control efforts.

Monitoring will assess the success of noxious weed treatments and will document any new noxious weed infestations observed. These results will be summarized in annual monitoring reports that describe the noxious weeds identified, treatments implemented, and treatment success, and will make recommendations to improve treatment success (if necessary) and note any new target noxious weed species or emergence. Reports will be submitted to ODOE, ODA, ODFW, and Gilliam County annually.

Based on the success of control efforts after the fifth year of annual monitoring, the Certificate Holder will consult with ODOE, ODA, and Gilliam County to design a long-term weed control plan. The Certificate Holder will maintain ongoing communication with individual landowners, ODA, Gilliam County, and ODOE regarding noxious weeds within the Facility. Landowners may also contact the Certificate Holder directly to report the presence of noxious weeds related to Facility activity. The Certificate Holder will control the noxious weeds on a case-by-case basis and prepare a summary of measures taken for that landowner. During the operational period of the Facility, the Certificate Holder will control noxious weeds as described in the long-term weed control plan.

8.0 Roles and Responsibilities

The Certificate Holder is the overall responsible party for construction and operation of the Facility repower and implementation of the noxious weed management activities described in this document. However, the Certificate Holder may use contractors to complete tasks associated with noxious weed management and monitoring. Example responsible parties and their roles may include the following:

Monitoring Contractor

- Perform site visits (annually as needed) to document noxious weed occurrences.
- Provide summary memo after each visit to the Certificate Holder's operations manager outlining findings and treatment recommendations.

- Communicate directly with Weed Management Contractor and provide maps and photos of noxious weed species locations to Weed Management Contractor.
- Communicate with ODA and Gilliam County about noxious weed survey findings and treatment plans.
- Prepare annual report for the Facility describing noxious weed monitoring findings and treatments.
- Organize and attend quarterly calls with the Certificate Holder and Weed Management Contractor.
- Attend calls with ODA and Gilliam County as needed.

Certificate Holder Site Manager

- Communicate findings and recommendations from Monitoring Contractor to the Weed Management Contractor.
- Review annual reports to ensure all treatments performed by Weed Management Contractor are documented.
- Maintain landowner communications, providing guidance to Monitoring Contractor and Weed Management Contractor regarding landowner restrictions/requests for performing noxious weed monitoring and treatment on their properties.
- Attend quarterly calls with Monitoring Contractor and Weed Management Contractor.
- Attend calls with ODA and Gilliam County as needed.

Weed Management Contractor

- Review Monitoring Contractor memos describing noxious weed occurrences and recommendations and plan appropriate treatment to address those issues.
- Communicate treatment plan to Certificate Holder.
- Maintain records of when, where, and what type of noxious weed treatments are being performed and provides documentation of work being performed to the Certificate Holder Site Manager.
- Maintain all appropriate documentation of chemicals applied. Share documentation during quarterly calls with Certificate Holder and Monitoring Contractor, and prior to annual report preparation. Documentation should include type and quantity of herbicides applied, dates applied, and any associated U.S. Environmental Protection Agency/Oregon Department of Environmental Quality licensing/documentation of chemicals used.
- Attend quarterly calls with Monitoring Contractor and Certificate Holder.

An example noxious weed monitoring schedule is presented in Table 4. This monitoring schedule will be revised, as applicable, based on conditions observed on site (e.g., if noxious weeds are being successfully controlled, monitoring frequency will be reduced).

Table 4. Example Noxious Weed Monitoring Schedule

Monitoring Site Visits	Frequency	Focus
March-April	Once	Conduct a full site-wide noxious weed survey to identify areas for treatment. Work with Weed Management Contractor on a post-emergent chemical treatment, mechanical, or other treatment plan to manage small populations. Report on previous treatments' effectiveness, as applicable.
April-August	Monthly, or as needed	Monitor treated areas for effectiveness, identify new noxious weed populations, make recommendations for chemical retreatment or mechanical or other controls to manage new or existing small noxious weed populations.
July-August	Once	Monitor and collect data on noxious weed populations in revegetated areas.
September-October	Once	Conduct a full site-wide noxious weed survey to monitor treated areas, identify new noxious weed populations, make recommendations for chemical retreatment or mechanical or other controls and plan for pre-emergent chemical applications.

9.0 Plan Amendment

This Plan may be amended from time to time by agreement of the Certificate Holder and the Oregon Energy Facility Siting Council (EFSC). Such amendments may be made without amendment of the Site Certificate. EFSC authorizes ODOE to agree to amendments to this Plan. ODOE shall notify EFSC of all amendments, and EFSC retains the authority to approve, reject, or modify any amendment of this plan agreed to by ODOE. This Plan may also be amended periodically as the Certificate Holder continues to evaluate and modify, as needed, agricultural dual-use activities at the Facility.

10.0 References

DiTomaso, J.M., G.B. Kyser, S. R. Oneto, R. G. Wilson, S.B. Orloff, L.W. Anderson, S.D. Wright, J.A. Roncoroni, T.L. Miller, T. S. Prather, C. Ransom, K.G. Beck, C. Duncan, K.A. Wilson, and J. J. Mann. 2013. *Weed Control in Natural Areas in the Western United States.* Weed Research and Information Center, University of California. 544 pp.

MB&G (Mason, Bruce, & Girard, Inc.). 2015. 2015 (Year-5) Revegetation Monitoring Report. Leaning Juniper II Wind Power Project. Gilliam County, Oregon. December 7, 2015.

NRCS and BLM (Natural Resources Conservation Service and the U.S. Bureau of Land Management). 1999. Sampling Vegetation Attributes. Interagency Technical Reference, pp. 55-63. Originally published 1996, revised 1997 and 1999. BLM/RS/ST-96/002+1730.

ODA (Oregon Department of Agriculture). 2023a. Weed Biological Control. Available online at: https://www.oregon.gov/oda/programs/Weeds/Pages/BiologicalControl.aspx. Accessed October 2023.

ODA. 2023b. Oregon Noxious Weed Profiles. Available online at: https://www.oregon.gov/oda/programs/Weeds/OregonNoxiousWeeds/Pages/AboutOregonWeeds.aspx. Accessed October 2023.

Peachey, E., editor. 2023. Pacific Northwest Weed Management Handbook [online]. Oregon State University, Corvallis, Oregon. https://pnwhandbooks.org/weed. Accessed October 2023.

USFS (U.S. Forest Service). 2005. Preventing and managing invasive plants, Final Environmental Impact Statement (EIS), Pacific Northwest Region Invasive Plant Program. Region 6, Portland, Oregon.

Figure

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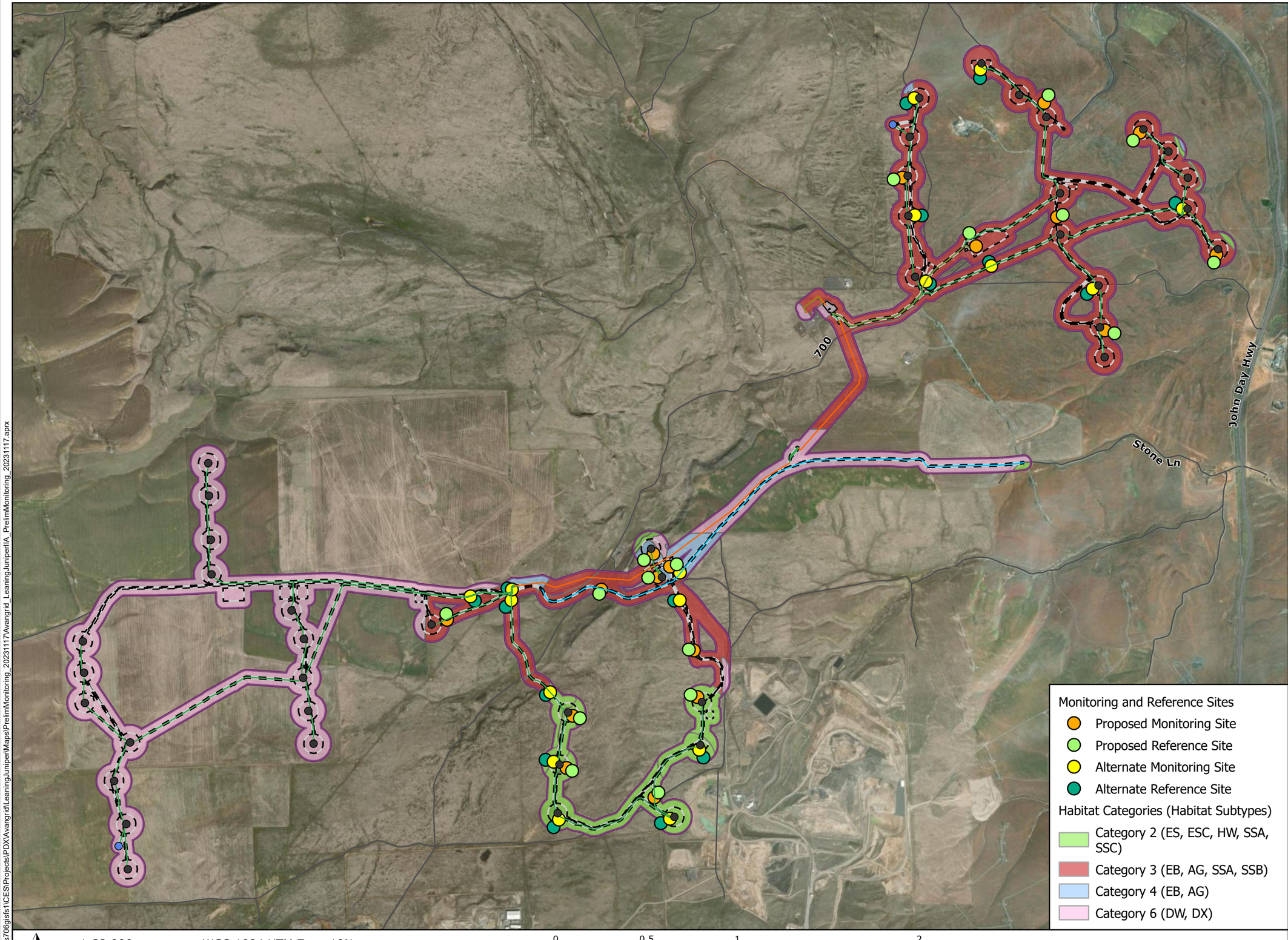
Avangrid Leaning Juniper IIA Revegetation and Noxious Weed Control Plan

Figure 1 Preliminary Monitoring and Reference Sites

MORROW COUNTY, OR



- Repower Corridor
- Temporary Impact Limit of Disturbance
- Existing Turbine
- Existing Met Tower
- Existing Access Road
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Substation or O&M Facility

Habitat Subtype Codes
AG: Annual Grass and Weeds
EB: Exposed Basalt
ES: Ephemeral Stream
ESC: Escarpment
DW: Dryland Wheat
DX: Developed (Other)
HW: Herbaceous Wetland
SSA: Sagebrush-Rabbitbrush-Snakeweed Bunchgrass- Annual Grass
SSB: Rabbitbrush-Snakeweed-Eriogonum/ Bunchgrass
SSC: Erigonum/Poa sandbergii-Annual Grass

TETRA TECH

AVANGRID RENEWABLES

Monitoring and Reference Sites
- Proposed Monitoring Site
- Proposed Reference Site
- Alternate Monitoring Site
- Alternate Reference Site

Habitat Categories (Habitat Subtypes)
- Category 2 (ES, ESC, HW, SSA, SSC)
- Category 3 (EB, AG, SSA, SSB)
- Category 4 (EB, AG)
- Category 6 (DW, DX)

Reference Map

1:32,000 WGS 1984 UTM Zone 10N

0 0.5 1 2 Miles

NOT FOR CONSTRUCTION

\\cess706gisfs1\CES\Projects\PDX\Avangrid\LeaningJuniperMaps\PrelimMonitoring_20231117\Avangrid_LeaningJuniperIIA_PrelimMonitoring_20231117.aprx

Appendix A. Soil Monitoring Plan

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Draft Repower Soil Monitoring Plan

Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Prepared for
Leaning Juniper Wind Power II, LLC

Prepared by

December 2023

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Figure 1. Soil Classification Types

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1.0 Introduction

Leaning Juniper IIA Wind Power Facility (Facility) is an operational wind power facility with 43 turbines and a maximum generating capacity of 90.3 megawatts (MW) located within a site boundary of approximately 6,404 acres in Gilliam County, Oregon. Leaning Juniper Wind Power II, LLC (Certificate Holder) is seeking a third amendment to the Facility Site Certificate to repower 36 of the Facility turbines and decommission 3 turbines, which will result in 40 operational turbines. The proposed changes to the Facility, as identified in the Request for Amendment 3 (RFA 3), would not alter the previously approved site boundary or micrositing corridors. All repower disturbance would occur in a portion of the micrositing corridor designated by Certificate Holder as the "repower corridor." Additional details regarding proposed activities associated with the Facility repower are provided in the RFA 3. The Oregon Department of Energy (ODOE) requested, as part of RFA 3, that the Certificate Holder develop a soil monitoring plan for the Facility repower.

This Plan has been prepared to describe the methods, success criteria, and monitoring and reporting requirements for soils that may be temporarily disturbed during Facility repower construction. As required by the Oregon Administrative Rule's (OAR) 345-022-0022 Soil Protection Standard, the Oregon Energy Facility Siting Council (EFSC) can issue a Site Certificate only if EFSC finds that the design, construction, and operation of the Facility, considering mitigation, are not likely to result in a significant adverse impact to soils. In addition, the RFA3 would be subject to the Erosion and Sediment Control Plan (Condition 70) identified in the September 21, 2007 Final Order of the Site Certificate. In 2007, EFSC found that the Facility complies with the Soil Protection Standard and the OAR has not changed since the original site certificate was issued for the Facility.

The soils in the repower corridor consist of silty and sandy loams typically less than 15 feet thick. These soil types consist of deep, well-drained soils with slow to rapid runoff and slow to moderate permeability (LJII 2006). The Certificate Holder has confirmed that the six soil types (Krebs, Olex, Sagehill, Ritzville, Warden, Willis) and conditions within the repower corridor have remained the same since the original Site Certificate was issued in 2007. Temporary disturbance associated with RFA 3 construction would impact up to approximately 396 acres within previously approved micrositing corridors located in the repower corridor; no new permanent disturbance is anticipated.

Temporary disturbances to soil from construction activities within the repower corridor would involve topsoil removal and stockpiling, grading and excavation of subsoil, and soil compaction from laydown activities, heavy equipment movement, and vehicle traffic. Areas within the repower corridor that contain steady high winds, where vegetation has been removed and soil has been disturbed and left bare, would likely experience erosion from water or wind until they are stabilized; thus, the potential for erosion in these areas is considered moderate. There is also the increased potential for dust generation within the repower corridor during construction when the soil is exposed or excavated. Unless adequate measures are taken to prevent soil removal, soil quality could deteriorate over time. Left unprotected, the soil within the repower corridor would

further degrade by erosion and begin to adversely affect the surrounding environment. Therefore, soil best management practices would be implemented by the construction contractor through the Facility's National Pollutant Discharge Elimination System (NPDES) 1200-C Stormwater Construction Permit to mitigate the potential for erosion and mitigation efforts will be required under the Erosion Control Plan and the NPDES 1200-C permit. The condition of the soils prior to construction would be recorded and would include, but not be limited to, existing infiltration rate, compaction. In addition, landscape features such as berms and ditches that would need to be preserved or rebuilt would be identified and recorded. Furthermore, soil protection measures such as topsoil separation and decompaction would be completed as specified during construction. This Plan supports these efforts and provides direction for monitoring soil quality in the repower corridor prior to and after the construction of the wind turbines.

2.0 Monitoring Program

Soil quality is the capacity of a soil to function within a natural or managed ecosystem. The quality of the soil helps to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation. To identify changes that may occur in soil quality within the repower corridor from construction activities, monitoring is necessary. Soil monitoring would determine how the soil is functioning; whether or not it sustains biological diversity, activity, and productivity; regulates and partitions water and solute flow; filters and buffers organic and inorganic materials; and stores and cycles nutrients. Because soil cannot be measured directly, its quality is assessed indirectly using a small set of soil properties that are measured soil in different scales and in a given time frame (NRCS 2001a). Soil quality assessments are conducted by evaluating indictors, or the physical, chemical, and biological properties, processes, or characteristics of the soil. Indicators also include morphological or visual features of plants (e.g., rooting depth can indicate bulk density of the plant or how compact the soil may be). Indicators are selected based on their relationship to specific soil properties and quality. Once selected, indicators can be assessed quantitatively by obtaining a precise, numeric value of that indicator (e.g., measurement of the infiltration rate). Thus, the indicators would reveal the general trend or direction of soil quality within the repower corridor; whether or not soil quality is increasing, decreasing, or being maintaining (NRCS 2001b). Because high quality soil is the foundation of soil health, the collection of representative soil samples within the repower corridor, both pre- and post-construction information would be collected.

One way of determining if soil quality is increasing, decreasing, or being maintained is to collect pre- and post- construction harvest yield data from land planted in dryland wheat within the repower corridor and compare this data to land planted in dryland wheat outside the repower corridor using paired plots. This harvest yield data can then be analyzed to see if there is a change in overall yield. If soil quality is increasing in the dryland wheat fields during construction, then dryland wheat harvest yield will increase. If soil quality is decreasing in the wheat fields during construction, dryland wheat will not be able to maintain productivity, store or cycle nutrients, or

regulate its water flow; therefore, harvest yield will decrease. Furthermore, if soil quality is maintained in the wheat fields during construction, then harvest yield will also be maintained.

If harvest yield monitoring is not feasible, pre- and post-construction soil assessments would be conducted to monitor changes or trends in soil quality within the repower corridor. These assessments would be conducted in the year prior to construction and for 2 years following construction. The assessment would include three paired plots. Soil samples from each of the major soil types would be collected from inside the repower corridor (repower corridor plot) and the other outside the repower corridor (reference plot). Paired plots would then be used and located in areas with similar topographical features (aspect and slope) and the same soil types. Plots to conduct soil sampling for the assessment would be identified during a site visit prior to the start of construction and will be selected based on micrositing information. There are 19 soil types found within the repower corridor, but only three occupying significant portions of the corridor. Approximately 32% of the corridor is in the Ritzville silt loam, 2 to 7 percent slopes, and 24% is in the Olex silt loam, 0 to 5 percent slopes. An additional 14% is within the Krebs silt loam, 2 to 5 percent slopes. Because the other soil types each occupy only a small percentage of the total (most types less than 3% each), they will not be separately monitored. To monitor change in soil quality over time, the same plots will be measured at each sampling time and if possible, measurements would be conducted with the same soil moisture conditions at each sampling time to reduce variability. If the plots are placed in locations that do not result in construction activities due to later micrositing, they would be removed from the study.

The Natural Resources Conservation Service Soil Quality Test Kit Guide (NRCS 2001a) includes field procedures to assist in the evaluation of the level of one or more soil functions and contains soil testing methods for different soil qualities. These testing methods are used as a screening tool to provide immediate results when comparing monitoring changes in soil quality over time and for diagnosing possible soil health problems. The proposed soil quality metrics and timing in Table 1 would help determine if the temporary disturbances associated with RFA3 construction would increase, decrease, or maintain soil quality within the repower corridor. These metrics would also provide the benchmark conditions used in determining the soil profile description, infiltration rate, and nutrient test within the plots. The following sections describe the relevant tests for this Project, as well as the interpretation of results and reclamation measures.

Table 1. Proposed Soil Quality Metrics and Timing

Metric	Metric Description	Timing of Study	Number of Data Points
Agricultural landscape features such as berms and ditches	Identification and recording of existing features	Prior to construction	Observations collected during pre-construction surveys
Soil physical observations and estimations	Provides soil profile description (depth of topsoil, observation of plant roots, resistance, soil structure, size of aggregates or peds, grade	Soil profiles will be described prior to construction and one time in the first year of the study.	One soil pit per each sample site pre- and post-construction.

Metric	Metric Description	Timing of Study	Number of Data Points
	of aggregates, and soil textural class)		
Soil infiltration rate	Provides measurement of the rate of downward entry of water into the soil[1]	Infiltration measurements will be taken the year prior to construction and for 2 years following construction. preferably during mid-growing season.	Three infiltration tests per sample site per year.
Soil compaction	Provides measurement of compaction onsite.	Compaction measurements will be taken the year prior to construction and for 2 years following construction. preferably during mid-growing season.	Three compaction measurements per sample site per year.
Nutrient testing	Provides measurement of the amount of plant-available nutrients, the total organic matter present, and the pH.	Nutrient tests will be taken the year prior to construction and for 2 years following construction.	One nutrient test per sample site per year
1. Desta,K. 2019. Soil Quality Monitoring: A Practical Guide. Oklahoma Cooperative Extension Service.			

2.1 Agricultural Landscape Features

Prior to construction, surveyors will identify and record any agricultural landscape features such as berms and ditches within the repower corridor. In addition, surveyors will document current farming practices and check for a plow pan or the compacted layer of soil that forms beneath the depth at which traditional plowing or tilling equipment operates.

2.2 Soil Physical Observations and Estimations

This soil quality test is conducted to determine the physical structure of the soil or the arrangement and organization of the particles in the soil. The physical structure of the soil includes its depth, aggregate size, and water holding capacity. These physical properties help determine how much water and nutrients the soil can retain and transport; crop productivity potential; level of surface compaction; water movement; and how much water the soil can hold. Soil structure also influences the retention and transmission of water and air in the soil, as well as the mechanical proper ties of the soil. Therefore, this test would be conducted within the repower corridor to help determine if construction activities such as topsoil removal, and grading and excavation of subsoil have impacted soil quality. The collection of this information is important as it would help determine whether or not the removal of topsoil, grading or excavation was impacting water storage, nutrient cycles, soil fertility, organic carbon content, and soil productivity.

To conduct this test, a single soil pit that is a foot deep would be dug in each plot. Using a shovel, a slice of soil from the wall of the pit would be cut and used to measure the depth of the topsoil. Data such as plant root observations, soil resistance, soil structure, size of aggregates, grade of

aggregates, and soil textural class would be recorded to provide a soil profile for each plot. Testing of the soils physical properties would be conducted once prior to construction and once following construction as these properties remain the same unless there are additional disturbances to the soil. These properties would serve as the benchmark conditions for each plot and would assist in confirming that each soil sample matches the NRCS soil profile ascribed to that location.

2.3 Infiltration Rate Test

Infiltration is the process of water entering the soil. The rate at which water enters the soil is the infiltration rate, which is dependent on the soil type; soil structure, or amount of aggregation; and the soil water content (Lowery et al. 1996). This test involves measuring the amount of time it takes water to completely infiltrate the soil surface. When the soil surface has not been compacted there is an initial high rate of infiltration, but as the water enters the soil the rate of infiltration declines as the water replaces the air in the pore space. If compaction of the soil surface does occur it reduces the pore space within the soil, causing a lower infiltration rate and standing water to be present. A lower infiltration rate also causes an increase in water runoff, leading to greater soil erosion and less available water for plants. Infiltration classes based on rates as defined by the Natural Resources Conservation Service (NRCS 2020) are listed in Table 2. This test would be conducted to help determine if laydown activities, movement of heavy equipment, or vehicle traffic have impacted soil quality within the repower corridor. This test would be performed annually at both the repower corridor plots and reference plots prior to the start of construction,

To conduct this test, a portion of the plot would be cleared of surface residue and a 6-inch-diameter metal ring would be hammered into the soil at a depth of 3 inches. A sheet of plastic wrap would then be draped over the soil and ring and 1 inch of water would be poured into the ring lined with plastic wrap. The plastic wrap would then be carefully removed, leaving the water in the ring. The amount of time it takes for the 1-inch of water to infiltrate the soil would then be recorded. Because the first inch of water only wets the soil, this process would be repeated at least two times for a better estimate of the infiltration rate.

Table 2. NRCS Infiltration Rates and Classes

Infiltration Rate (minutes per inch)	Infiltration Rate (inches per hour)	Infiltration Class (soil permeability class)
<3	>20	Very rapid
3 to 10	6 to 20	Rapid
10 to 30	2 to 6	Moderately rapid
30 to 100	0.6 to 2	Moderate
100 to 300	0.2 to 0.6	Moderately slow
300 to 1,000	0.06 to 0.2	Slow
1,000 to 40,000	0.0015 to 0.06	Very slow
>40,000	<0.0015	Impermeable

2.4 Compaction

Soil scientists use a soil penetrometer to field measure subsurface compaction in soil. This tool measures resistance (pressure) to the advance of a cone-tipped rod with a T-handle, vertically through the soil column. The metric intends to measure soil compaction that can inhibit the ability of plants to penetrate the soil. An operator pushes the penetrometer rod with a cone base into the ground with consistent force. A pressure gauge records pressure in pounds per square inch(psi), equaling levels of resistance at differing soil layers. Resistance is measured at 3-inch intervals until the meter goes above 300 psi, which is a level of soil compaction most roots cannot penetrate. For this test compaction would be measured at 3, 6, 9, and 12 inches if the soils allowed.

2.5 Nutrient Test: Nitrogen, Phosphorous, Organic Matter, and pH

The nutrient test is conducted to determine the amount of nutrients in the soil that may be available to plants. In general, this test measures the amount of plant-available nutrients in the soil, the total organic matter present, and the pH and is an indicator of plant productivity. Elements such as carbon must be in a chemical form and must be dissolved in soil water to be used by a plant. When the soil has excess nutrients, some nutrients bind to the soil and become temporarily unavailable, and some react with other elements to form insoluble minerals which can be dissolved again later. When there is too much water in the soil it can leach the nutrients from it, but if there is not enough water the nutrients cannot dissolve and move into the plant (Gatiboni 2022). Thus, measuring the organic matter in the soil helps determine the amount of stored nutrients that can be made available to plants based on the health of the soil microorganisms. Measuring soil pH helps determine the acidity or alkalinity of the soil, which affects the availability of plant nutrients, activity of microorganisms, and the solubility of soil minerals. When plant-available nutrients are diminished there will be reduced plant growth, chlorosis of the foliage (color changes to light-green or yellow), distortion in leaf shape, thinning of stems, limited root growth or poorly developed root systems, and a tendency to wilt readily (Gatiboni 2022). Therefore, this test would help determine if construction activities such as topsoil removal and stock piling, grading and excavation of subsoil, and soil compaction from laydown activities, heavy equipment movement, and vehicle traffic have impacted the plant-available nutrients within the repower corridor.

To conduct this test, soil samples would be taken the year prior to construction, preferably during the growing season, at three locations within each plot to get a statistically representative sampling size. Soil samples would be collected from the top 6 inches at each soil plot location. Samples collected from the paired sample plots would then be sent to Simply Soil Testing lab in Burlington, Washington. Tests for nitrogen, phosphorous, potassium, pH, and organic matter would be run for paired soil types.

3.0 Interpretation of Results and Reclamation Measures

The goal of a soil quality assessment is to provide information about the trend of soil quality; whether it is increasing, decreasing, or being maintained. The results obtained in the initial soil

quality assessment would provide relative amounts of nutrients of in the soil from which to evaluate future changes to the soil within the repower corridor. Subsequent assessments would provide information regarding the trend or direction of soil quality and determine if the indicators are moving in the desired direction or becoming relatively stable at an acceptable level. Because soil quality would not begin to show improvement for a number of years, the continuation of soil sampling within the plots would verify whether or not the relative amounts of essential nutrients in the soil within the repower corridor is increasing, decreasing, or remaining at the same level.

For the purposes of this Repower Project, if yield monitoring or soil monitoring reveal that the essential nutrient level is no more than 10 percent above or below the relative amount between the repower corridor plots and reference plots, then monitoring will be discontinued. Monitoring would continue at all plots until the plots have been reclaimed to within 10 percent of the relative amount. However, if yield monitoring or soil monitoring trends reveal that the essential nutrient level is more than 10 percent above or below the relative amount between the repower corridor plots and the reference plots, it will be assumed that construction activities have had an adverse impact on the soils. Therefore, soil quality monitoring within the repower corridor plots and reference plots will continue to be monitored for 2 years following construction. These impacts would be mitigated using adaptive management techniques including, but not limited to, decompaction of impacted souls, the addition of supplementary nutrients or minerals to adject the pH, or the addition of composed organic matter.

4.0 References

Desta, K.G. 2019. Soil Quality Monitoring: A Practical Guide. Oklahoma Cooperative Extension Service, Plant and Soil Sciences. Available online at: http://soilwater.okstate.edu/CCA/StudyGuide%20pdfs/PSS-2262_Soil_Quality_Monitoring.pdf. Accessed December 2023.

Gatiboni, L. 2022. Soils and Plant Nutrients, Chapter 1. In: K.A. Moore, and. L.K. Bradley (eds). North Carolina Extension Gardener Handbook, 2nd ed. NC State Extension, Raleigh, NC. Available online at: https://content.ces.ncsu.edu/extension-gardener-handbook/1-soils-and-plant-nutrients. Accessed December 2023.

LJII (Leaning Juniper II). 2006. Leaning Juniper II Wind Power Facility – Exhibits H-L. Available online at: https://www.oregon.gov/energy/facilities-safety/facilities/Pages/LJA.aspx. Accessed October 2023.

LJII. 2023. Request for Amendment No. 3 to the Site Certificate for the Leaning Juniper IIA Wind Power Facility. Prepared for Oregon Energy Facility Siting Council on September 15, 2023 by Avangris Renewables. Available online at: https://www.oregon.gov/energy/facilities-safety/facilities/Pages/LJA.aspx. Accessed November and December 2023.

Lowery, B., M.A. Arshad, R. Lal, and W.J. Hickey. 1996. Soil water parameters and soil quality. p.143-157. In: J.W. Doran and A.J. Jones (eds.) Methods for assessing soil quality. Soil Sci. Soc. Am.

Spec. Publ. 49. SSSA, Madison, WI.NRCS (Natural Resources Conservation Service). 2001a. Guidelines for Soil Quality Assessment in Conservation Planning. United States Department of Agriculture, Natural Resources Conservation Service Soil Quality Institute.

NRCS. 2001b. Soil Quality Test Kit Guide. Soil Quality Institute. United States Department of Agriculture. NRCS. 2020. Cropland In-Field Soil Health Assessment Guide. Soil Health Technical Note No. 450-06. U.S. Department of Agriculture, Natural Resources Conservation Service. Washington, D.C.

Provin, T.L and M.L. McFarland. 2014. Essential Nutrients for Plants. Texas A&M AgriLife Extension Service. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating. Available online at: https://agrilifeextension.tamu.edu/wp-content/uploads/2023/08/ESC-009-essential-nutrients-for-plants.pdf

Figure

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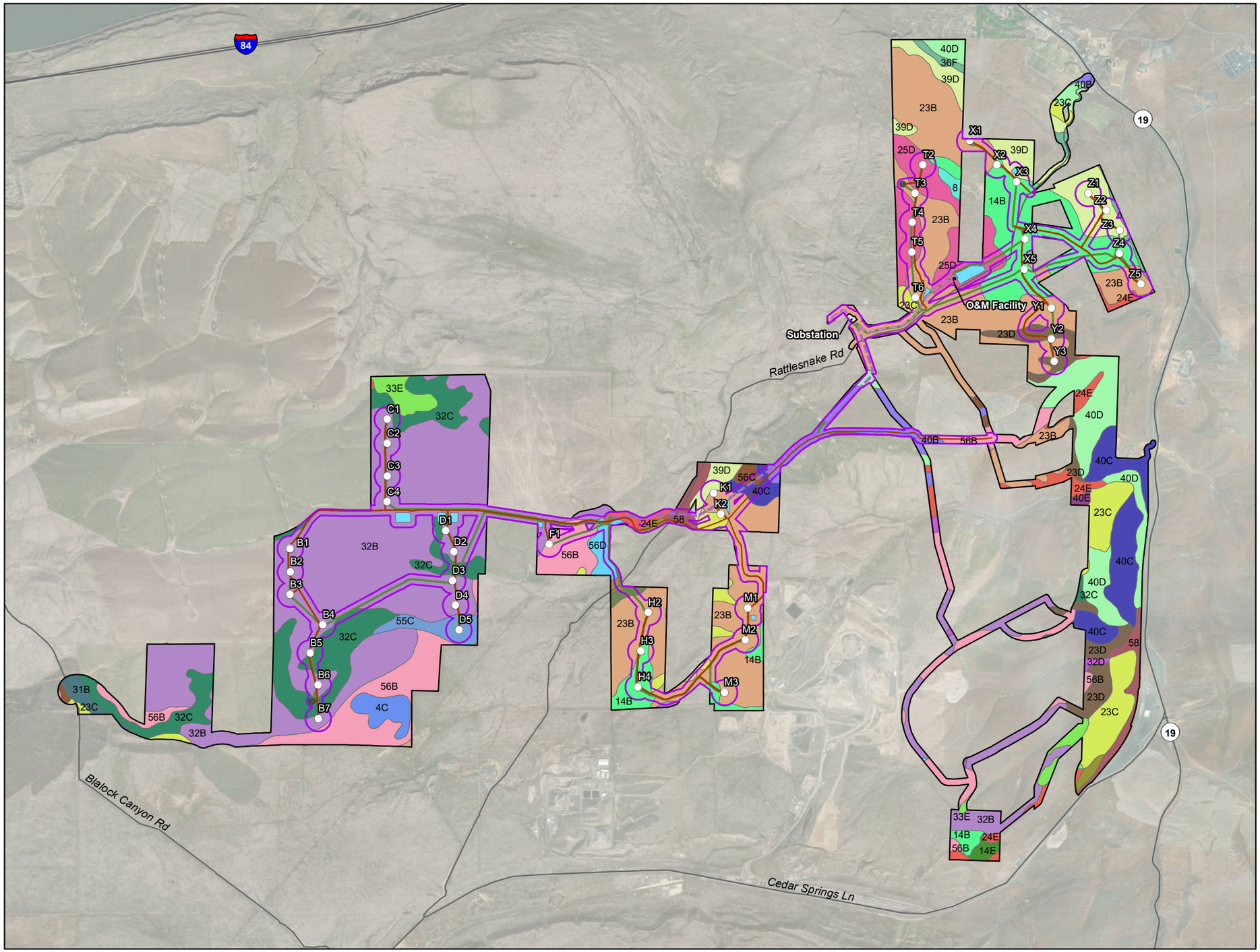

Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly

Soils

- 4C: Blalock loam, 2 to 12 percent slopes
- 8: Dune land
- 14B: Krebs silt loam, 2 to 5 percent slopes
- 14D: Krebs silt loam, 5 to 20 percent slopes
- 14E: Krebs silt loam, 20 to 40 percent slopes
- 22F: Nansene silt loam, 35 to 70 percent slopes
- 23B: Olex silt loam, 0 to 5 percent slopes
- 23C: Olex silt loam, 5 to 12 percent slopes
- 23D: Olex silt loam, 12 to 20 percent slopes
- 24E: Olex gravelly silt loam, 20 to 40 percent slopes
- 25D: Olex-Roloff complex, 5 to 20 percent slopes
- 31B: Ritzville very fine sandy loam, 2 to 7 percent slopes
- 32B: Ritzville silt loam, 2 to 7 percent slopes
- 32C: Ritzville silt loam, 7 to 12 percent slopes
- 32D: Ritzville silt loam, 12 to 20 percent slopes
- 33E: Ritzville silt loam, 20 to 40 percent north slopes
- 36F: Rock outcrop-Rubble land complex, very steep
- 39D: Roloff-Rock outcrop complex, 1 to 20 percent slopes
- 40B: Sagehill fine sandy loam, 2 to 5 percent slopes
- 40C: Sagehill fine sandy loam, 5 to 12 percent slopes
- 40D: Sagehill fine sandy loam, 12 to 20 percent slopes
- 40E: Sagehill fine sandy loam, 20 to 40 percent slopes
- 55C: Warden silt loam, 5 to 12 percent slopes
- 56B: Willis silt loam, 2 to 5 percent slopes
- 56C: Willis silt loam, 5 to 12 percent slopes
- 56D: Willis silt loam, 12 to 20 percent slopes
- 57F: Wrentham-Rock outcrop complex, 35 to 70 percent slopes
- 58: Xeric Torrifluvents, nearly level

0 0.5 1
Miles
N

Figure 1
Soil Classification Types
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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Appendix B. Seed Suppliers

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Table B-1. Seed Suppliers

Company	City, State	Web Address	Contact
BFI Native Seeds	Moses Lake, WA	http://www.bfinativeseeds.com/	(509) 765-6348
Emerald Seed & Supply	Redmond, OR	http://www.emeraldseedandsupply.com/	(541) 504-0307
Great Basin Seed	Ephraim, UT	https://greatbasinseeds.com/	(435) 283-1411
L&H Seeds	Connell, WA	https://www.lhseeds.com/	(509) 234-4433
Plants of the Wild	Tekoe, WA	www.plantsofthewild.com	kathy@plantsofthewild.com
Rainier Seeds, Inc.	Davenport, WA	www.rainierseeds.com	(509) 215-1690
Wildlands, Inc.	Richland, WA	www.wildlandsnursery.com/nursery	(509) 375-4177

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Appendix C. Revegetation Monitoring Datasheet

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Date:		Surveyor(s):							
Site #:	Soil Type:						Elevation:		
Transect Bearing:	Slope:	Aspect:			Habitat Type:				
	Quadrat Number (enter "Cover Class" for each species, as well as bare ground, litter, and biotic crust observed in each quadrat)								
Plant Species	1	2	3	4	5	6	7	8	9	10
Bare Ground										
Litter										
Biotic Crust										

Daubenmire Cover Classes

Cover Class	Range of Coverage	Midpoint of Range
1	0 - 5%	2.5%
2	6 - 25%	15.0%
3	25 - 50%	37.5%
4	50 - 75%	62.5%
5	75 - 95%	85.0%
6	95 - 100%	97.5%

Degree of Erosion (high, moderate, low):

Evidence of Wildlife Use:

Disturbances noted (past, ongoing, or recent):

Overall plant vigor:

Notes:

Attachment 6
Landowner Correspondence

PATRICK, MARCELLA

From: Eilers, Mark
Sent: Friday, December 1, 2023 9:49 AM
To: Linda Smith
Cc: Hoffbuhr, Tyler; PATRICK, MARCELLA
Subject: RE: LJ2A repower

Hi Linda
Thanks for your email confirming receipt of our Coordination letter and acknowledging that you have read and understand the temporary impacts associated with the repower. Tyler and I will make a plan to meet with you on site in early '24 and will share the soil management and erosion plan once it is available.
Regards,
Mark

Mark Eilers 612.804.9209 mark.eilers@avangrid.com

Internal Use

From: Linda Smith <lindatatonesmith@gmail.com>
Sent: Friday, December 1, 2023 9:43 AM
To: Eilers, Mark <mark.eilers@avangrid.com>
Subject: Re: LJ2A repower

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

Thank you for the email Mark. When the letter arrived I emailed Tyler and ask for the soil management and erosion control plan. He said it was not yet available. I also told him I would be able to meet with him to discuss the current farming either at the office in Portland or when he was in this area.

On Thu, Nov 30, 2023 at 4:21 PM Eilers, Mark <mark.eilers@avangrid.com> wrote:

> Dear Linda
>
> Leaning Juniper Wind Power II, LLC ("Leaning Juniper") has filed a request for amendment ("RFA") with the Oregon Department of Energy to repower the Leaning Juniper IIA Wind Power Facility, which is partially located on your property. Leaning Juniper provided you with a Landowner Coordination letter dated September 7, 2023, which was delivered to your address via the United States Postal Service on September 15, 2023. This letter is attached to this email for reference.
>
> Per your request regarding the soil management plan, we will be sure to provide this plan once it becomes available.
>
> Please confirm receipt of this Landowner Coordination letter, acknowledging that you have read and understand the temporary impacts associated with repowering the Leaning Juniper IIA Wind Power Facility. Please let us know if you would like to meet to discuss the construction plans in more details.

Thank you for your continued partnership with the Leaning Juniper IIA Wind Facility.

Sincerely,

Mark Eilers

Mark Eilers 612.804.9209 mark.eilers@avangrid.com

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--
Linda Jo Smith
Principal Broker/Owner
Tatone Smith Real Estate Group LLC
PO Box 576
51748 Ramsey Canyon Rd.
Condon, OR 97823
541-384-4193
541-378-7497 [cell]

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Arrived at Post Office

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September 15, 2023, 4:05 am

Departed USPS Facility

PORTLAND, OR 97215
September 15, 2023, 12:43 am

Arrived at USPS Facility

PORTLAND, OR 97213
September 15, 2023, 12:43 am

Arrived at USPS Facility

PORTLAND, OR 97215
September 14, 2023, 1:48 pm

In Transit to Next Facility
September 14, 2023, 10:09 am

In Transit to Next Facility
September 14, 2023, 6:13 am

Departed USPS Regional Facility
RENO NV DISTRIBUTION CENTER
September 14, 2023, 2:31 am

Arrived at USPS Regional Origin Facility
RENO NV DISTRIBUTION CENTER
September 13, 2023, 9:18 pm

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Delivered, PO Box
ARLINGTON, OR 97812
September 15, 2023, 9:22 am

Arrived at Post Office
ARLINGTON, OR 97812
September 15, 2023, 8:24 am

Arrived at USPS Facility
PORTLAND, OR 97215
September 14, 2023, 1:48 pm

In Transit to Next Facility
September 14, 2023, 10:09 am

In Transit to Next Facility
September 14, 2023, 6:13 am

Departed USPS Regional Facility
RENO NV DISTRIBUTION CENTER

Feedback

September 14, 2023, 2:31 am

Arrived at USPS Regional Origin Facility
RENO NV DISTRIBUTION CENTER
September 13, 2023, 9:18 pm

Departed Post Office
RENO, NV 89523
September 13, 2023, 4:35 pm

USPS in possession of item
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FAQs

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Delivered

Delivered, PO Box

CONDON, OR 97823
September 15, 2023, 7:48 am

Arrived at Post Office

CONDON, OR 97823
September 15, 2023, 7:43 am

Arrived at USPS Facility

PORTLAND, OR 97215
September 14, 2023, 1:48 pm

In Transit to Next Facility

September 14, 2023, 10:09 am

In Transit to Next Facility

September 14, 2023, 6:13 am

Departed USPS Regional Facility

RENO NV DISTRIBUTION CENTER

Feedback

September 14, 2023, 2:31 am

Arrived at USPS Regional Origin Facility
RENO NV DISTRIBUTION CENTER
September 13, 2023, 9:18 pm

Departed Post Office
RENO, NV 89523
September 13, 2023, 4:35 pm

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FAQs

PATRICK, MARCELLA

From: Eilers, Mark
Sent: Thursday, December 7, 2023 10:17 AM
To: Lewis, Ame
Cc: Hoffbuhr, Tyler; PATRICK, MARCELLA
Subject: WM confirmation of repower

Thank you Ame. We are happy to set up a meeting once permitting is more advanced. I will reach out to you early in '24

Mark Eilers 612.804.9209 mark.eilers@avangrid.com

Internal Use

From: Lewis, Ame <alewis6@wm.com>
Sent: Thursday, December 7, 2023 9:22 AM
To: Eilers, Mark <mark.eilers@avangrid.com>
Subject: RE: LJ2A repower

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

Mark,
Receipt is confirmed. The site requests a map and a schedule for the work. It would be very helpful to have a meeting with site management so that they understand and can appropriately communicate with the other lessees.

Thanks, Ame

AME WELLMAN LEWIS
(admitted in Oregon and Washington State)
Senior Legal Counsel
Pacific Northwest Area
alewis6@wm.com

C: (206) 919-3236
7227 NE 55th Ave.
Portland, OREGON 97218

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Internal Use

From: Eilers, Mark <mark.eilers@avangrid.com>
Sent: Sunday, December 3, 2023 1:48 PM
To: Lewis, Ame <alewis6@wm.com>
Subject: [EXTERNAL] RE: LJ2A repower

Hi Ame
Will you have time to confirm receipt next week
Thanks

Mark Eilers 612.804.9209 mark.eilers@avangrid.com

Internal Use

From: Eilers, Mark
Sent: Thursday, November 30, 2023 4:21 PM
To: Lewis, Ame <alewis6@wm.com>
Cc: Hoffbuhr, Tyler <Tyler.Hoffbuhr@avangrid.com>; PATRICK, MARCELLA <marcella.patrick@avangrid.com>
Subject: LJ2A repower

Dear Ame

Leaning Juniper Wind Power II, LLC ("Leaning Juniper") has filed a request for amendment ("RFA") with the Oregon Department of Energy to repower the Leaning Juniper IIA Wind Power Facility, which is partially located on your property. Leaning Juniper provided you with a Landowner Coordination letter dated September 7, 2023, which was delivered to your address via the United States Postal Service on September 15, 2023. This letter is attached to this email for reference.

Please confirm receipt of this Landowner Coordination letter, acknowledging that you have read and understand the temporary impacts associated with repowering the Leaning Juniper IIA Wind Power Facility. Please let us know if you would like to meet to discuss the construction plans in more details.

Thank you for your continued partnership with the Leaning Juniper IIA Wind Facility.

Sincerely,
Mark Eilers

Mark Eilers 612.804.9209 mark.eilers@avangrid.com

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Attachment 7
Gilliam County Zoning Ordinance
Applicable Substantive Criteria

GCZO Applicable Substantive Criteria	Certificate Holder Response
GCZO 4.020, EFU EXCLUSIVE FARM USE	
D. CONDITIONAL USES PERMITTED. In the EFU Zone, the following uses and their accessory uses may be permitted, either by a Type I or a Type II Conditional Use Permit to satisfy the applicable criteria and procedures set forth in Article 7 – Conditional Uses. The appropriate review criteria are identified for each use.	No change. RFA3 proposes to repower the existing wind power facility, using the same turbine foundations and towers. The repower involves the continuation of the previously approved commercial utility facility under GCZO 4.020(D)(11) and the utility facility necessary for public services (e.g., the transmission gen-tie line) under GCZO 4.020(D)(16). All repower activities will occur within the same previously-approved micrositing corridor, including the same gen-tie alignment consistent with ORS 215.275. Therefore, for purposes of use review, the Council may rely on its prior findings for GCZO 4.020(D)(11) and (16).
11. Commercial utility facilities for the purpose of generating power for public use by sale, not including wind power generating facilities. A power generation facility not located on high-value farmland shall not preclude more than 20 acres from use as a commercial agricultural enterprise. Approval of a use pursuant to this subsection is subject to the review criteria of Section 4.020.H, and any other applicable criteria or provisions of law.	
16. Utility facilities necessary for public service subject to the provisions of ORS 215.275 and OAR 660-033-0130(16). No local legislative criteria shall be applied for consideration of establishing a utility facility necessary for public service. * * * b. ORS 215.275 Utility facilities necessary for public service; criteria; mitigating impact of facility: (1) A utility facility established under ORS 215.213(1)(d) or 215.2833(1)(d) is necessary for public service if the facility must be sited in an exclusive farm use zone in order to provide the service. (2) To demonstrate that a utility facility is necessary, an applicant for approval under ORS 215.213(1)(d) or 215.283(1)(d) must show that reasonable alternatives have been considered and that the facility must be sited in an exclusive farm use zone due to one or more of the following factors: (a) Technical and engineering feasibility; (b) The proposed facility is locational dependent. A utility facility is locational dependent if it must cross land in one or more areas zoned for exclusive farm use in order to achieve a reasonably direct route or to meet unique geographical needs that cannot be satisfied on other lands; (c) Lack of available urban and nonresource lands; (d) Availability of existing rights-of-way; (e) Public health and safety; and (f) Other requirements of State or Federal agencies. (3) Costs associated with any of the factors listed in Subsection (2) of this section may be considered, but cost alone may not be the only consideration in determining that a utility facility is necessary for public service. Land costs shall not be included when considering alternative locations for substantially similar utility facilities. The Land Conservation and Development Commission shall determine by rule how land costs may be considered when evaluating the siting of utility facilities that are not substantially similar. (4) The owner of a utility facility approved under ORS 215.213(1)(d) or 215.283(1)(d) shall be responsible for restoring, as nearly as possible, to its former condition any agricultural land and associated improvements that are damaged or otherwise disturbed by the siting, maintenance, repair or reconstruction of the facility. Nothing in this section shall prevent the owner of the utility facility from requiring a bond or other security from a contractor or otherwise imposing on a contractor the responsibility for restoration. (5) The governing body of the County or its designee shall impose clear and objective conditions on an application for utility facility siting under ORS 215.213(1)(d) or 215.283(1)(d) to mitigate and minimize the impacts of the proposed facility, if any, on surrounding lands devoted to farm use in order to prevent a significant change in accepted farm practices or a significant increase in the cost of farm practices on the surrounding farmlands. (6) The provisions of Subsections (2) to (5) of this section do not apply to interstate natural gas pipelines and associated facilities authorized by and subject to regulation by the Federal Energy Regulatory Commission.	
H. SPECIFIC REVIEW CRITERIA. In the EFU Zone, certain uses are subject to specific criteria, in addition to any other applicable criteria. The specific provisions of this subsection apply only when referenced within the list of uses included in Subsections 4.020.B, C and D.	

GCZO Applicable Substantive Criteria	Certificate Holder Response
1. The use will not force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; and	No change. For purposes of this analysis, surrounding lands are defined as the Exhibit K Land Use Analysis area that includes the site boundary plus 0.5 miles. The uses on surrounding lands include dryland wheat farming, a commercial waste management facility, and other ancillary uses. Accepted farming practices consist of crop cultivation. RFA3 proposes to repower the existing facility within the previously-approved micrositing corridors. To extent there are potential impacts to current crop production, such impacts would be temporary in nature as temporarily disturbed areas will be restored and returned to agricultural use. The soil management plan, erosion and sediment control plan, and the revegetation plan ensure that potential impacts to cultivated crop production will be minimized below significant. Given that such potential impacts will not rise to the level of significant, Certificate Holder also maintains that there will not a significant increase in cost of crop cultivation. For these reasons, the Council may find that GCZO 4.020(H)(1)-(2) are met.
2. The use will not significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.	
3. The proposed use will be compatible with vicinity uses, and satisfies all relevant requirements of this ordinance and the following general criteria: a. The parcel is suitable for the proposed use considering its size, shape, location, topography, existence of improvements and natural features; b. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zoning district; c. The proposed use is appropriate, considering the adequacy of public facilities and services existing or planned for the area affected by the use; and d. The use is or can be made compatible with existing uses and other allowable uses in the area.	No change. The existing facility previously was found to be compatible with vicinity uses and satisfied the general criteria in subparts (a) to (d). The facility, as amended, will continue to operate as previously approved. The turbine components are within the limits previously-approved by EFSC with the exception of the minimum blade tip clearance height. This change is not anticipated to result in any impact not previously evaluated.
J. PROPERTY DEVELOPMENT STANDARDS. In the EFU Zone, the following standards apply to residential and nonresidential development.	
1. Building Height. No limitations.	No change. RFA3 will comply.
2. Setbacks. a. The front and rear yard setbacks from the property line shall be 25 feet. b. The side yard setbacks from the property line shall be 25 feet.	No change. For purposes of applying this standard, the applicable property line has been interpreted to be the exterior property lines, not internal property lines within the leased boundary. As amended, the site certificate will require setbacks and this standard will continue to be met. Condition 39
GCZO 7.010 (A), AUTHORIZATION TO GRANT OR DENY CONDITIONAL USES	
A. GENERAL APPROVAL CRITERIA AND CONDITIONS 1. In addition to criteria, standards and conditions that may be set forth in a specific Zone, this Article, or other regulations applicable to a specific Conditional Use shall not be approved or permitted unless the following criteria are met. A Conditional Use may be approved on the Condition or Conditions that the applicant obtain and maintain compliance with other permits and approvals required. a. The proposed use shall be in compliance with the applicable Comprehensive Plan designation and policies. b. As applicable, sewage and/or solid waste disposal methods shall be provided in compliance with applicable local, State and Federal regulations. c. Proposal shall be found to be in compliance or conditioned upon compliance with applicable air and noise pollution standards. d. Required access shall be legally established, available, and adequate to serve the proposed use or provisions to provide such evident. e. Public services deemed necessary shall be available or provisions for such provided and no use shall be approved which is found to exceed the carrying capacities of affected public services unless there are provisions to bring such capacities up to the need. f. Proposal shall be in compliance with the applicable standards and limitations of the primary and combining zone as may be applicable. g. No use shall be approved which is found to have a significant adverse impact on resource- carrying capacities unless there are provisions for mitigating such impact.	No change. The existing facility previously was found to meet the general conditional use permit criteria in subparts (a) to (i). The existing site certificate conditions ensure that the facility, as amended, will continue to meet the general conditional use permit criteria. There has been no changes to the GCZO or the GCCP since the last amendment. Waste: Conditions 96 -100 Noise: Conditions 93-95 Permits: Condition 28

GCZO Applicable Substantive Criteria	Certificate Holder Response
h. No use shall be approved which is found to exceed the carrying capacities of affected public services and facilities. i. All required State and Federal permits or approvals have been obtained or will be as a condition of approval.	
2. In addition to specific standards and/or conditions set forth by the applicable zone, this article or some other applicable regulations, other conditions may be imposed that are determined necessary to avoid a detrimental impact, and to otherwise protect the best interests of the surrounding area and the County as a whole. Such conditions may include, but are not limited to, the following: a. Limiting the manner in which the use is conducted including restricting the time an activity may take place and restraints to minimize such environmental effects as noise, vibration, air pollution, glare and odor. b. Establishing a special setback or other open space or lot area or dimension. c. Limiting the height, size or location of a building or other structure. d. Designating the size, number, improvements, location and nature of vehicle access points and parking or loading areas. e. Limiting or otherwise designating the number, size, location, height, and lighting of signs and outdoor lighting. f. Requiring diking, screening, fencing, landscaping or another facility to protect adjacent or nearby property and designating standards for its installation and maintenance. g. Protecting and preserving existing trees, vegetation, water resources, wildlife habitat or other significant natural resources. h. Limiting the term of the Conditional Use Permit to a specific time. i. Requiring necessary on-site or off-site improvements and maintenance. j. Requiring the holder of a Conditional Use Permit to obtain review, renewal, or reapplication approval of the permit in the event that there is an increase in impact from the use on public facilities beyond that which was projected at the time of initial approval.	No change. The existing site certificate conditions ensure that the facility, as amended, will be operated in a way that does not result in detrimental impacts. Site Certificate Conditions: Setback Requirements: Condition 39 Noise: Condition 93, 94, 95. Buildings: Condition 91 Lighting/Glare: Condition 92 Vehicle Use/Parking: Conditions 37, 38, 85 Fencing: Conditions 81, 84 Wildlife and Habitat Protection: Conditions 82, 83, 84, 85
GCZO 7.020(A), WIND POWER GENERATION FACILITY	
Setback. Requirements are addressed in each individual zone.	
GCZO 7.020(Q), CONDITIONAL USES IN EXCLUSIVE FARM USE ZONES	
1. A Type I or Type II Conditional Use in an Exclusive Farm Use Zone may be approved only when the Planning Director or Hearings body finds that the use will not: a. Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; or b. Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.	No change. Certificate Holder demonstrates compliance with GCZO 7.020(Q)(1) under GCZO 4.020(H)(1)-(2).
2. An applicant for a conditional use in the Exclusive Farm Use Zone may demonstrate that the standards for approval set forth in Subsection A of this section will be satisfied through the imposition of conditions. Any condition so imposed shall be clear and objective.	No change. The existing site certificate contains conditions to ensure that the facility will not result significantly impact existing crop production activities on surrounding lands.
GCZO 7.020(T), WIND POWER GENERATION FACILITY	
(a)(1) A general description of the proposed Wind Power Generation Facility, a tentative construction schedule, the legal description of the property on which the facility will be located, and identification of the general area for all components of the proposed Wind Power Generation Facility, including a map showing the location of components.	No change. The proposed repower project is described in Sections 1 and 3 of this RFA3. Certificate Holder proposes to construct the repowering project in 2024-2025 and anticipates a 12-month construction period, including site restoration. Legal description of the property is attached, and Figures 1 and 2 in Attachment 1 of RFA3 provide maps illustrating the location of the project and the location of project elements.
(a)(2) Identification of potential conflicts, if any, with: (a) Accepted farming practices as defined in ORS 215.203(2)(c) on adjacent lands devoted to farm uses; (b) Other resource operations and practices on adjacent lands except for wind power generation facilities on such adjacent lands; and (c) The nature and extent of the proposed facility on the cost of accepted farm or forest practices on surrounding EFU land	No change. The repower project would not increase the size of the Facility or modify existing conditions associated with existing farming practices or other resource operations or practices on adjacent lands, including EFU lands.

GCZO Applicable Substantive Criteria	Certificate Holder Response
(a)(3) A Transportation Plan, with proposed recommendations, if any, reflecting the guidelines provided in the Gilliam County's Transportation System Plan (TSP) and the transportation impacts of the proposed Wind Power Generation Facility upon the local and regional road system during and after construction, after consultation with the Gilliam County Roadmaster. The plan will designate the size, number, location and nature of vehicle access points.	Applicable and complies. Certificate Holder will coordinate with Gilliam County Road Department for repower construction as described Section 5.14.
(a)(4) An avian impact monitoring plan. The avian monitoring plan shall be designed and administered by the applicant's wildlife professionals. For projects being sited by EFSC, compliance with EFSC's avian monitoring requirements will be deemed to meet this requirement. The plan shall include the formation of a technical oversight committee to review the plan, and consist of the following persons: (a) The landowners/farm tenants. (b) Facility owner/operator representative. (Chair) (c) Oregon Department of Fish and Wildlife representative, if the agency chooses to participate. (d) Two Gilliam County residents with no direct economic interest in the project and recommended by the applicants for appointment by the Gilliam County Board of Commissioners. (e) U.S. Fish and Wildlife representative, if the agency chooses to participate. (f) Gilliam County Planning Commission member. If there are no interested residents that are willing to serve on the TAC, this portion of the requirement may be waived. At the request of applicant, this committee requirement may be waived or discontinued by the County.	No change. Certificate Holder conducts wildlife monitoring and reporting as described in the Wildlife Monitoring and Mitigation Plan that is incorporated in the ESFC Final Order on Amendment 2 for Leaning Juniper Facility. In addition, Certificate Holder will implement a Repower Fatality Monitoring Plan.
(a)(5) A Covenant Not to Sue with regard to generally accepted farming practice shall be recorded with the County. Generally accepted farming practices shall be consistent with the definition of Farming Practices under ORS 30.930. The applicant shall covenant not to sue owners, operators, contractors, employees, or invitees of property zoned for farm use for generally accepted farming practices.	No change. Certificate Holder filed Covenant Not to Sue with regard to generally accepted farming practices on farmland adjacent to the construction area as required by ESFC Final Order on Amendment 1 for Leaning Juniper Facility.
(a)(6) A fire prevention and emergency response plan for all phases of the life of the facility. The plan shall address the major concern associated with the terrain, dry conditions, and limited access.	No change. RFA3 would comply with existing facility Fire Safety Plan and Emergency Response Plan (Condition 61).
(a)(7) An erosion control plan, developed in consultation with the Gilliam County Road Department. The plan should include the seeding of all road cuts or related bare road areas as a result of all construction, demolition and rehabilitation with an appropriate mix of native vegetation or vegetation suited to the area. This requirement will be satisfied if the applicant has an NPDES (National Pollution Discharge Elimination System) permit	No change. Certificate Holder will coordinate with Gilliam County Road Department as described Section 5.14 and implement erosion and control measures in accordance with site certificate conditions as described in Section 5.5.
(a)(8) A weed control plan addressing prevention and control of all Gilliam County identified noxious weeds directly resulting from the Wind Power Generation Facility during preparation, construction, operation and demolition/rehabilitation	No change. Certificate Holder proposes a Revegetation and Weed Control Repower Update Plan to address this standard.
(a)(9) A socioeconomic impact assessment of the Wind Power Generation Facility, evaluating such factors as, but not limited to, the project's effects upon the social, economic, public service, cultural, visual, and recreational aspects of affected communities. These effects can be viewed as either positive or negative. In order to maximize potential benefits and to mitigate outcomes that are viewed problematic, decision makers need information about the socioeconomic impacts that are likely to occur.	No change. The repower will not change negative effects social, economic, public service, cultural, visual, and recreational aspects of affected communities.
(a)(10) The requirements of OAR 660-033-0130(37) will be satisfied.	No change. During repower, Certificate Holder will implement the soil management plan, erosion control plan, updated revegetation plan, and the like to ensure that the repower activities do not result in adverse impacts to agricultural land and temporary impacts are properly restored.
(a)(11) Information pertaining to the impacts of the Wind Power Generation Facility on: (a) Wetlands; (b) Wildlife (all potential species of reasonable concern); (c) Wildlife habitat; (d) Criminal activity (vandalism, theft, trespass, etc.) and proposed actions, if any, to avoid, minimize or mitigate negative	No change. Potential impacts of the repower project on the resources have been assessed and are described in: Wetlands – Section 5.20 Wildlife and Wildlife Habitat - Section 5.9 No new impacts to resources not previously evaluated are anticipated to result from the repower project. The repower project will not alter how the Facility is managed with respect to preventing criminal activity.

GCZO Applicable Substantive Criteria	Certificate Holder Response
impacts.	
(a)(12) A dismantling and decommissioning plan of all components of the Wind Power Generation Facility, as provided in 6. of this section.	Applicable and complies. An updated retirement cost is presented in Section 5.8. The repower project will not change the Facility Decommissioning Plan.
(b) Gilliam County may impose clear and objective conditions in accordance with the County Comprehensive Plan, County Development Code and State law, which Gilliam County considers necessary to protect the best interests of the surrounding area, or Gilliam County as a whole	No change.
(c) Prior to commencement of any construction, all other necessary permits shall be obtained, e.g., Gilliam County Zoning Permit, road access and other permits from the Gilliam County Road Department, and from the Oregon Department of Transportation	No change. Certificate Holder has and will continue to coordinate with Gilliam County and identify and obtain all applicable permits.
(d) The following setback requirements and restrictions apply to the siting of a facility: The Wind Power Generation Facility shall be on property zoned EFU, and no portion of the facility shall be within 3,520 feet of properties zoned residential use or designated on the Comprehensive Plan as residential. (For clarification purposes of this section, EFU Zones are not considered zoned for residential use.) Towers shall be set back at a minimum 110% of maximum total turbine height from blade tip height, measured from the centerline of the turbine tower from: (1) Any State, County or Federal right-of-way or the nearest edge of a State, County, or Federal roadway, whichever is closer; (2) Any right of ingress or egress on the owner's property; (3) Any overhead utility lines; (4) All property lines; if adjacent landowner agrees in writing to a lesser distance, this requirement may be waived. (5) Any existing guy wire, anchor, or small wind energy tower on the property. (6) Any residence including those outside the project boundary. If a landowner agrees in writing to a lesser distance, this requirement may be waived. (7) A minimum of 150% of the maximum total turbine height from blade tip height, measured from the centerline of the turbine tower, from federal transmission line. If affected parties agree in writing to a lesser distance, this requirement may be waived.	No change. The site boundary and micrositing corridor will not change. The repower project will not change the location of major Facility components.
(e) Reasonable efforts shall be made to blend the wind facility's towers with the natural surroundings in order to minimize impacts upon open space and the natural landscape.	Applicable. Discussion of anticipated visual impacts is in Sections 5.7 and 5.9. The total tip heigh of repowered turbines will increase but will remain less than the approved heigh of 150 meters.
(f) Reasonable efforts shall be taken to protect and to preserve existing trees, vegetation, water resources, wildlife habitat or other significant natural resources	No change. Certificate Holder will implement measures in accordance with the Site Certificate to avoid impacts and preserve existing trees, vegetation and wildlife habitat. Wetlands on the site will be avoided in construction of the repower project.
(g) The turbine towers shall be designed and constructed to discourage bird nesting and wildlife attraction	No change. Turbine towers will not be modified in the proposed repowering project.
(h) The turbine towers shall be of a size and design to help reduce noise or other detrimental effects.	No change. Turbine towers will not be modified in the proposed repowering project.
(i) Private access roads shall be gated to protect the facility and property owners from illegal or unwarranted trespass, and illegal dumping and hunting.	No change. Access roads to the Facility will remain the same.
(j) Where practicable the electrical cable collector system shall be installed underground, at a minimum depth of 3 feet; elsewhere the cable collector system shall be installed to prevent adverse impacts on agriculture operations.	No change. Collection system replacement will be underground with a minimum depth of 3 feet.
(k) Required permanent maintenance/operations buildings shall be located off-site in one of Gilliam County's appropriately zoned areas, except that such a building may be constructed on-site if: (1) The building is designed and constructed generally consistent with the character of similar buildings used by commercial farmers or ranchers; and (2) The building will be removed or converted to farm use upon decommissioning of the Wind Power Generation Facility consistent with the provisions of this section.	No change. The repowered facility will use existing operations and maintenance buildings.

GCZO Applicable Substantive Criteria	Certificate Holder Response
(a) To the extent feasible, the County will accept information presented by an application for an EFSC proceeding in the form and on the scheduled required by EFSC	
GCZO 8.030, CLEAR VISION AREAS	
A. In all zones, a clear-vision area shall be maintained on the corners of all property at the intersection of two roads, a road and a driveway, or a road and a railroad. A clear-vision area shall contain no planting, fence, wall, structure, or temporary or permanent obstruction exceeding three and one- half feet (3½) in height, measured from the established road centerline grade, except for authorized road signs and cyclone or other open construction fences, which permit clear vision through the triangular area. Trees may be located in this area as long as all branches and foliage are removed to a height of eight (8) feet above the grade.	No change. Certificate Holder is not proposing changes to existing access roads or intersections with public rights-of-way.
B. A clear-vision area shall consist of a triangular area, two sides of which are lot lines intersecting at the corner of the lot, and the third side of which is a line across the corner of the lot joining the non- intersection ends of the other two sides. For purposes of this section, lot lines shall be considered to be the edge of the right-of-way.	
C. Any side of the triangular clear-vision area adjacent to a road, railroad, or access drive to a parking area shall be at least 30 feet. Any side of the clear-vision area adjacent to a residential driveway shall be at least 15 feet	
GCZO 8.040, OUTDOOR LIGHTING STANDARDS	
All outdoor lighting, including for accessory facilities and the lighting of commercial signs, shall comply with the following: A. Any outdoor light shall be shielded to illuminate downward.	No change. The repowered turbines will continue to use lighting as previously approved and compliant with FAA regulations.
B. The outdoor light source (bulb or element) shall not be visible at or beyond the property line.	
C. Outdoor lights shall not exceed the height limit of the zone where the light will be located.	
D. Structures over 50 feet in height shall not be lighted unless required to be lighted by the Federal Aviation Administration (F.A.A.). Structures over 50 feet in height, that are required to be lighted by F.A.A. shall be shielded to illuminate upward.	
GCZO 8.050, SIGN REGULATIONS	
The following regulations shall apply to any sign erected, moved, or altered after adoption of this Ordinance. Official traffic control signs and instruments of the state, county, or municipality are exempt from all provisions of this Section. A. All outdoor advertising signs shall be in compliance with the provision of ORS Chapter 377 when applicable.	No change. Certificate Holder is not proposing any new signage as part of RFA3.
B. No outdoor advertising sign permitted by ORS 377 shall be erected within 100 feet of a residential dwelling without written consent of the owner and/or occupant of said dwelling.	
C. No sign shall be placed in a manner that will interfere with visibility or effectiveness of any official traffic sign or signal, or with driver vision at any access point or intersection.	
D. No sign shall cause glare, distraction or other driving hazards, or by position, shape, color or other characteristic be similar to any traffic signal.	
E. Light from a sign shall be directed away from roads and adjacent parcels. The light source shall be shielded to illuminate downward and the light source shall not be visible beyond the property line or parcel on which the sign is located. No sign may incorporate a bare incandescent bulb with wattage exceeding 20 watts, except as a shielded indirect light source. Illuminated signs require an electrical permit.	
F. Sign structures may be placed within the required setbacks from property lines provided they comply with the vision clearance standards of Section 8.030, but may not be placed within or overhang a dedicated right-of-way unless a permit approving the location has been issued by the Oregon Department of Transportation or County Road Master.	
G. No sign may be situated in a manner that results in the blanketing of an existing sign.	

GCZO Applicable Substantive Criteria	Certificate Holder Response
GCZO 8.140, SITE PLAN REVIEW	
L. APPROVAL STANDARDS: The Site Plan Review Committee shall review the tentative site plan for compliance with the following standards: 1. All provisions of this zoning ordinance and other applicable regulations are compiled with. 2. Elements of the site plan are arranged so that: a. Traffic congestion is avoided. b. Pedestrian and vehicular safety and welfare are protected. c. Significant features and public amenities are preserved and maintained. d. Surface drainage systems are designed so as not to adversely affect neighboring properties, roads, or surface and subsurface water quality. e. Structures and facilities for storage, machinery and equipment, services (mail, refuse, utility wires, etc.), loading and parking and similar accessory areas shall be buffered or screened to minimize adverse impact on neighboring properties.	No change. The facility, as amended, will continue to operate as it has currently operated since 2011. Certificate Holder demonstrates above that RFA3 complies with the applicable substantive criteria of GCZO and GCZO 8.140(L)(1) is met. With respect to elements of the site plan itself, the facility, as amended, will remain within the previously-approved micrositing corridor, and repower activities will be subject to several plans to ensure that potential impacts are minimized, including a soil management plan, erosion and sediment control plan, revegetation plan, weed control plan, traffic management plan, and a wildfire management plan. These plans ensure that the standards in GCZO 8.140(L)(2) will continue to be met.

LEGAL DESCRIPTION OF THE LAND

Real property in the County of Gilliam and Morrow, State of Oregon:

PROJECT A:

Parcel 1A (Waste Management):

A tract of land being a portion of that property conveyed to Oregon Waste Systems, Inc, by Warranty Deed recorded December 21, 1992 as Document No. M-68-236, Deed Records of Gilliam County, Oregon, said tract being located in Sections 11, 12, 13, 14, 15, 21, 22, 23, 26, 27 and 28 Township 2 North, Range 20 East, and Sections 17, 18 and 19, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

Beginning at an iron pipe located at the southeast corner of said Section 13,
Thence along the southerly line of said Section 13, North 89°20'55" West a distance of 5,191.65 feet, more or less, to the southwest corner thereof, being also the northeast corner of said Section 23;
Thence along the easterly line of said Section 23, South 00°33'28" West a distance of 2,791.51 feet, more or less, to the northeast corner of the southeast ¼ of said Section 23;
Thence along the northerly line of the southeast ¼ of said Section 23, North 89°36'47" West a distance of 1,412.66 feet, more or less, to the northeast corner of the west ½ of the southeast ¼ of said Section 23;
Thence along the easterly line of the west ½ of the southeast ¼ of said Section 23, South 03°30'09" West a distance of 1,819.64 feet, more or less, to the southeast corner of the north ½ of the north ½ of the southwest ¼ of the southeast ¼ of said Section 23;
Thence along the southerly line of the north ½ of the north ½ of the southwest ¼ of the southeast ¼ of said Section 23, North 88°34'16" West a distance of 1,046.69 feet, more or less, to the southwest corner thereof, said point being also on the easterly line of the southwest ¼ of said Section 23;
Thence along the easterly line of the southwest ¼ of said Section 23, South 00°17'15" East a distance of 855.82 feet, more or less, to the northeast corner of the northwest ¼ of said Section 26;
Thence along the easterly line of the northwest ¼ of said Section 26, South 00°08'54" East a distance of 1,349.41 feet, more or less, to its intersection with the northerly boundary of that property conveyed to Herbert R. Holzapfel, Virginia W. Holzapfel, Robert S. Holzapfel, Judith L. Holzapfel, Jan H. Foglesong and Ivan E. Foglesong by Warranty Deed recorded February 2, 1994 as Document No. M-69-36, Deed Records of Gilliam County, Oregon;
Thence along the northerly boundary of that property described in said Document No. M-69-36, westerly a distance of 14,203 feet, more or less, to the northwest corner thereof, said point being on the westerly line of the south ½ of said Section 21;
Thence along the westerly line of the south ½ of said Section 21, North 00°01'43" East a distance of 1,948.03 feet, more or less, to the northwest corner thereof;
Thence along the northerly line of the south ½ of said Section 21 and the northerly line of the south ½ of said Section 22, North 89°44'00" East a distance of 7,701.40 feet, more or less, to a point from which the northeast corner of the south ½ of said Section 22 bears easterly 2,740 feet, said point being also the Point of Beginning of the "North-South" division line described in said Document No. M-68-236;
Thence along said division line North 00°17'45" East a distance of 4,202.64 feet, more or less to the center of a private road;
Thence along the center of said private road and said division line northeasterly a distance of 4,103 feet, more or less, to a point;

Thence continuing along said division line North 00°04'33" East a distance of 5,221.84 feet, more or less, to a point on the northerly line of the south ½ of said Section 11 and the terminus of said division line;
Thence along the northerly line of the south ½ of said Section 11, together with the northerly line of the south ½ of said Section 12, North 88°59'15" East a distance of 4,469.02 feet, more or less, to a point from which the Point of Beginning of this description bears South 32°00'24" East a distance of 9,273.29 feet;
Thence South 19°34'49" East a distance of 4,437.73 feet to a point;
Thence South 32°22'11" East a distance of 2,189.94 feet to a point;
Thence South 88°12'36" East a distance of 1,423.81 feet to a point;
Thence North 43°25'25" East a distance of 1,558.63 feet to a point;
Thence North 56°15'09" East a distance of 2,783.64 feet to a point;
Thence South 88°12'35" East a distance of 2,329.85 feet to a point;
Thence South 87°39'19" East a distance of 2,623.33 feet to a point;
Thence South 01°48'14" West a distance of 2,200.79 feet to a point;
Thence South 83°08'48" West a distance of 2,695.72 feet to a point;
Thence South 62°07'24" West a distance of 1,442.89 feet to a point;
Thence South 18°35'11" East a distance of 1,678.09 feet to a point;
Thence South 88°12'36" East a distance of 1,970.14 feet to a point on the easterly line of said Section 19 from which a brass cap at the northeast corner thereof bears North 00°02'59" East a distance of 546.97 feet;
Thence along the easterly line of said Section 19, South 00°02'59" West a distance of 4,731.92 to a brass cap located at the southeast corner thereof;
Thence along the southerly line of said Section 19, North 89°52'23" West a distance of 1,921.90 feet to a 5/8 inch iron rod;
Thence departing the southerly line of said Section 19, North 00°09'43" East a distance of 262.29 feet to a point;
Thence South 86°47'06" West a distance of 2,925.52 feet to a point;
Thence South 85°29'35" West a distance of 1114.76 feet to an iron pipe located at the southwest corner of said Section 19;
Thence along the westerly line of said Section 19, North 00°18'50" West a distance of 5,278.56 feet to the Point of Beginning.
EXCEPTING THEREFROM: That portion lying within the County Road Right-of-Way.

Parcel 1B (Waste Management):

A tract of land being a portion of that property conveyed to Oregon Waste Systems, Inc, by Warranty Deed recorded December 21, 1992 as Document No. M-68-236, Deed Records of Gilliam County, Oregon, said tract being located in Sections 10, 15, 22, 27, 28, and 33, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

Beginning at a brass disk located at the southwest corner of said Section 28;
Thence along the westerly line of said Section 28, North 00°43'27" West a distance of 395.05 feet to a point;
Thence departing the westerly line of said Section 28, South 89°35'28" East a distance of 4,770.06 feet to a point;
Thence North 01°47'22" East a distance of 28.44 feet to a point;
Thence North 88°46'35" East a distance of 435.87 feet to a point;
Thence North 00°06'18" East a distance of 4,480.72 feet to a point;
Thence South 88°12'37" East a distance of 1,896.81 feet to a point;
Thence North 01°47'25" East a distance of 8,542.55 feet to a point;
Thence North 88°12'34" West a distance of 2,118.73 feet to a point;
Thence North 00°20'26" East a distance of 4,597.83 feet, more or less, to a point on a line extending from the northeast corner of Section 8, Township 2 North, Range 21 East, to the southeast corner of the southwest ¼ of the southeast ¼ of said Section 10, said point bearing South 59°52'45" East a distance of 6,258.59 feet from the northeast corner of said Section 8;
Thence along said line South 59°52'45" East a distance of 4,370.26 feet, more or less, to the southeast corner of the southwest ¼ of the southeast ¼ of said Section 10;

Thence along the southerly line of the southeast ¼ of said Section 10, South 88°50'00" East a distance of 603.18 feet, more or less, to its intersection with the westerly line of the Union Pacific Railroad right-of-way;
Thence along said westerly right-of-way line South 00°17'38" East a distance of 2,570.73 feet, more or less, to a point of curvature;
Thence continuing along said westerly right-of-way line 697.11 feet through the arc of a circular curve to the right, said curve having a radius of 5,678.88 feet, a central angle of 7°02'00", a chord bearing of South 03°13'22" West and a chord length of 696.67 feet to a point of tangency;
Thence continuing along said westerly right-of-way line South 06°44'22" West a distance of 1,275.11 feet to a point of curvature;
Thence continuing along said westerly right-of-way line 531.26 feet through the arc of a circular curve to the left; said curve having a radius of 5,778.35 feet, a central angle of 5°16'04", a chord bearing of South 04°06'22" West and a chord length of 531.07 feet to a point of tangency;
Thence continuing along said westerly right-of-way line South 01°28'22" West a distance of 4,549.33 feet to a point of curvature;
Thence continuing along said westerly right-of-way line 12.31 feet through the arc of a circular curve to the right, said curve having a radius of 4,246.87 feet, a central angle of 0°09'58", a chord bearing of South 01°33'20" West and a chord length of 12.31 feet to a point;
Thence continuing along said westerly right-of-way line North 89°58'22" West a distance of 50.02 feet to a point of non-tangent curvature;
Thence continuing along said westerly right-of-way line 1,501.83 feet through the arc of a non-tangent circular curve to the right, said curve having a radius of 4,196.87 feet, a central angle of 20°30'11", a chord bearing of South 11°54'33" West and chord length of 1,493.83 feet to a point;
Thence continuing along said westerly right-of-way line South 89°58'22" East a distance of 53.92 feet to a point of non-tangent curvature;
Thence continuing along said westerly right-of-way line 1,328.13 feet through the arc of a non-tangent circular curve to the right, said curve having a radius of 4,246.87 feet, a central angle of 17°55'10", a chord bearing of South 30°50'47" West and a chord length of 1,322.81 feet to a point of tangency;
Thence continuing along said westerly right-of-way line South 39°48'22" West a distance of 1,397.72 feet, more or less, to its intersection with the northwesterly right-of-way line of Cedar Springs Road;
Thence along said northwesterly right-of-way line of Cedar Springs Road 173.90 feet through the arc of a non-tangent circular curve to the left, said curve having a radius of 1,328.13 feet, a central angle of 7°30'07", a chord bearing of South 56°28'43" West and a chord length of 173.77 feet to a point of tangency;
Thence continuing along said northwesterly right-of-way line South 45°23'07" West a distance of 218.21 feet to a point of curvature;
Thence continuing along said northwesterly right-of-way line 76.53 feet through the arc of circular curve to the left, said curve having a radius of 1318.13 feet, a central angle of 3°19'35", a chord bearing of South 41°36'52" West a distance of 76.52 feet to a point of tangency;
Thence continuing along said northwesterly right-of-way line South 39°57'05" West a distance of 1,415.98 feet to an angle point;
Thence continuing along said northwesterly right-of-way line South 45°39'43" West a distance of 100.49 feet to an angle point;
Thence continuing along said northwesterly right-of-way line South 39°57'05" West a distance of 2,191.71 feet to the most easterly corner of that property conveyed to Columbia Basin Electric Cooperative by warranty deed recorded August 26, 1998 as Document No. M-71-437, Deed Records of Gilliam County, Oregon;
Thence departing said northwesterly right-of-way line and along the northeasterly line of said Columbia Basin Electric Cooperative property North 50°02'55" West a distance of 250.00 feet to the most northerly corner thereof;
Thence along the northwesterly line of said Columbia Basin Electric Cooperative property South 39°57'05" West a distance of 250.00 feet to the most westerly corner thereof;
Thence along the southwesterly line of said Columbia Basin Electric Cooperative property South 50°02'55" East a distance of 250.00 feet to the most southerly corner thereof, said point being also on the northwesterly right-of-way line of Cedar Springs Road;

Thence continuing along said northwesterly right-of-way line South 39°57'05" West a distance of 496.91 feet to a point of curvature;
Thence continuing along said northwesterly right-of-way line 536.74 feet through the arc of a circular curve to the right, said curve having a radius of 1,151.12 feet, a central angle of 26°42'56", a chord bearing of South 53°18'33" West and a chord length of 531.89 feet to a point of tangency;
Thence continuing along said northwesterly right-of-way line South 66°40'01" West a distance of 1,298.65 feet to an angle point;
Thence continuing along said northwesterly right-of-way line South 69°31'46" West a distance of 200.24 feet to an angle point;
Thence continuing along said northwesterly right-of-way line South 66°40'01" West a distance of 305.85 feet to a point of curvature;
Thence continuing along said northwesterly right-of-way line 324.63 feet through the arc of a circular curve to the right, said curve having a radius of 2,226.63 feet, a central angle of 8°21'12", a chord bearing of South 70°50'37" West and a chord length of 324.34 feet to a point of tangency;
Thence continuing along said northwesterly right-of-way line South 75°46'13" West a distance of 995.69 feet to a point of curvature;
Thence continuing along said northwesterly right-of-way line 842.53 feet through the arc of a circular curve to the right, said curve having a radius of 2,236.65 feet, a central angle of 21°34'59", a chord bearing of South 89°56'11" West a distance of 837.56 feet to a point of tangency;
Thence continuing along said northwesterly right-of-way line North 79°16'20" West a distance of 82.77 feet, more or less, to its intersection with the westerly line of said Section 33;
Thence departing said northwesterly right-of-way line and along the westerly line of said Section 33, North 00°53'43" East a distance of 2,551.59 feet, more or less, to the Point of Beginning.

Parcel 2 (Krebs):

All that real property located in Gilliam County, Oregon, described as follows:

Township 2 North, Range 21 East, W.M.:

Section 2: All that portion lying West of Oregon State Highway No. 19
Section 3: All
Section 4: All
Section 9: N1/2, NE1/4SE1/4
Section 10: All that portion lying West of Oregon State Highway No. 19

EXCEPTING THEREFROM those portions of Section 9 and 10 lying South of the following described line: Beginning at the Northwest corner of the NW1/4NW1/4 of Section 9; running thence East on the section line between Sections 4 and 9, and 3 and 10, to the Northeast corner of the NW1/4NE1/4 of Section 10; thence South on the quarter section line to the Southeast corner of the SW1/4SE1/4 of said Section 10; thence in a Northwesterly direction on a straight line to the point of beginning.

Township 3 North, Range 21 East, W.M.:

Section 33: All

EXCEPTING THEREFROM that portion of Section 33 lying North of the following described line: Beginning at the Northwest corner of Section 33; running thence in a Southeasterly direction in a straight line to the Southeast corner of Section 33.

Parcel 3 (Tatone):

That certain real property situated in the North one-half of Section 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, more particularly described as follows:

Beginning at the East one-quarter corner of said Section 8, being the existing fence corner; Thence along the centerline of said Section 8, South 88°40'04" West, 1099.47 feet more or less to the Southeasterly corner of Parcel 2, Partition Plat No. 2006-3, being a duly recorded Plat in said Gilliam County; Thence along the Easterly boundary line of said Partition Plat No. 2006-3, North 23°46'37" West, 1844.50 feet; Thence North 53°20'46" East, 118.12 feet; Thence North 36°37'30" West, 794.96 feet to the northeasterly corner of said Parcel 2; Thence along the Northerly boundary line of said Partition Plat No. 2006-3, South 53°22'30" West, 800.03 feet more or less to the Northeasterly corner of Lot 1, Jones Canyon Subdivision, a duly recorded subdivision in said Gilliam County; Thence leaving said northerly boundary line of Partition Plat No. 2006-3, North 01°13'36" East, 783.94 feet more or less to the north line of said Section 8; Thence along said north line of said Section 8, South 88°46'24" East, 2766.28 feet more or less to the Northeast corner of said Section 8; Thence along the east line of said Section 8, South 01°47'35" East, 2619.44 feet more or less to the East one-quarter corner thereof and the POINT OF THE BEGINNING.

EXCEPTING THEREFROM that parcel described in Quitclaim Deed recorded July 14, 2010 as Instrument No. 2010-000256 to Tatone Farm, LLC, being more particularly described as follows:

Real property situated in the North one-half of Section 8, Township 2 North, Range 21 East, Willamette Meridian, County of Gilliam, State of Oregon, and more particularly described as follows:

Beginning at the most westerly corner of Lot 2 of Jones Canyon Subdivision a duly recorded subdivision in said Gilliam County; thence northwardly along the westerly line of said Parcel 3, North 01°13’39” East, 411.60 feet; thence leaving said line parallel with the northwesterly line of said Lot 2, North 53°22’33” East, 147.43 feet to a point that is lies North 36°37’27” West, 325.00 feet from the most northerly corner of said Lot 2; thence South 36°37’27” East, 325.00 feet to the most northerly corner of said Lot 2; thence southwestwardly along the northwesterly line of said Lot 2, South 53°22’33” West, 400.00 feet to the Point of Beginning.

Parcel 4 - WM-LJ2 Collector 1 (Revised 05-17-07):

A 120 foot wide strip of land situated in a portion of Section 9, 16, 21 and 22, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 74°55'14" East, 7523.61 feet to the POINT OF BEGINNING;
Thence South 01° 47' 25" West, 121.81 feet to a point;
Thence North 78° 18' 46" West, 430.93 feet to a point;
Thence North 59° 00' 09" West, 753.55 feet to a point;
Thence North 46° 08' 33" West, 902.69 feet to a point;
Thence South 62° 20' 32" West, 3522.49 feet to a point;
Thence North 66° 09' 53" West, 336.57 feet to a point;
Thence North 30° 27' 54" West, 1057.19 feet to a point;
Thence North 23° 06' 27" East, 1158.85 feet to a point;
Thence North 16° 29' 56" West, 1811.52 feet to a point;
Thence North 13° 29' 49" West, 830.55 feet to a point;
Thence North 02° 51' 00" East, 1534.83 feet to a point;
Thence North 32° 04' 30" West, 387.11 feet to a point;
Thence North 02° 40' 47" West, 796.64 feet to a point;
Thence North 23° 40' 48" West, 783.77 feet to a point;
Thence South 89° 12' 29" East, 131.84 feet to a point;
Thence South 23° 40' 48" East, 751.40 feet to a point;
Thence South 02° 40' 47" East, 787.41 feet to a point;
Thence South 32° 04' 30" East, 393.38 feet to a point;
Thence South 02° 51' 00" West, 1555.34 feet to a point;

Thence South 13° 29' 49" East, 810.17 feet to a point;
Thence South 16° 29' 56" East, 1851.59 feet to a point;
Thence South 23° 06' 27" West, 1141.48 feet to a point;
Thence South 30° 27' 54" East, 957.97 feet to a point;
Thence South 66° 09′ 53" East, 240.05 feet to a point;
Thence North 62° 20′ 32" East, 3551.03 feet to a point;
Thence South 46° 08′ 33" East, 948.35 feet to a point;
Thence South 59° 01′ 11" East, 764.12 feet to a point;
Thence South 78° 18′ 46" East, a distance of 370.55 feet to the POINT OF BEGINNING.

Parcel 5 - WM-LJ2 Collector 2 (Revised 05-17-07):

A 120 foot wide strip of land situated in a portion of Section 21 and 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 38° 55′ 14" East, 3578.84 feet to the POINT OF BEGINNING;
Thence South 22° 03′ 15" East, 128.18 feet to a point;
Thence South 47° 21′ 51" West, 1744.16 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 86° 27′ 51", having a radius of 1880.00 feet, and whose long chord bears South 04° 07′ 56" West, 2575.43 feet to a point;
Thence South 39° 05′ 60" East, 1528.51 feet to a point;
Thence North 64° 10′ 25" East, 970.29 feet to a point;
Thence South 17° 43′ 38" East, 121.21 feet to a point;
Thence South 64° 10′ 25" West, 1048.20 feet to a point;
Thence North 39° 05′ 60" West, 1623.50 feet to the beginning of a curve,
Thence along a curve to the right through an angle of 86° 27′ 50", having a radius of 2000.00 feet, and whose long chord bears North 04° 07′ 56" East, 2739.82 feet to a point;
Thence North 47° 21′ 51" East, a distance of 1789.22 feet to the POINT OF BEGINNING.

Parcel 6 - WM-LJ2 Collector 3 (Revised 04-16-08):

A 120 foot wide strip of land situated in a portion of Section 22 and 27, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20 and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 52° 57′ 13" East, 8966.83 feet to the POINT OF BEGINNING;
Thence South 01° 47′ 25" West, 133.00 feet to a point on a line;
Thence North 62° 39′ 57" West, 1015.80 feet to a point on a line;
Thence South 40° 58′ 36" West, 873.52 feet to a point on a line;
Thence North 88° 12′ 37" West, 154.82 feet to a point on a line;
Thence North 40° 58′ 36" East, 1065.70 feet to a point on a line;
Thence South 62° 39′ 57" East, 1052.81 feet to the POINT OF BEGINNING.

Parcel 7 - WM-LJ2 Collector 4 (Revised 05-17-07):

A 60 foot wide strip of land situated in a portion of Section 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;

Thence South 30° 53′ 54" East, 10277.80 feet to the POINT OF BEGINNING;
Thence, South 00° 06′ 18" West, 77.21 feet to a point;
Thence, South 51° 05′ 60" West, 2204.82 feet to a point;
Thence, North 89° 35′ 28" West, 94.71 feet to a point;
Thence North 51° 05′ 60" East, a distance of 2326.69 feet to the POINT OF BEGINNING.

Parcel 8 - WM-LJ2 Collector 5 (Revised 05-17-07):

A 120 foot wide strip of land situated in a portion of Section 8, 9, 10, 15, and 16, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 8° 42′ 52" West, 8015.41 feet to the POINT OF BEGINNING;
Thence North 88° 40′ 04" East, 140.38 feet to a point;
Thence South 32° 35′ 35" East, 1730.35 feet to a point;
Thence South 44° 33′ 04" East, 781.65 feet to the beginning of a curve;
Thence along a curve to the left through 30° 43′ 42", having a radius of 400.00 feet, and whose long chord bears South 59° 54′ 55" East, 211.96 feet to the beginning curve;
Thence along a curve to the right through an angle of 48° 19′ 56", having a radius of 520.00 feet, and whose long chord bears South 51° 06′ 48" East, 425.76 feet to a point;
Thence South 89° 12′ 29" East, 1866.70 feet to a point;
Thence North 87° 26′ 31" East, 1249.40 feet to a point;
Thence South 87° 53′ 21" East, 982.92 feet to a point;
Thence North 76° 26′ 39" East, 301.15 feet to a point;
Thence South 00° 20′ 26" West, 118.32 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 04° 47′ 45", having a radius of 1470.00 feet, and whose long chord bears South 74° 02′ 47" West, 123.01 feet to a point;
Thence South 76° 26′ 39" West, 268.14 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 30° 54′ 01", having a radius of 230.00 feet, and whose long chord bears South 60° 59′ 39" West, 122.54 feet to a point;
Thence South 45° 32′ 38" West, 91.50 feet to the beginning of a curve;
Thence along a curve to the right through 111° 10′ 42", having a radius of 100.00 feet, and whose long chord bears North 78° 52′ 01" West, 165.00 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 64° 36′ 41", having a radius of 230.00 feet, and whose long chord bears North 55° 35′ 00" West, 245.84 feet to a point;
Thence North 87° 53′ 21" West, 357.96 feet to a point;
Thence South 87° 26′ 31" West, 540.76 feet to a point;
Thence South 16° 49′ 09" East, 1912.33 feet to a point;
Thence North 85° 17′ 09" East, 1254.35 feet to a point;
Thence South 00° 20′ 26" West, 120.47 feet to a point;
Thence South 85° 17′ 09" West, 1340.73 feet to a point;
Thence North 16° 49′ 09" West, 2039.82 feet to a point;
Thence South 87° 26′ 31" West, 583.45 feet to a point;
Thence North 89° 12′ 29" West, 1946.51 feet to a point;
Thence North 23° 40′ 48" West, 47.98 feet to the beginning of a curve;
Thence along a curve to the left through 53° 53′ 06", having a radius of 400.00 feet, and whose long chord bears North 50° 37′ 21" West, 362.48 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 33° 00′ 49", having a radius of 400.00 feet, and whose long chord bears North 61° 03′ 29" West, 227.30 feet to a point;
Thence North 44° 33′ 04" West, 828.44 feet to a point;
Thence North 32° 35′ 35" West, a distance of 1815.76 feet to the POINT OF BEGINNING.

Parcel 9 - WM-LJ2 Collector 6 (Revised 05-17-07):

A varied width strip of land situated in a portion of Section 8 and 17, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land

conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 46° 54′ 07" West, 6372.93 feet to the POINT OF BEGINNING;
Thence North 45° 48′ 24" East, 716.67 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 21° 24′ 04", having a radius of 2700.00 feet, and whose long chord bears North 56° 30′ 27" East, 1002.66 feet to a point;
Thence North 30° 27′ 57" East, 579.97 feet to a point;
Thence North 41° 28′ 34" East, 2613.48 feet to a point;
Thence South 25° 17′ 35" East, 281.03 feet to a point;
Thence South 57° 24′ 25" West, 503.68 feet to a point;
Thence South 41° 28′ 34" West, 2006.72 feet to a point;
Thence South 30° 27′ 57" West, 608.76 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 22° 16′ 38", having a radius of 2580.00 feet, and whose long chord bears South 56° 56′ 44" West, 996.84 feet to a point;
Thence South 45° 48′ 24" West, 602.94 feet to a point;
Thence North 87° 39′ 19" West, a distance of 165.33 feet to the POINT OF BEGINNING.

Parcel 10 - WM-LJ2 Collector 7 (Revised 05-17-07):

A 120 foot wide strip of land situated in a portion of Section 18 and 19, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 84° 27′ 20" West, 5438.30 feet to the POINT OF BEGINNING;
Thence North 88° 12′ 36" West, 120.06 feet to a point;
Thence North 00° 02′ 59" East, 361.78 feet to a point;
Thence North 89° 51′ 42" West, 379.99 feet to a point;
Thence North 18° 20′ 43" West, 504.81 feet to a point;
Thence North 08° 36′ 39" West, 870.51 feet to a point;
Thence North 17° 49′ 50" West, 345.00 feet to a point;
Thence North 30° 04′ 58" West, 349.07 feet to a point;
Thence North 83° 08′ 48" East, 130.59 feet to a point;
Thence South 30° 04′ 58" East, 310.45 feet to a point;
Thence South 17° 49′ 50" East, 367.56 feet to a point;
Thence South 08° 36′ 39" East, 869.97 feet to a point;
Thence South 18° 20′ 43" East, 408.18 feet to a point;
Thence South 89° 51′ 42" East, 413.39 feet to a point;
Thence South 00° 02′ 59" West, a distance of 485.24 feet to the POINT OF BEGINNING.

Parcel 11 - WM-LJ2 Collector 8 (Revised 04-16-08):

A 120 foot wide strip of land situated in a portion of Section 13, Township 2 North, Range 20 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 79° 34′ 27" West, 12034.04 feet to the POINT OF BEGINNING;
Thence North 77° 45′ 18" West, 241.33 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 25° 26′ 14", having a radius of 380.00 feet, and whose long chord bears South 89° 31′ 35" West, 167.32 feet to a point;
Thence South 76° 48′ 28" West, 250.44 feet to the beginning of a curve;

Thence along a curve to the left through an angle of 08° 46′ 10", having a radius of 380.00 feet, and whose long chord bears South 72° 25′ 23" West, 58.10 feet to a point;.
Thence South 68° 02′ 18" West, 109.46 feet to the beginning of curve;
Thence along a curve to the right through an angle of 24° 42′ 20", having a radius of 270.00 feet, and whose long chord bears South 80° 23′ 28" West, 115.52 feet to a point;
Thence North 87° 15′ 21" West, 239.43 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 06° 45′ 19", having a radius of 2970.00 feet, and whose long chord bears North 83° 52′ 41" West, 349.97 feet to a point;
Thence North 80° 30′ 02" West, 485.73 feet to a point;
Thence North 32° 22′ 11" West, 161.15 feet to a point;
Thence South 80° 30′ 02" East, 593.29 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 06° 45′ 19", having a radius of 2850.00 feet, and whose long chord bears South 83° 52′ 41" East, 335.83 feet to a point;
Thence South 87° 15′ 21" East, 239.43 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 24° 42′ 20", having a radius of 150.00 feet, and whose long chord bears North 80° 23′ 28" East, 64.18 feet to a point;
Thence North 68° 02′ 18" East, 109.46 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 08° 46′ 10", having a radius of 500.00 feet, and whose long chord bears North 72° 25′ 23" East, 76.45 feet to a point;
Thence North 76° 48′ 28" East, 250.44 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 25° 26′ 14", having a radius of 500.00 feet, and whose long chord bears North 89° 31′ 35" East, 220.16 feet to a point;
Thence South 77° 45′ 18" East, 313.94 feet to a point;
Thence South 43° 25′ 25" West, a distance of 140.26 feet to the POINT OF BEGINNING.

Parcel 12 - WM-LJw Collector 9 (Revised 04-16-08):

A 120 foot wide strip of land situated in a portion of Section 9, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 03° 25′ 22" East, 10181.33 feet to the POINT OF BEGINNING;
Thence South 52° 59′ 53" West, 568.20 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 24° 51′ 48", having a radius of 560.00 feet, and whose long chord bears South 65° 25′ 47" West, 241.11 feet to a point;
Thence North 01° 47′ 35" West, 122.54 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 21° 59′ 47", having a radius of 440.00 feet, and whose long chord bears North 63° 59′ 47" East, 167.89 feet to a point;
Thence North 52° 59′ 53" East, 517.56 feet to a point;
Thence South 59° 52′ 45" East, a distance of 130.25 feet to the POINT OF BEGINNING.

Parcel 13 - WM-LJ2 Collector 10:

A 120 foot wide strip of land situated in a portion of Section 28, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 41° 41′ 54" East, 7890.81 feet to the POINT OF BEGINNING;
Thence, South 00° 06′ 18" West, 138.32 feet to a point;
Thence, South 60° 16′ 44" West, 1838.51 feet to a point;
Thence, South 64° 10′ 25" West, 983.61 feet to a point;
Thence, North 17° 43′ 38" West, 84.94 feet to a point;
Thence, North 00° 26′ 50" East, 40.05 feet to a point;

Thence, North 64° 10′ 25" East, 949.83 feet to a point;
Thence North 60° 16′ 44" East, a distance of 1903.22 feet to the POINT OF BEGINNING.

Parcel 14 - WM-LJ2 Collector 11:

A 120 foot wide strip of land situated in a portion of Sections and 21 and 28, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 40° 28′ 32" East, 3256.76 feet to the POINT OF BEGINNING;
Thence South 66° 09′ 53" East, 172.40 feet to a point;
Thence South 22° 03′ 15" East, 1647.13 feet to a point;
Thence South 00° 45′ 17" West, 1078.90 feet to a point;
Thence South 14° 01′ 40" West, 381.15 feet to a point;
Thence South 04° 25′ 16" West, 417.26 feet to a point;
Thence South 00° 26′ 50" West, 1350.94 feet to a point;
Thence South 17° 43′ 38" East, 614.90 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 44° 03′ 56", having a radius of 620.00 feet, and whose long chord bears South 04° 18′ 20" West, 465.17 feet to a point;
Thence South 26° 20′ 18" West, 729.17 feet to a point;
Thence South 28° 45′ 43" East, 238.32 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 68° 21′ 35", having a radius of 180.00 feet, and whose long chord bears South 62° 56′ 31" East, 202.25 feet to a point;
Thence North 82° 52′ 41" East, 586.14 feet to a point;
Thence South 23° 16′ 30" East, 1095.32 feet to a point;
Thence North 89° 35′ 28" West, 131.04 feet to a point;
Thence North 23° 16′ 30" West, 952.50 feet to a point;
Thence South 82° 52′ 41" West, 495.96 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 68° 21′ 35", having a radius of 300.00 feet, and whose long chord bears North 62° 56′ 31" West, 337.08 feet to a point;
Thence North 28° 45′ 43" West, 238.32 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 55° 06′ 01", having a radius of 120.00 feet, and whose long chord bears North 01° 12′ 43" West, 111.01 feet to a point;
Thence North 26° 20′ 18" East, 729.17 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 44° 03′ 55", having a radius of 500.00 feet, and whose long chord bears North 04° 18′ 20" East, 375.14 feet to a point;
Thence North 17° 43′ 38" West, 634.09 feet to a point;
Thence North 00° 26′ 50" East, 1374.30 feet to a point;
Thence North 04° 25′ 16" East, 431.51 feet to a point;
Thence North 14° 01′ 40" East, 377.27 feet to a point;
Thence North 00° 45′ 17" East, 1040.74 feet to a point;
Thence North 22° 03′ 15" West, a distance of 1746.71 feet to the POINT OF BEGINNING.

Parcel 15 - WM-LJ2 Road 1 (Revised 04-16-08):

A 60 foot wide strip of land situated in a portion of Section 8, 9, 10, 16 and 17, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 44° 24' 31" East, 7587.94 feet to the True Point of Beginning;
Thence along a curve to the right through an angle of 04° 02' 15", having a radius of 1530.00 feet, and whose long chord bears South 74° 25' 32" West, 107.79 feet to a point;
Thence South 76° 26' 39" West, 268.14 feet to the beginning of a curve;

Thence along a curve to the left through an angle of 30° 54' 01", having a radius of 170.00 feet, and whose long chord bears South 60° 59' 39" West, 90.58 feet to a point;
Thence South 45° 32' 38" West, 91.50 feet to a curve;
Thence along a curve to the right through an angle of 106° 12' 08", having a radius of 160.00 feet, and whose long chord bears North 81° 21' 18" West, 255.90 feet to a point;
Thence North 28° 15' 14" West, 29.35 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 59° 38' 07", having a radius of 170.00 feet, and whose long chord bears North 58° 04' 18" West, 169.06 feet to a point;
Thence North 87° 53' 21" West, 531.49 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 07° 37' 31", having a radius of 1470.00 feet, and whose long chord bears South 88° 17' 53" West, 195.49 feet to a point;
Thence South 84° 29′ 07" West, 297.13 feet to a curve;
Thence along a curve to the right through an angle of 02° 57′ 23", having a radius of 1530.00 feet, and whose long chord bears South 85° 57′ 49" West, 78.94 feet to a point;
Thence South 87° 26′ 31" West, 454.63 feet to a curve;
Thence along a curve to the right through an angle of 03° 20′ 59", having a radius of 1530.00 feet, and whose long chord bears South 89° 07′ 00" West, 89.44 feet to a point;
Thence North 89° 12′ 29" West, 2006.17 feet to a point;
Thence North 24° 16′ 21" West, 140.28 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 71° 06′ 12", having a radius of 170.00 feet, and whose long chord bears North 59° 49′ 27" West, 197.69 feet to a point;
Thence South 84° 37′ 27" West, 143.12 feet to a curve;
Thence along a curve to the right through an angle of 11° 33′ 35", having a radius of 1530.00 feet, and whose long chord bears North 89° 35′ 46" West, 308.16 feet to a point;
Thence North 83° 48′ 58" West, 319.37 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 04° 54′ 05", having a radius of 1970.00 feet, and whose long chord bears North 86° 16′ 00" West, 168.47 feet to a point;
Thence North 88° 43′ 03" West, 1206.53 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 01° 56′ 06", having a radius of 4970.00 feet, and whose long chord bears North 89° 41′ 07" West, 167.86 feet to a point;
Thence South 89° 20′ 50" West, 605.27 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 15° 06′ 13", having a radius of 1470.00 feet, and whose long chord bears South 81° 47′ 43" West, 386.39 feet to a point;
Thence South 74° 14′ 37" West, 220.44 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 30° 24′ 45", having a radius of 2720.00 feet, and whose long chord bears South 59° 02′ 14" West, 1426.89 feet to a point;
Thence South 43° 49′ 51" West, 356.44 feet to a curve;
Thence along a curve to the right through an angle of 02° 56′ 58", having a radius of 5030.00 feet, and whose long chord bears South 45° 18′ 20" West, 258.91 feet to a point;
Thence North 87° 39′ 19" West, 84.52 feet to a curve;
Thence along a curve to the left through an angle of 03° 37′ 54", having a radius of 4970.00 feet, and whose long chord bears North 45° 38′ 48" East, 314.97 feet to a point;
Thence North 43° 49′ 51" East, 356.44 feet to a curve;
Thence along a curve to the right through an angle of 30° 24′ 45", having a radius of 2780.00 feet, and whose long chord bears North 59° 02′ 14" East, 1458.37 feet to a point;
Thence North 74° 14′ 37" East, 220.44 feet to a curve;
Thence along a curve to the right through an angle of 15° 06′ 13", having a radius of 1530.00 feet, and whose long chord bears North 81° 47′ 43" East, 402.16 feet to a point;
Thence North 89° 20′ 50" East, 605.27 feet to a curve;
Thence along a curve to the right through an angle of 01° 56′ 06", having a radius of 5030.00 feet, and whose long chord bears South 89° 41′ 07" East, 169.88 feet to a point;
Thence South 88° 43′ 03" East, 1206.53 feet to a curve;
Thence along a curve to the right through an angle of 04° 54′ 05", having a radius of 2030.00 feet, and whose long chord bears South 86° 16′ 00" East, 173.61 feet to a point;
Thence South 83° 48′ 58" East, 319.37 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 11° 33′ 35", having a radius of 1470.00 feet, and whose long chord bears South 89° 35′ 46" East, 296.08 feet to a point;
Thence North 84° 37′ 27" East, 143.12 feet to a curve;
Thence along a curve to the right through an angle of 71° 06′ 12", having a radius of 230.00

feet, and whose long chord bears South 59° 49′ 27" East, 267.46 feet to a point;
Thence South 24° 16′ 21" East, 102.11 feet to a point;
Thence South 89° 12′ 29" East, 1967.99 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 03° 20′ 59", having a radius of 1470.00 feet, and whose long chord bears North 89° 07′ 00" East, 85.93 feet to a point;
Thence North 87° 26′ 31" East, 454.63 feet to a curve;
Thence along a curve to the left through an angle of 02° 57′ 23", having a radius of 1470.00 feet, and whose long chord bears North 85° 57′ 49" East, 75.85 feet to a point;
Thence North 84° 29′ 07" East, 297.13 feet to a curve;
Thence along a curve to the right through an angle of 07° 37′ 31", having a radius of 1530.00 feet, and whose long chord bears North 88° 17′ 53" East, 203.47 feet to a point;
Thence South 87° 53′ 21" East, 531.49 feet to a curve;
Thence along a curve to the right through an angle of 59° 38′ 07", having a radius of 230.00 feet, and whose long chord bears South 58° 04′ 18" East, 228.73 feet to a point;
Thence South 28° 15′ 14" East, 29.35 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 106° 12′ 08", having a radius of 100.00 feet, and whose long chord bears South 81° 21′ 18" East, 159.94 feet to a point;
Thence North 45° 32′ 38" East, 91.50 feet to a curve;
Thence along a curve to the right through an angle of 30° 54′ 01", having a radius of 230.00 feet, and whose long chord bears North 60° 59′ 39" East, 122.54 feet to a point;
Thence North 76° 26′ 39" East, 268.14 feet to a curve;
Thence along a curve to the left through an angle of 04° 47′ 45", having a radius of 1470.00 feet, and whose long chord bears North 74° 02′ 47" East, 123.01 feet to a point;
Thence South 00° 20′ 26" West a distance of 63.20 feet to the True Point of Beginning.

Parcel 16 - WM-LJ2 Road 2 (Revised 05-17-07):

A 60 foot wide strip of land situated in a portion of Section 9, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 03° 24′ 31" East, 10100.15 feet to the southeasterly Right of Way of a county road, Rattlesnake Road, also being the True Point of Beginning;
Thence North 51° 54′ 56" East, 60.03 feet along said Right of Way to a point;
Thence South 40° 02′ 02" East, 463.96 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 21° 56′ 56", having a radius of 270.00 feet, and whose long chord bears South 51° 00′ 31" East, 102.80 feet to a point;
Thence South 61° 58′ 59" East, 186.35 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 33° 18′ 08", having a radius of 380.00 feet, and whose long chord bears South 45° 19′ 55" East, 217.77 feet to a point;
Thence South 28° 40′ 50" East, 639.76 feet to a point;
Thence South 34° 20′ 50" East, 363.16 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 04° 04′ 20", having a radius of 1030.00 feet, and whose long chord bears South 32° 18′ 40" East, 73.19 feet to a point;
Thence South 30° 16′ 30" East, 875.17 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 06° 38′ 19", having a radius of 970.00 feet, and whose long chord bears South 33° 35′ 40" East, 112.33 feet to a point;
Thence South 36° 54′ 50" East, 1401.63 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 24° 33′ 26", having a radius of 230.00 feet, and whose long chord bears South 24° 38′ 07" East, 97.83 feet to a point;
Thence South 12° 21′ 24" East, 495.21 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 10° 52′ 21", having a radius of 320.00 feet, and whose long chord bears South 17° 47′ 34" East, 60.63 feet to a point;
Thence South 23° 13′ 45" East, 534.58 feet to a point;
Thence South 84° 29′ 07" West, 62.99 feet to point "B";
Thence North 23° 13′ 45" West, 515.41 feet to the beginning of a curve;

Thence along a curve to the right through an angle of 10° 52′ 21", having a radius of 380.00 feet, and whose long chord bears North 17° 47′ 34" West, 72.00 feet to a point;
Thence North 12° 21′ 24" West, 495.21 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 24° 33′ 26", having a radius of 170.00 feet, and whose long chord bears North 24° 38′ 07" West, 72.31 feet to a point;
Thence North 36° 54′ 50" West, 1401.63 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 06° 38′ 19", having a radius of 1030.00 feet, and whose long chord bears North 33° 35′ 40" West, 119.28 feet to a point;
Thence North 30° 16′ 30" West, 875.17 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 04° 04′ 20", having a radius of 970.00 feet, and whose long chord bears North 32° 18′ 40" West, 68.93 feet to a point;
Thence North 34° 20′ 50" West, 343.38 feet to a point;
Thence South 74° 59′ 22" West, 21.71 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 08° 39′ 35", having a radius of 1030.00 feet, and whose long chord bears South 79° 19′ 10" West, 155.53 feet to a point;
Thence South 83° 38′ 58" West, 330.59 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 46° 19′ 06", having a radius of 430.00 feet, and whose long chord bears North 73° 11′ 29" West, 338.23 feet to a point;
Thence North 50° 01′ 56" West, 526.12 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 04° 33′ 45", having a radius of 1030.00 feet, and whose long chord bears North 47° 45′ 04" West, 82.00 feet to a point;
Thence North 45° 28′ 11" West, 542.87 feet to a point;
Thence North 01° 47′ 35" West, 11.84 feet to a point on the southeasterly right of Way of a County Road, Rattlesnake Road;
Thence along said Right of Way North 81° 37′ 42" East, 2.92 feet to a point;
Thence continuing along said Right of Way North 76° 03′ 27" East, 58.07 feet to a point;
Thence South 45° 28′ 11" East, 519.31 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 04° 33′ 45", having a radius of 970.00 feet, and whose long chord bears South 47° 45′ 04" East, 77.22 feet to a point;
Thence South 50° 01′ 56" East, 526.12 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 46° 19′ 06", having a radius of 370.00 feet, and whose long chord bears South 73° 11′ 29" East, 291.03 feet to a point;
Thence North 83° 38′ 58" East, 330.59 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 08° 39′ 35", having a radius of 970.00 feet, and whose long chord bears North 79° 19′ 10" East, 146.47 feet to a point;
Thence North 74° 59′ 22" East, 4.80 feet to a point;
Thence North 28° 40′ 50" West, 603.07 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 33° 18′ 08", having a radius of 320.00 feet, and whose long chord bears North 45° 19′ 55" West, 183.39 feet to a point;
Thence North 61° 58′ 59" West, 186.35 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 21° 56′ 56", having a radius of 330.00 feet, and whose long chord bears North 51° 00′ 31" West, 125.65 feet to a point;
Thence North 40° 02′ 02" West a distance of 466.00 feet to the True Point of Beginning.

<u>Parcel 17 - WM-LJ2 Road 3 (Revised 04-16-08):</u>

A 60 foot wide strip of land situated in a portion of Section 15 and 22, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 88° 17′ 43" East, 7335.79 feet to the True Point of Beginning;
Thence South 01° 47′ 25" West, 61.52 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 66° 36′ 42", having a radius of 125.00 feet, and whose long chord bears South 43° 04′ 14" West, 137.28 feet to a point;
Thence South 09° 45′ 52" West, 630.92 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 07° 36′ 24", having a radius of 1030.00

feet, and whose long chord bears South 13° 34′ 05" West, 136.65 feet to a point;
Thence South 17° 22′ 17" West, 213.52 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 06° 43′ 53", having a radius of 1030.00 feet, and whose long chord bears South 20° 44′ 14" West, 120.94 feet to a point;
Thence South 24° 06′ 11" West, 286.41 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 61° 56′ 55", having a radius of 270.00 feet, and whose long chord bears South 06° 52′ 17" East, 277.91 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 28° 19′ 45", having a radius of 330.00 feet, and whose long chord bears South 23° 40′ 52" East, 161.51 feet to a point;
Thence South 09° 30′ 59" East, 142.12 feet to a point;
Thence South 78° 18′ 46" East, 276.28 feet to a point;
Thence South 01° 47′ 25" West, 60.91 feet to a point;
Thence North 78° 18′ 46" West, 327.83 feet to a point;
Thence North 09° 30′ 59" West, 152.67 feet to a point;
Thence North 09° 30′ 59" West, 30.53 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 28° 19′ 45", having a radius of 270.00 feet, and whose long chord bears North 23° 40′ 52" West, 132.14 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 03° 05′ 53", having a radius of 330.00 feet, and whose long chord bears North 36° 17′ 48" West, 17.84 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 10° 39′ 39", having a radius of 330.00 feet, and whose long chord bears North 29° 25′ 01" West, 61.31 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 48° 11′ 22", having a radius of 330.00 feet, and whose long chord bears North 00° 00′ 30" East, 269.44 feet to a point;
Thence North 24° 06′ 11" East, 286.41 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 06° 43′ 53", having a radius of 970.00 feet, and whose long chord bears North 20° 44′ 14" East, 113.90 feet to a point;
Thence North 17° 22′ 17" East, 213.52 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 07° 36′ 24", having a radius of 970.00 feet, and whose long chord bears North 13° 34′ 05" East, 128.69 feet to a point;
Thence North 09° 45′ 52" East, 638.28 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 72° 41′ 18", having a radius of 175.00 feet, and whose long chord bears North 46° 06′ 32" East, 207.42 feet to a point;
Thence North 82° 27′ 11" East a distance of 4.11 feet to the True Point of Beginning.

Parcel 18 - WM-LJ2 Road 4 (Revised 05-17-07):

A 60 foot wide strip of land situated in a portion of Section 22 and 27, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 43° 55′ 45" East, 7946.41 feet to the True Point of Beginning;
Thence North 88° 12′ 37" West, 92.22 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 12° 47′ 04", having a radius of 770.00 feet, and whose long chord bears North 47° 22′ 08" East, 171.46 feet to a point;
Thence North 40° 58′ 36" East, 1006.96 feet to a point;
Thence South 62° 39′ 57" East, 1071.32 feet to a point;
Thence South 01° 47′ 25" West, 66.50 feet to a point;
Thence North 62° 39′ 57" West, 1052.81 feet to a point;
Thence South 40° 58′ 36" West, 959.78 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 07° 45′ 48", having a radius of 830.00 feet, and whose long chord bears South 44° 51′ 30" West, 112.38 feet to the True Point of Beginning.

Parcel 19 - WM-LJ2 Road 5 (Revised 05-17-07):

A 60 foot wide strip of land situated in a portion of Section 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon, more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 42° 02' 02" East, 7839.61 feet to the True Point of Beginning;
Thence South 00° 06' 18" West, 68.87 feet to a point;
Thence South 60° 42' 35" West, 1224.69 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 01° 47' 09", having a radius of 4970.00 feet, and whose long chord bears South 59° 49' 00" West, 154.91 feet to a point;
Thence South 58° 55' 26" West, 336.63 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 05° 14' 59", having a radius of 3030.00 feet, and whose long chord bears South 61° 32' 55" West, 277.53 feet to a point;
Thence South 64° 10' 25" West, 722.40 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 11° 26' 23", having a radius of 630.00 feet, and whose long chord bears South 69° 53' 37" West, 125.58 feet to a point;
Thence South 75° 36' 49" West, 70.15 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 90° 26′ 52", having a radius of 70.00 feet, and whose long chord bears South 30° 23′ 23" West, 99.38 feet to a point;
Thence South 14° 50′ 03" East, 210.99 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 10° 41′ 30", having a radius of 570.00 feet, and whose long chord bears South 20° 10′ 49" East, 106.21 feet to a point;
Thence South 25° 31′ 34" East, 92.32 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 18° 24′ 27", having a radius of 630.00 feet, and whose long chord bears South 16° 19′ 20" East, 201.53 feet to a point;
Thence South 07° 07′ 07" East, 154.50 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 40° 41′ 00", having a radius of 330.00 feet, and whose long chord bears South 13° 13′ 24" West, 229.43 feet to a point;
Thence South 33° 33′ 54" West, 446.15 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 58° 09′ 21", having a radius of 570.00 feet, and whose long chord bears South 04° 29′ 13" West, 554.04 feet to a point;
Thence South 24° 35′ 28" East, 32.15 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 72° 31′ 51", having a radius of 320.00 feet, and whose long chord bears South 60° 51′ 23" East, 378.58 feet to a point;
Thence North 82° 52′ 41" East, 544.94 feet to a point;
Thence South 23° 16′ 30" East, 939.13 feet to a point;
Thence North 89° 35′ 28" West, 65.52 feet to a point;
Thence North 23° 16′ 30" West, 867.73 feet to a point;
Thence South 82° 52′ 41" West, 499.85 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 72° 31′ 51", having a radius of 380.00 feet, and whose long chord bears North 60° 51′ 23" West, 449.56 feet to a point;
Thence North 24° 35′ 28" West, 32.15 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 58° 09′ 21", having a radius of 630.00 feet, and whose long chord bears North 04° 29′ 13" East, 612.36 feet to a point;
Thence North 33° 33′ 54" East, 446.15 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 40° 41′ 00", having a radius of 270.00 feet, and whose long chord bears North 13° 13′ 24" East, 187.71 feet to a point;
Thence North 07° 07′ 07" West, 51.46 feet to point "D";
Thence North 07° 07′ 07" West, 60.00 feet to a point;
Thence North 07° 07′ 07" West, 43.04 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 18° 24′ 27", having a radius of 570.00 feet, and whose long chord bears North 16° 19′ 20" West, 182.34 feet to a point;
Thence North 25° 31′ 34" West, 92.32 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 10° 41′ 30", having a radius of 630.00 feet, and whose long chord bears North 20° 10′ 49" West, 117.39 feet to a point;
Thence North 14° 50′ 03" West, 210.99 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 90° 26′ 52", having a radius of 130.00

feet, and whose long chord bears North 30° 23′ 23" East, 184.57 feet to a point;
Thence North 75° 36′ 49" East, 70.15 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 11° 26′ 23", having a radius of 570.00 feet, and whose long chord bears North 69° 53′ 37" East, 113.62 feet to a point;
Thence North 64° 10′ 25" East, 722.40 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 05° 14′ 59", having a radius of 2970.00 feet, and whose long chord bears North 61° 32′ 55" East, 272.04 feet to a point;
Thence North 58° 55′ 26" East, 336.63 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 01° 47′ 09", having a radius of 5030.00 feet, and whose long chord bears North 59° 49′ 00" East, 156.78 feet to a point;
Thence North 60° 42′ 35" East a distance of 1258.49 feet to the True Point of Beginning.

Parcel 20 - WM-LJ2 Road 6 (Revised 05-17-07):

A 60 foot wide strip of land situated in a portion of Section 21, 22 and 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence South 19° 01′ 57" East, 8489.96 feet to point "D", also the True Point of Beginning;
Thence South 82° 19′ 24" West, 428.44 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 09° 34′ 32", having a radius of 1530.00 feet, and whose long chord bears South 87° 06′ 40" West, 255.40 feet to a point;
Thence North 88° 06′ 04" West, 244.93 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 48° 45′ 42", having a radius of 230.00 feet, and whose long chord bears North 63° 43′ 13" West, 189.89 feet to a point;
Thence North 39° 20′ 22" West, 1640.14 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 54° 43′ 02", having a radius of 2080.00 feet, and whose long chord bears North 11° 58′ 50" West, 1911.77 feet to a point;
Thence North 15° 22′ 41" East, 83.75 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 21° 46′ 24", having a radius of 830.00 feet, and whose long chord bears North 26° 15′ 53" East, 313.52 feet to a point;
Thence North 37° 09′ 05" East, 283.58 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 14° 12′ 50", having a radius of 6530.00 feet, and whose long chord bears North 44° 15′ 31" East, 1615.82 feet to a point;
Thence North 51° 21′ 56" East, 394.79 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 10° 58′ 36", having a radius of 2030.00 feet, and whose long chord bears North 56° 51′ 14" East, 388.31 feet to a point;
Thence North 62° 20′ 32" East, 1852.06 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 66° 14′ 41", having a radius of 1108.46 feet, and whose long chord bears South 62° 27′ 42" East, 1211.39 feet to a point;
Thence North 84° 24′ 57" East, 165.12 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 09° 40′ 44", having a radius of 970.00 feet, and whose long chord bears North 79° 34′ 35" East, 163.67 feet to a point;
Thence North 74° 44′ 12" East, 308.51 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 26° 02′ 22", having a radius of 2207.56 feet, and whose long chord bears North 61° 43′ 01" East, 994.68 feet to a point;
Thence North 48° 41′ 50" East, 366.49 feet to point "C", also the beginning of a curve;
Thence along a curve to the left through an angle of 10° 39′ 39", having a radius of 330.00 feet, and whose long chord bears South 29° 25′ 01" East, 61.31 feet to a point;
Thence South 48° 41′ 50" West, 353.86 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 26° 02′ 22", having a radius of 2267.56 feet, and whose long chord bears South 61° 43′ 01" West, 1021.71 feet to a point;
Thence South 74° 44′ 12" West, 308.51 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 09° 40′ 44", having a radius of 1030.00 feet, and whose long chord bears South 79° 34′ 35" West, 173.79 feet to a point;
Thence South 84° 24′ 57" West, 165.12 feet to the beginning of a curve;

Thence along a curve to the right through an angle of 63° 23′ 04", having a radius of 1168.46 feet, and whose long chord bears North 63° 53′ 31" West, 1227.72 feet to a point;
Thence South 62° 20′ 32" West, 1795.25 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 10° 58′ 36", having a radius of 1970.00 feet, and whose long chord bears South 56° 51′ 14" West, 376.84 feet to a point;
Thence South 51° 21′ 56" West, 394.79 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 14° 12′ 50", having a radius of 6470.00 feet, and whose long chord bears South 44° 15′ 31" West, 1600.98 feet to a point;
Thence South 37° 09′ 05" West, 283.58 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 21° 46′ 24", having a radius of 770.00 feet, and whose long chord bears South 26° 15′ 53" West, 290.86 feet to a point;
Thence South 15° 22′ 41" West, 83.75 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 54° 43′ 02", having a radius of 2020.00 feet, and whose long chord bears South 11° 58′ 50" East, 1856.62 feet to a point;
Thence South 39° 20′ 22" East, 1640.14 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 48° 45′ 42", having a radius of 170.00 feet, and whose long chord bears South 63° 43′ 13" East, 140.35 feet to a point;
Thence South 88° 06′ 04" East, 244.93 feet to the beginning of a curve,
Thence along a curve to the left through an angle of 09° 34′ 32", having a radius of 1470.00 feet, and whose long chord bears North 87° 06′ 40" East, 245.39 feet to a point;
Thence North 82° 19′ 24" East, 429.02 feet to a point on a line;
Thence South 07° 07′ 07" East a distance of 60.00 feet to point "D" and the True Point of Beginning.

Parcel 21 - WM-LJ2 Road 7 (Revised 04-16-08):

A 60 foot wide strip of land situated in a portion of Section 13, Township 2 North, Range 20 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 79° 34′ 27" West, 12034.04 feet to the True Point of Beginning;
Thence South 43° 25′ 25" West, 70.13 feet to a point;
Thence North 77° 45′ 18" West, 205.02 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 25° 26′ 14", having a radius of 320.00 feet, and whose long chord bears South 89° 31′ 35" West, 140.90 feet to a point;
Thence South 76° 48′ 28" West, 250.44 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 08° 46′ 10", having a radius of 320.00 feet, and whose long chord bears South 72° 25′ 23" West, 48.93 feet to a point;
Thence South 68° 02′ 18" West, 109.46 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 24° 42′ 20", having a radius of 330.00 feet, and whose long chord bears South 80° 23′ 28" West, 141.20 feet to a point;
Thence North 87° 15′ 21" West, 239.43 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 06° 45′ 19", having a radius of 3030.00 feet, and whose long chord bears North 83° 52′ 41" West, 357.04 feet to a point;
Thence North 80° 30′ 02" West, 431.96 feet to a point;
Thence North 32° 22′ 11" West, 80.57 feet to a point;
Thence South 80° 30′ 02" East, 485.73 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 06° 45′ 19", having a radius of 2970.00 feet, and whose long chord bears South 83° 52′ 41" East, 349.97 feet to a point;
Thence South 87° 15′ 21" East, 239.43 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 24° 42′ 20", having a radius of 270.00 feet, and whose long chord bears North 80° 23′ 28" East, 115.52 feet to a point;
Thence North 68° 02′ 18" East, 109.46 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 08° 46′ 10", having a radius of 380.00 feet, and whose long chord bears North 72° 25′ 23" East, 58.10 feet to a point;
Thence North 76° 48′ 28" East, 250.44 feet to the beginning of a curve;

Thence along a curve to the right through an angle of 25° 26′ 14", having a radius of 380.00 feet, and whose long chord bears North 89° 31′ 35" East, 167.32 feet to a point;
Thence South 77° 45′ 18" East, 241.33 feet to the True Point of Beginning.

Parcel 22 - WM-LJ2 Road 8 (Revised 05-17-07):

A 60 foot wide strip of land situated in a portion of Section 18 and 19, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 74° 35′ 55" West, 6791.07 feet to the True Point of Beginning;
Thence South 30° 04′ 58" East, 232.42 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 24° 49′ 30", having a radius of 530.00 feet, and whose long chord bears South 17° 40′ 13" East, 227.85 feet to a point;
Thence South 05° 15′ 28" East, 114.49 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 06° 53′ 43", having a radius of 470.00 feet, and whose long chord bears South 08° 42′ 20" East, 56.53 feet to a point;
Thence South 12° 09′ 12" East, 713.78 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 06° 11′ 31", having a radius of 1970.00 feet, and whose long chord bears South 15° 14′ 58" East, 212.80 feet to a point;
Thence South 18° 20′ 43" East, 315.02 feet to a point;
Thence South 89° 51′ 42" East, 619.88 feet to a point;
Thence South 00° 02′ 59" West, 546.97 feet to a point;
Thence North 88° 12′ 36" West, 60.03 feet to a point;
Thence North 00° 02′ 59" East, 485.24 feet to a point;
Thence North 89° 51′ 42" West, 603.18 feet to a point;
Thence North 18° 20′ 43" West, 358.23 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 06° 11′ 31", having a radius of 2030.00 feet, and whose long chord bears North 15° 14′ 58" West, 219.28 feet to a point;
Thence North 12° 09′ 12" West, 713.78 feet to the beginning of a curve;
Thence along a curve to the right through an angle of 06° 53′ 43", having a radius of 530.00 feet, and whose long chord bears North 08° 42′ 20" West, 63.75 feet to a point;
Thence North 05° 15′ 28" West, 114.49 feet to the beginning of a curve;
Thence along a curve to the left through an angle of 24° 49′ 30", having a radius of 470.00 feet, and whose long chord bears North 17° 40′ 13" West, 202.05 feet to a point;
Thence North 30° 04′ 58" West, 258.18 feet to a point;
Thence North 83° 08′ 48" East a distance of 65.29 feet to the True Point of Beginning.

Parcel 22A - WM-LJ2 Trans-Line (Revised 05-17-07):

A 200 foot wide strip of land situated in a portion of Section 8, 9, 16, 17, 21, 27 and 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 07° 48′ 05" West, 7999.91 feet to the True Point of Beginning;
Thence South 25° 17′ 35" East, 15090.82 feet to a point;
Thence North 88° 12′ 37" West, 112.32 feet to a point;
Thence South 00° 06′ 18" West, 233.15 feet to a point;
Thence North 25° 17′ 35" West, 15339.18 feet to a point;
Thence North 88° 40′ 04" East a distance of 218.86 feet to the True Point of Beginning.

Parcel 23 (Waste Management):

All that real property located in Section 9, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, described as follows:

A 163.0' strip lying 125.5' North and 37.50' South of the following described centerline:

Commencing at the Northwest corner of Section 9, T2N, R21E., W.M.; thence S59°59'16"E 649.34' to the true point of beginning; thence S78°38'23"W 559.60' to the west line of said Section 9 and terminus of this described centerline.

Said 163' strip extending and shortening the sidelines thereof to terminate at the west line of said Section 9 and that line described as follows:

Begining at the Northwest corner of said Section 9; thence southeasterly in a straight line to the Southeast corner of the Southwest 1/4 of the Southeast 1/4 of Section 10, T2N, R21E., W.M.

Parcel 24 (Waste Management):

TRACT A:

A 50 foot strip of land over, under and across a portion of Sections 17 and 8, Township 2 North, Range 21 East, Willamette Base and Meridian, in Gilliam County, Oregon, lying 25 feet either side of the following described centerline:

Commencing at the Northwest corner of said Section 17, thence southwardly along the westerly line of said Section 17, South 00°33'58" East, 966.78 feet to a point on the Northerly boundary line of that lease for the Leaning Juniper IIA Wind Farm described as Parcel 1A (West Parcel) in that Title Commitment No. NCS-391924-OR1 by First American Title Insurance Company, dated March 11, 2010;
Thence Eastwardly along said Northerly line South 87°39'19" East, 536.99 feet to the point of beginning;
Thence leaving said line North 46°36'44" East, 1211.18 feet;
Thence North 61°57'27" East, 288.32 feet to the Southerly line of said Section 8;
Thence continuing North 61°57'27" East, 619.94 feet to a point on the Westerly line of that easement described as Parcel 9, WM-LJ2 Collector 6 in said Title Commitment No. NCS-391924-OR1 and the point of termination of said centerline.
The sidelines of said strip of land are to be lengthened or shortened to end at the said lines of the West Parcel and WM-LJ2 Collector 6.

TRACT B:

A 75 foot wide strip of land over, under or across a portion of Section 13, Township 2 North, Range 20 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed to Oregon Waste Management Systems, Inc., by Warranty Deed recorded December 21, 1992 as Document M-68-236, Deed Records of Gilliam County, Oregon, more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20 and 21 of Township 2 North, Range 21 East, said point being a found brass disc;
Thence North 79°51'12" West, 12,072.38 feet to a point on the Northerly line of that parcel described in that Title Commitment No. NCS-391924-OR1 by First American Title Insurance Company dated March 11, 2010 and the point of beginning herein described easement;
Thence Southwestwardly along said Northerly line South 43°25'25" West, 87.66 feet to a point;
Thence North 77°45'18" West, 159.64 feet to the beginning of a tangent curve to the left;
Thence along said curve with an interior angle of 25°26'14", and a radius of 245.00 feet, an arc length of 108.77 feet;
Thence South 76°48'28" West, 250.44 feet to the beginning of a tangent curve to the left;
Thence along said curve with an interior angle of 08°46'10", and a radius of 245.00 feet, an arc length of 18.79 feet;

Thence South 68°02'18" West, 109.46 feet to the beginning of a tangent curve to the right;
Thence along said curve with an interior angle of 24°42'21", and a radius of 405.00 feet, an arc length of 88.70 feet;
Thence North 87°15'21" West, 239.43 feet to the beginning of a tangent curve to the right;
Thence along said curve with an interior angle of 06°45'19", and a radius of 3105.00 feet, an arc length of 366.09 feet;
Thence North 80°30'02" West, 364.74 feet to said northerly line;
Thence Northwestwardly along said northerly line North 32°22'11" West, 100.72 feet;
Thence South 80°30'02" East, 431.96 feet to the beginning of a tangent curve to the left;
Thence along said curve with an interior angle of 06°45'19", and a radius of 3030.00 feet an arc length of 357.25 feet;
Thence South 87°15'21" East, 239.43 feet to the beginning of a tangent curve to the left;
Thence along said curve with an interior angle of 24°42'21", and a radius of 330.00 feet, an arc length of 142.30 feet;
Thence North 68°02'18" East, 109.46 feet to the beginning of a tangent curve to the right;
Thence along said curve with an interior angle of 08°46'10", and a radius of 320.00 feet, an arc length of 48.98 feet;
Thence North 76°48'28" East, 250.44 feet to the beginning of a tangent curve to the right;
Thence along said curve with an interior angle of 25°26'14", and a radius of 320.00 feet, an arc length of 142.07 feet;
Thence South 77°45'18" East 205.02 feet to the point of beginning.

Parcel 25 (Hickerson):

All of the following described property located in Township 2 North, Range 21 East, W.M., Gilliam County, Oregon, described as follows:

Section 22: All that portion of the SE 1/4 of the NE 1/4 lying and being east of the right of way of the Oregon-Washington Railroad & Navigation Co.
EXCEPTING THEREFROM that parcel conveyed to the State of Oregon described in deed recorded November 15, 1967, in Gilliam County Deed Book 48, Page 100.
ALSO EXCEPTING THEREFROM that parcel conveyed to the State of Oregon described in deed recorded March 16, 1994, in Gilliam County Deed Records as M-69-62.

Parcel 26 (Waste Management):

A tract of land located in Township 2 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:

Section 15: All
Except all land lying and being on the East side of the John Day Highway in the NE1/4NE1/4; and all land lying and being on the East side of the Oregon-Washington Railroad & Navigation Co. Right of way, Condon branch in the SE1/4NE1/4 and E1/2SE1/4.

Parcel 27 (Quarter M):

A tract of land located in Township 2 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:

Section 14: All
Section 23: N1/2
Section 15: All of E1/2 lying east of the O.W.R.&N. Railroad, EXCEPT 18.9 acres sold to the State of Oregon, State Highway Commission, recorded in Gilliam County Deed Book 48, Page 181;
ALSO EXCEPTING that portion conveyed to the State of Oregon, by and through its Department of Transportation, in Warranty Deed recorded April 21, 1994, in Gilliam County Deed Records as Instrument No. M-69-95.
Section 22: All of NE1/4NE1/4 lying east of the O.W.R.&N. Railroad right of way.
EXCEPTING THEREFROM Oregon State Highway No. 19 road and railroad rights of way.

Parcel 28 (Hickerson):

A tract of land located in Township 2 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:

Section 22: All that portion of the SE 1/4 of the NE 1/4 lying and being east of the right of way of the Oregon-Washington Railroad & Navigation Co.
EXCEPTING THEREFROM that parcel conveyed to the State of Oregon described in deed recorded November 15, 1967, in Gilliam County Deed Book 48, Page 100.
ALSO EXCEPTING THEREFROM that parcel conveyed to the State of Oregon described in deed recorded March 16, 1994, in Gilliam County Deed Records as M-69-62.

Parcel 29: Intentionally deleted

Parcel 30 (Mid-Columbia):

A tract of land located in Township 3 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:

Section 34: Parcels 1 and 2 of Land Partition No. 2008-04, filed in the office of the Gilliam County Clerk on August 1, 2008.

Parcel 31 (Krebs):

A tract of land located in Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, described as follows:

Section 10: That portion of the E1/2E1/2 lying east of Highway 19;
Section 11: That portion of the W1/2 lying east of Highway 19.

Parcel 32 (Sumner):

A tract of land located in Township 2 North, Range 21 East, of the W.M., Gilliam County, Oregon described as:

Section 23: South half;
Section 26: All, EXCEPT that parcel conveyed by Bargain and Sale Deed recorded April 24, 2007, in Gilliam County Deed Records as M-74-831;
Section 27: That portion of the Northeast quarter Northeast quarter East of the centerline of Oregon State Highway No. 19.
Excepting Oregon State highway and county road right of ways.

Parcel 33 (Kerr/Munro/Labbe):

A tract of land located in Township 1 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:

Section 1: All;
Section 2: That part lying east of the John Day Highway;
Section 11: E1/2;
Section 12: All;
Section 13: NW 1/4

EXCEPTING Oregon state highway and county road rights of way.

Parcel 34 (Walters):

A tract of land located in Township 1 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:

Section 11: Western one-half.

Parcel 35 (Holzapfel):

A tract of land located in Township 2 North, Range 21 East, of the W.M., Gilliam County, Oregon, described as:
Sections 27, 34 and 33: Parcel 1 of Land Partition No. 2000-02, filed in Gilliam County as M-72-178.

Parcel 36 (KBC):

Real Property situated in the County of Morrow, State of Oregon, hereby described as follows:

92 acres in Township 2 South, Range 23 East, Eastern 92 acres of the Southwest One-Quarter of Section 9.

Parcel 37 (Sumner):

A tract of land located in Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being described as follows:

Section 26: All.

Subject to easements, rights of way and reservations as the same may exist or appear of record.

Parcel 38 (BPA):

A tract of land being located in the North one-half (N1/2) of Section 8, Township 2 North, Range 21 East, W.M., Gilliam County, Oregon, more particularly described as follows:
Commencing at the Northeasterly corner of Lot 2 of Jones Canyon Subdivision, Records of Gilliam County, Oregon;
Thence North 36°37'30" West a distance of 98.16 feet to the true point of beginning of this easement area center line, said easement area being 20.00 feet wide and lying 10.00 feet on each side of said center line;
Thence along said center line South 53°21'47" West a distance of 87.93 feet to a point hereafter called point "A";
Thence South 36°37'30" East a distance of 178.16 feet to the terminus of this center line description, the side lines of this easement area to be terminated at right angles to this course;
Together with an easement area lying within a 20.00 foot radius measured from said point "A".

Attachment 8
Legal Opinion Letter

DocuSign Envelope ID: 61CC400D-8202-440E-B62A-454765D60588

Avangrid
A member of the Iberdrola Group

December 15, 2023

Sarah Esterson
Oregon Department of Energy
550 Capitol St. NE, 1st Floor
Salem, Oregon 97301

Re: Request for Amendment 3 of Leaning Juniper IIA Site Certificate, RAI 5 Response

Dear Ms. Esterson:

I am an attorney for Avangrid Renewables, LLC, an Oregon limited liability company, and also represent and have acted as counsel to its affiliate, Leaning Juniper Wind Power II, LLC (the "Certificate Holder"). I have examined originals or copies certified or otherwise identified to my satisfaction as the books and records of Certificate Holder and such other documents, limited liability company records, certificates of public officials and other instruments regarding the Certificate Holder as I have deemed necessary and appropriate for the purposes of this opinion letter.

In rendering this opinion expressed below, I have assumed (i) the authenticity of all the documents submitted to me as originals and (ii) the conformity to original documents of all documents submitted to me as copies. As to factual matters, I have relied to the extent deemed proper upon statements and certification of officers and managers of the Certificate Holder.

Based on the foregoing, to the best of my knowledge, I am of the opinion that, subject to the Certificate Holder's meeting of all applicable federal, state and local laws (including all rules and regulations promulgated there under), the Certificate Holder has the legal authority to complete the activities contemplated in the pending Request for Amendment 3 to repower the existing Leaning Juniper IIA Wind Power Facility without violating its articles of organization, covenants or similar agreements.

I am a member of the bar of the state of Oregon and other jurisdictions. For the purposes of this opinion I do not hold myself out as an expert in, and do not express any opinion with respect to the law of any jurisdiction other than the law of the state of Oregon. The foregoing opinion is limited solely to whether the Certificate Holder has the authority under its operating agreements to construct, own, operate, and repower the Leaning Juniper IIA Wind Power Facility. I express no opinion as to the applicability of any federal, state or local laws (including all rules and regulations promulgated there under) to such construction and operation or as to the effects of the foregoing laws on such construction and operation.

Please contact me if you have any additional questions regarding this matter.

Very truly yours,

DocuSigned by:
Megan Chang
FA97D7489E4B480...

Megan Chang
Senior Counsel

Avangrid Renewables, LLC
2701 NW Vaughn Street, Suite 300
Portland, OR 97210

Attachment 9
Financial Assurance Letter

Liberty Mutual
SURETY

November 1st, 2023

Ms. Sarah T. Esterson
Energy Facility Siting Office
Oregon Department of Energy
550 Capitol St. NE, 1st Floor
Salem, OR 97301-3742

RE: Avangrid Renewables, LLC
Leaning Juniper Wind Power II, LLC

Dear Ms. Esterson:

Avangrid Renewables, LLC is a highly regarded and valued client of Aon Risk Services and Liberty Mutual Insurance Company. Liberty Mutual Insurance Company (hereinafter, Liberty Mutual) is privileged to act as surety for Avangrid Renewables, LLC. Our surety relationship and experience with Avangrid Renewables, LLC has been superior in all respects and is qualified for issuance of a single bond in the amount of $10,000,000 with an aggregate capacity of $350,000,000.

Liberty Mutual is a national provider of surety bonds, enjoying an "Excellent" A.M. Best rating of "A". Liberty Mutual is listed in the Federal Register as a surety acceptable on government projects.

If Avangrid Renewables, LLC is selected for the project, and we receive a request from them to provide decommissioning bonds, we are prepared to look favorably upon issuance of these bonds. Such pre-qualification and approval would be conditioned upon applicable underwriting procedures, which are routine at the time of the bond request. However, please understand that the surety assumes no liability to you or to third parties if for any reason we do not execute any required bonds.

Should you have any questions or comments, please feel free to contact our office.

Sincerely,

Liberty Mutual Insurance Company

Nathaniel Jakaitis, Attorney-In-Fact

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: **8210070-012022**

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Bryan Huft; Jane Gilson; Jean Correia; Nathaniel Jakaitis; Tracy Sapere; Theresan E. Rowedder

all of the city of Boston state of MA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 8th day of May, 2023.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
David M. Carey, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY ss

On this 8th day of May, 2023 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 1st day of November, 2023.

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

Attachment 10
Updated Retirement Cost Estimate

Jacobs

Leaning Juniper IIA Repowering Project
Gilliam County, Oregon

Retirement Cost Estimate for the Leaning Juniper IIA Wind Power Facility

Final

February 2024

Avangrid A member of the Iberdrola Group

Leaning Juniper IIA Repowering Project, Gilliam County, Oregon

Document Title:	Retirement Cost Estimate
Revision:	Final
Date:	February 2024
Client Name:	Avangrid Renewables, LLC
Project Manager:	James Gregory/Jacobs
Author:	Robert Wells/Jacobs

Jacobs Engineering Group Inc.

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Executive Summary

Avangrid Renewables, LLC, doing business as Leaning Juniper Wind Power, LLC, has developed and is repowering portions of the Leaning Juniper IIA Wind Power Facility (Facility). The Facility is located in Gilliam County, Oregon. This document outlines the potential decommissioning cost of the Facility configuration after repowering is complete.

The construction costs for the work items are presented below and in Appendix A. Salvage costs are presented below and in Appendix B:

Table ES-1. Estimated Decommissioning Cost

Class IV
Range +25% to -15%
Total $6,230,000
$156,000 per tower site (40)

This executive summary provides an overview of the cost estimate. Reliance on this information is advised to be in consideration of the full context of this report.

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Executive Summary **ES-1**

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Appendixes

A Cost Estimate Detail and Summary Reports
B Supplemental Data

Tables

ES-1 Estimated Decommissioning Cost ES-1
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1. Estimate Information

1.1 Purpose of Estimate

The purpose of this retirement cost estimate is to establish an opinion of probable cost to decommission the Leaning Juniper IIA Wind Power Facility (Facility), in particular, the configuration after repowering portions of the Facility, for the determination of a basis for financial assurance.

1.2 Client

The Facility is owned and operated by Avangrid Renewables, LLC.

1.3 Plant Location and General Scope

Avangrid Renewables, LLC, has developed and is repowering the Facility in Gilliam County, Oregon. The current project build includes 43 turbines. This estimate is based on the final configuration after repowering 40 turbines.

1.4 Date and Preparation

This retirement cost estimate was prepared in December 2023 after review by client of the August 2023 draft estimate.

1.5 Estimate Classification and Methodology

This cost estimate is a Class 4 estimate as defined by the Association for the Advancement of Cost Engineering International (refer to Appendix B for further definition). This estimate uses detailed line item costs assumed to be representative of cost items required for an estimate prepared from bid documents.

2. Basis of Estimate

2.1 Basis Documents

This cost estimate is based on site layout, manufacturer technical data, client information, and references to requirements for decommissioning.

2.2 Key Assumptions

All estimate assumptions are based on information available as of December 2023 to reflect the number of turbines to decommission after repowering. Those assumptions include the following:

- The contractor will be allowed to stage construction to obtain the most efficient workflow possible.
- The contractor will not be required to perform work using the same means or methods used to produce this estimate.
- The contractor will be allowed to use the most appropriate, safest, and efficient methods available to them at the time of performing the work.
- The contractor will secure and provide any required demolition permits or certificates.
- Site access is assumed to be available for all sites.

- Crane movement and setup is separate from dismantling operation.
- All recyclable material is processed to manageable sizes for transport by recyclers FOB at site (title to removed material will transfer at the site).
- Turbine blades will be disposed at a waste facility within 10 miles, no salvage value, dump fee included in estimate.
- Salvaged roadway material and foundation concrete rubble is stockpiled or delivered to a point onsite where recycler can reclaim and remove materials. Disposal cost for concrete is included but may be deemed recyclable by recyclers at the time of decommissioning.
- Substation transformers and switchgear are to be removed and loaded to recycler trucks.
- Site restoration includes roadway removal and regrading of site, including deep tilling to remove compaction of soils at road and tower site.

2.2.1 Decommissioning Methodology

Decommissioning is assumed to proceed with the following sequence and methodology:

1) Site investigation.
2) Contact with landowner.
3) Access assessment.
4) Public road condition assessment.
5) Site access road assessment.
6) Decommissioning permits application and notification.
7) Prepare site-by-site decommissioning sequence and schedule.
8) Negotiate decommissioning contractor terms and conditions.
9) Obtain necessary permits and approvals.
10) Notice to Proceed for decommissioning contractor.
11) Mobilize and prepare field staff yard and offices.
12) Mobilize construction equipment (loaders, lowboys, graders, utility trucks, etc.).
13) It is assumed that disconnect and secure electrical equipment from public power grid is by others.
14) Secure rotating machinery in preparation for disassembly.
15) Begin fluid removal and processing.
16) Torch-fell towers with blades and hub intact.
17) Process blades and dispose.
18) Remove nacelle and hub and load to recycler's trucks.
19) Process tower steel into transportable size.
20) Remove site wire to a depth of 4 feet below final grade.
21) Remove tower foundation to a depth of 4 feet below final grade using approved means and methods.
22) Haul tower foundation material to disposal site for reprocessing (concrete to be crushed, rebar to be recycled).

23) Remove access road and gravel surfacing where required.

24) Haul surfacing material to approved stockpile for reuse.

25) Regrade site to appropriate contours.

26) Prepare soil for seeding.

27) Seed site.

28) Final cleanup.

2.2.2 Estimate Methodology

For the development of this cost estimate, systems that are not adequately defined for estimating purposes may use parametric costing based on a unit of measurement (i.e., cost per square foot or cost per unit), with consideration to the project particulars. Costs are assigned per unit and typically is developed by averaging similar projects and analysis of historical costs.

Scope and systems that are congruent with detailed line item estimating methods are used where warranted. Costs are then geographically adjusted to reflect local labor and material rates, job site conditions, and requirements. With design progression, parametric costing can be replaced with detailed cost components.

2.3 Exclusions

This cost estimate excludes the following costs:

- Nonconstruction or soft costs for design, services during construction, land, legal, and owner administration costs.
- Hazardous material removal or abatement, other than those present in the wind energy systems.
- Changes to the Facility location, routing, or schedule.
- Schedule delays due to inclement weather or other natural causes.

2.4 Allowances

The current cost estimate includes the following allowances:

- Disposal cost $74.00 per ton.

2.5 Project Delivery Schedule and Methodology

It is assumed that the decommissioning project authorization and notice to proceed with design efforts would occur in 2024. Depending on the contracting process selected, construction could start in late 2024. Most of the work is expected to be completed within approximately 12 months.

2.6 Labor, Materials, Subcontracts, and Other Direct Costs

2.6.1 Labor

Labor rates used align with the published Davis-Bacon rates for Gilliam County, Oregon.

2.6.2 Materials

No new materials of significance are placed on the Facility.

2.6.3 Subcontracts

It is assumed that the contractor may employ various specialty subcontractors, including hauling, electrical, and earthwork subcontractors.

2.6.4 Construction Equipment

Construction equipment pricing is per RSMeans national average.

2.7 Markups, Taxes, and Other Indirect Costs

The following **typical** contractor markups are applied to the retirement cost estimate:

Table 2-1. Contractor Markups

Description	Rate
General Requirements/Mobilization	4%
Contractor Overhead & Profit	15%
Bonds/Insurance	2.7%
Contingency	10%
Owner's Administration	10%

2.8 Escalation Costs

This estimate includes no escalation. Future cost forecast factors for projects with commodity cost bases range between 2% to 3% per annum.

2.9 Cost Resources

The following is a list of the cost resources used in the development of this cost estimate.

- RSMeans provided labor, material, equipment costs, markups, and indirect costs, which are adjusted for project scope, regionalized, interpolated and extrapolated as warranted.
- Estimator judgment.

2.10 Estimate Validity

This estimate has validity for approximately 90 days, as over time there may be significant changes in the salvage, commodity, and fuel markets.

2.11 Disclaimer

This estimate is an opinion of cost. Any conclusions on project economic feasibility or funding requirements are advised to be made in the full context of this report and information available at the time the opinion was prepared. The cost of the project is dependent on competitive market conditions, site conditions, final

project scope, schedule, continuity of personnel and engineering, final decommissioning method, and procurement means and methods, not limited to other factors. Final project costs are expected to vary from the opinions of cost presented herein.

Appendix A
Cost Estimate Detail and Summary Reports

Notes on Estimate Reports

All amounts are in US Dollars based Q3 2023 prices
Coding used in estimate for various sections is internal and not intended to imply meaning

Abbreviations used:

AC	Acre
bcy	bank cubic yard
Bldg.	Building
C.Y.	Cubic Yard
cap	capacity
cf	cubic foot
cy	cubic yard
diam.	diameter
ea	Each
GVW	Gross Vehicle Weight
HP	Horsepower
hrs	hours
kv	kiloVolt
lb	pound
lcy	loose cubic yard
lf	lineal foot
LS	Lump Sum
Met	Meteorological
mh	man hour
MI	Mile
No.	Number
O&M	Operations and Maintenance
Q3	Third calendar quarter
sy	square yars

Leaning Juniper IIA Decommission Estimate

Facility Component	Unit Cost	Pre Construction	
		No. of Components	Total Cost
Wind Facility Components			
TURBINES AND TOWERS			
Disconnect electrical	$6,987.00	1	$6,987
Fell turbine towers (ea)	$13,430.75	40	$537,230
Process Tower for Recycling (ea)	$48,110.04	40	$1,924,401
Remove and Load Nacelle and Hub (ea)	$1,984.53	40	$79,381
Process and Dispose of Blades (ea)	$6,066.24	120	$727,949
Remove pad transformers/foundations (ea)	$1,710.43	40	$68,417
Remove Tower Foundation & Dispose (cy)	$394.90	3093	$1,221,410
MET TOWERS			
Fell Met Towers (ea)	$7,827.50	2	$15,655
Destruct and Dispose Met Towers (ea)	$7,250.00	2	$14,500
O&M BUILDING			
Dismantle and dispose O&M Facility	$25,298.00	1	$25,298
SUBSTATION			
Remove Substation Equipment	$34,086.00	1	$34,086
Remove Collector Substation	$35,830.00	1	$35,831
POWER LINE			
Above-ground Collector 34.5kV Lines (per mile)	$7,103.00	2	$14,206
230 kv Transmission Lines (per mile)	$56,120.00	0.1	$5,612
Remove Below-Ground 34.5kV Tails (ea)	$472.30	43	$20,309
ACCESS ROADS			
Road removal, grading and seeding (per mile)	$67,188.29	16.7	$1,122,044
TEMPORARY AREAS			
Grading and seeding around access roads, met towers, O&M facilities and turbine turnouts (per acre)	$506.66	396.2	$200,741
GENERAL COSTS			
Permits, mobilization, engineering	$178,102.00	1	$178,102
Wind Facility Components Subtotal (Q3 2023 Dollars)			
		Subtotal (Q3 2023) =	$6,232,159

Appendix B
Supplemental Data

Bid Item	Area	Description	Takeoff Quantity	Labor Quantity	Labor Amount	Material Amount	Equip Amount	Total Amount
01		**TURBINES AND TOWERS**						
	01A	**DISCONNECT ELECTRICAL AND READY FOR DISASSEMBLY**						
		Field personnel, general purpose laborer, average crew of four	0.40 week	64 mh	**5,672**	**-**	**-**	**5,672**
		Rent aerial lift, telescoping boom to 60' high, 600 lb cap	2.00 day	-	**-**	**-**	**1,315**	**1,315**
		01A DISCONNECT ELECTRICAL AND READY FOR DISASSEMBLY	**1.00 EA**	**64 hrs**	**5,672**		**1,315**	**6,987**
	01B	**FELL TURBINE TOWERS (40 AFTER REPOWER)**						
		Field personnel, general purpose laborer, average, crew of two	13.00 week	1,040 mh	**92,171**	**-**	**-**	**92,171**
		Rent dozer, crawler, torque converter, diesel 700 HP	65.00 day	-	**-**	**-**	**390,650**	**390,650**
		Selective demolition, torch cutting, steel, 1" thick plate -- CUT FOR FELLING	1,400.00 lf	160 mh	**20,300**	**5,975**	**418**	**26,692**
		Wire rope, 6 x 19, 1/2" diam, fiber core, 5000' rolls	18,000.00 lf	-	**-**	**27,717**	**-**	**27,717**
		01B FELL TURBINE TOWERS (40 AFTER REPOWER)	**40.00 EA**	**1,200 hrs**	**112,471**	**33,692**	**391,068**	**537,230**
	01C	**PROCESS FOR RECYCLING, TOWER**						
		Field personnel, general purpose laborer, average	50.00 week	2,000 mh	**177,251**	**-**	**-**	**177,251**
		Rent excavator diesel hydraulic crawler mounted 2 CY capacity	250.00 day	-	**-**	**-**	**401,876**	**401,876**
		Rent excavator attachment, grapples	250.00 day	-	**-**	**-**	**64,688**	**64,688**
		Operating costs for cutting torch, including tips and gas	978.00 day	-	**-**	**-**	**270,600**	**270,600**
		Selective demolition, torch cutting, steel, 1" thick plate -- CUT FOR RECYCLING	325,968.00 lf	7,800 mh	**989,626**	**-**	**20,361**	**1,009,987**
		01C PROCESS FOR RECYCLING, TOWER	**40.00 EA**	**9,800 hrs**	**1,166,877**		**757,524**	**1,924,401**
	01Ca	**REMOVE AND LOAD NACELLE AND HUB (36 AFTER REPOWER)**						
		Field personnel, general purpose laborer, average, crew of two	3.00 week	240 mh	**21,270**	**-**	**-**	**21,270**
		Rent crane truck mounted, hydraulic, 80 ton capacity	15.00 day	-	**-**	**-**	**58,111**	**58,111**
		01Ca REMOVE AND LOAD NACELLE AND HUB (36 AFTER REPOWER)	**40.00 EA**	**240 hrs**	**21,270**		**58,111**	**79,381**
	01Cb	**PROCESS AND DISPOSE OF BLADES**						
		Field personnel, general purpose laborer, average, crew of two	48.00 week	3,840 mh	**340,323**	**-**	**-**	**340,323**
		Rent excavator diesel hydraulic crawler mounted 2 CY capacity	120.00 day	-	**-**	**-**	**192,900**	**192,900**
		Rent excavator attachment, bucket thumbs	120.00 day	-	**-**	**-**	**35,715**	**35,715**
		Selective demolition, dump charges, typical urban city, building construction materials, includes tipping fees only	886.26 ton	-	**-**	**96,179**	**-**	**96,179**
		Hauling, excavated or borrow material, loose cubic yards, 5 mile round trip, 1 load/hour, 16.5 C.Y. dump trailer, highway haulers, excludes loading	3,545.04 lcy	280 mh	**29,236**	**-**	**33,597**	**62,832**
		01Cb PROCESS AND DISPOSE OF BLADES	**120.00 EA**	**4,120 hrs**	**369,558**	**96,179**	**262,212**	**727,949**
	01D	**REMOVE AND LOAD PAD TRANSFORMERS**						
		Field personnel, general purpose laborer, average, crew of two	2.00 week	160 mh	**14,180**	**-**	**-**	**14,180**
		Rent crane truck mounted, hydraulic, 80 ton capacity	14.00 day	-	**-**	**-**	**54,237**	**54,237**

Bid Item	Area	Description	Takeoff Quantity	Labor Quantity	Labor Amount	Material Amount	Equip Amount	Total Amount
		01D REMOVE AND LOAD PAD TRANSFORMERS	**40.00 EA**	**160 hrs**	**14,180**		**54,237**	**68,417**
	01E	**FOUNDATION PAD REMOVAL AND DISPOSAL (43 AFTER REPOWER)**						
		Original 43 Bldg. footings and foundations demolition, remove concrete footing, 2' thick, 3' wide, excludes disposal costs and dump fees	2,193.00 cy	800 mh	**97,075**	**-**	**237,974**	**335,049**
		Extra for 36 Bldg. footings and foundations demolition, remove concrete footing, 2' thick, 3' wide, excludes disposal costs and dump fees	900.00 cy	400 mh	**48,537**	**-**	**97,664**	**146,201**
		Selective demolition, dump charges, typical urban city, building construction materials, includes tipping fees only	6,186.00 ton	-	**-**	**671,316**	**-**	**671,316**
		Hauling, excavated or borrow material, loose cubic yards, 5 mile round trip, 1 load/hour, 16.5 C.Y. dump trailer, highway haulers, excludes loading	4,000.00 lcy	296 mh	**30,935**	**-**	**37,908**	**68,844**
		01E FOUNDATION PAD REMOVAL AND DISPOSAL (43 AFTER REPOWER)	**3,093.00 CY**	**1,496 hrs**	**176,548**	**671,316**	**373,546**	**1,221,410**
		01 TURBINES AND TOWERS	**40.00 EA**	**17,080 hrs**	**1,866,576**	**801,187**	**1,898,013**	**4,565,776**
02		**MET TOWERS**						
	02A	**FELL MET TOWERS**						
		Field personnel, general purpose laborer, average, crew of two	0.40 week	32 mh	**2,836**	**-**	**-**	**2,836**
		Rent dozer, crawler, torque converter, diesel 700 HP	2.00 day	-	**-**	**-**	**12,020**	**12,020**
		Selective demolition, torch cutting, steel, 1" thick plate -- CUT FOR FELLING	4.00 lf	0 mh	**12**	**17**	**0**	**30**
		Wire rope, 6 x 19, 1/2" diam, fiber core, 5000' rolls	500.00 lf	-	**-**	**770**	**-**	**770**
		02A FELL MET TOWERS	**2.00 EA**	**32 hrs**	**2,848**	**787**	**12,020**	**15,655**
	02B	**DESTRUCT MET TOWERS**						
		Field personnel, general purpose laborer, average, crew of two	0.40 week	32 mh	**2,836**	**-**	**-**	**2,836**
		Rent excavator diesel hydraulic crawler mounted 2 CY capacity	2.00 day	-	**-**	**-**	**3,215**	**3,215**
		Rent excavator attachment, grapples	2.00 day	-	**-**	**-**	**518**	**518**
		Operating costs for cutting torch, including tips and gas	2.00 day	-	**-**	**-**	**553**	**553**
		Selective demolition, torch cutting, steel, 1" thick plate -- CUT FOR RECYCLING	1,000.00 lf	24 mh	**3,048**	**4,268**	**63**	**7,378**
		02B DESTRUCT MET TOWERS	**2.00 EA**	**56 hrs**	**5,884**	**4,268**	**4,349**	**14,500**
		02 MET TOWERS	**2.00 EA**	**88 hrs**	**8,732**	**5,055**	**16,369**	**30,156**
03		**O&M BUILDING**						
	03B	**DISMANTLE AND DISPOSE OF O&M FACILITY**						
		Rent dozer, crawler, torque converter, diesel 200 HP	7.00 day	-	**-**	**-**	**14,191**	**14,191**
		Building demolition, small buildings or single buildings, steel, includes 20 mile haul, excludes salvage, foundation demolition or dump fees	6,000.00 cf	19 mh	**1,926**	**-**	**1,689**	**3,615**
		Bldg. footings and foundations demolition, remove concrete footing, 2' thick, 3' wide, excludes disposal costs and dump fees	13.04 cy	5 mh	**651**	**-**	**1,415**	**2,066**

Bid Item	Area	Description	Takeoff Quantity	Labor Quantity	Labor Amount	Material Amount	Equip Amount	Total Amount
	03B	**DISMANTLE AND DISPOSE OF O&M FACILITY**						
		Selective demolition, dump charges, typical urban city, building construction materials, includes tipping fees only	50.00 ton	-	-	5,426	-	5,426
		03B DISMANTLE AND DISPOSE OF O&M FACILITY	**1.00 EA**	**25 hrs**	2,577	5,426	17,294	25,298
		03 O&M BUILDING	**1.00 LS**	**25 hrs**	2,577	5,426	17,294	25,298
04		**SUBSTATION & POWER LINE**						
	04A	**REMOVE ABOVE-GROUND 34.5-kV COLLECTOR (PER MILE)**						
		Field personnel, general purpose laborer, average crew of two	1.00 week	80 mh	7,090	-	-	7,090
		Rented truck, flatbed, GVW = 20,000 Lbs	5.00 day	-	-	-	1,636	1,636
		Selective demolition, utility poles & cross arms, utility poles, wood, 35'-45' high -- 60'	10.00 ea	40 mh	4,860	-	566	5,426
		Selective demolition, dump charges, typical urban city, building construction materials, includes tipping fees only	0.50 ton	-	-	54	-	54
		04A REMOVE ABOVE-GROUND 34.5-kV COLLECTOR (PER MILE)	**2.00 MI**	**120 hrs**	11,950	54	2,202	14,206
	04B	**REMOVE 230-kV TRANSMISSION LINE (PER MILE)**						
		Field personnel, general purpose laborer, average crew of three	0.50 week	40 mh	3,545	-	-	3,545
		Rented truck, flatbed, GVW = 20,000 Lbs	3.00 day	-	-	-	982	982
		Selective demolition, utility poles & cross arms, utility poles, wood, 35'-45' high -- 60'	2.00 ea	8 mh	972	-	113	1,085
		04B REMOVE 230-kV TRANSMISSION LINE (PER MILE)	**0.10 MI**	**48 hrs**	4,517		1,095	5,612
	04C	**REMOVE BELOW-GROUND 34.5-kV COLLECTOR TAILS**						
		Field personnel, general purpose laborer, average crew of three	1.00 week	120 mh	10,635	-	-	10,635
		Rent excavator diesel hydraulic crawler mounted 2 CY capacity	5.00 day	-	-	-	8,038	8,038
		Rented truck, flatbed, GVW = 20,000 Lbs	5.00 day	-	-	-	1,636	1,636
		04C REMOVE BELOW-GROUND 34.5-kV COLLECTOR TAILS	**43.00 EA**	**120 hrs**	10,635		9,673	20,308
	04D	**REMOVE SUBSTATION EQUIPMENT**						
		Field personnel, general purpose laborer, average, crew of two	1.00 week	80 mh	7,090	-	-	7,090
		Electrical Disconnect and Safe off	1.00 week	1 week	7,626	-	-	7,626
		Rent crane truck mounted, hydraulic, 80 ton capacity	5.00 day	-	-	-	19,370	19,370
		04D REMOVE SUBSTATION EQUIPMENT	**1.00 LS**	**120 hrs**	14,716		19,370	34,086
	04E	**DEMOLISH SUBSTATION**						
		Field personnel, general purpose laborer, average, crew of two	2.00 week	160 mh	14,180	-	-	14,180
		Rent crane truck mounted, hydraulic, 80 ton capacity	5.00 day	-	-	-	19,370	19,370
		Selective demolition, utility poles & cross arms, utility poles, wood, 35'-45' high -- 60'	4.00 ea	16 mh	1,944	-	226	2,170
		Selective demolition, dump charges, typical urban city, building construction materials, includes tipping fees only	1.00 ton	-	-	109	-	109

Bid Item	Area	Description	Takeoff Quantity	Labor Quantity	Labor Amount	Material Amount	Equip Amount	Total Amount
		04E DEMOLISH SUBSTATION	**1.00 LS**	**176 hrs**	**16,124**	**109**	**19,597**	**35,829**
		04 SUBSTATION & POWER LINE	**1.00 LS**	**584 hrs**	**57,942**	**163**	**51,937**	**110,042**
05		**ACCESS ROADS**						
	05A	**ROAD REMOVAL, GRADING AND SEEDING (PER MILE)**						
		Rent backhoe-loader wheel type 112 HP, 1-1/2 CY capacity	110.00 day	880 mh	**92,918**	**-**	**112,760**	**205,678**
		Rent scrapers, self-propelled, dual engine 21 CY capacity	110.00 day	-	**-**	**-**	**361,284**	**361,284**
		Rent water truck, off highway, 6000 gallon capacity	100.00 day	-	**-**	**7,333**	**209,862**	**217,195**
		Stripping, strip topsoil, clay, dry & soft, 200 HP dozer, ideal condtn	34,843.88 cy	240 mh	**25,553**	**-**	**44,150**	**69,703**
		Excavation, bulk, scrapers, bank measure, sandy clay & loam, 3000' haul, 21 C.Y. bucket, self propelled scrapers, 1/4 push dozer	34,843.88 bcy	560 mh	**60,338**	**-**	**159,055**	**219,393**
		Seeding, seeding only, field seed	32.39 acre	40 mh	**3,820**	**39,188**	**5,783**	**48,791**
		05A ROAD REMOVAL, GRADING AND SEEDING (PER MILE)	**16.70 MI**	**1,720 hrs**	**182,630**	**46,520**	**892,894**	**1,122,044**
		05 ACCESS ROADS	**16.70 MI**	**1,720 hrs**	**182,630**	**46,520**	**892,894**	**1,122,044**
06		**TEMPORARY AREAS**						
	06A	**SEED TEMPORARILY DISTURBED AREAS**						
		Seeding, seeding only, field seed	396.20 acre	14 mh	**1,337**	**174,439**	**24,965**	**200,741**
		06A SEED TEMPORARILY DISTURBED AREAS	**396.20 AC**	**14 hrs**	**1,337**	**174,439**	**24,965**	**200,741**
		06 TEMPORARY AREAS	**396.20 AC**	**14 hrs**	**1,337**	**174,439**	**24,965**	**200,741**
07		**GENERAL COSTS**						
	07A	**PERMITS, MOBILIZATION, ENGINEERING, OVERHEAD, UTILITY DISCONNECTS (UNIT COST)**						
		Field personnel, field engineer, average	10.00 week	10 week	**31,970**	**-**	**-**	**31,970**
		Field personnel, superintendent, average	20.00 week	20 week	**68,193**	**-**	**-**	**68,193**
		Field personnel, Safety Professional, average	20.00 week	20 week	**68,193**	**-**	**-**	**68,193**
		Mobilization or demobilization, dozer, loader, backhoe or excavator, above 150 H.P., up to 50 miles	12.00 ea	40 mh	**4,176**	**-**	**5,570**	**9,746**
		07A PERMITS, MOBILIZATION, ENGINEERING, OVERHEAD, UTILITY DISCONNECTS (UNIT COST)	**1.00 LS**	**2,040 hrs**	**172,532**		**5,570**	**178,102**
		07 GENERAL COSTS	**1.00 LS**	**2,040 hrs**	**172,532**		**5,570**	**178,102**

Estimate Totals

Description	Amount	Totals	Rate
Labor	2,292,326	hrs	
Material	1,032,790		
Subcontract			
Equipment	2,907,043	hrs	
Other			
Total Site Restoration Cost	**6,232,159**	**6,232,159**	
Total		***6,232,159***	

AMD2 (Final Order)				AMD3 (pRFA)				
Cost Estimate Component	**Quantity**	**Unit Cost**	**Extension**	**Wind Facility Components**	**Quantity**	**Unit Cost**	**Total Cost**	
Turbines and Towers				**Turbines and Towers**				
Disconnect electrical and ready for disassembly (per tower)	43	$ 979.00	$ 42,097.00	Disconnect electrical	1	$6,987.00	$6,987	This difference is methodological. Jacobs considers disconnect at Sub the cost driver (1)
Remove turbine blades and hubs (per tower)	43	$ 5,207.00	$ 223,901.00	Fell turbine towers (ea)	40	$13,430.75	$537,230	
Remove turbine towers (per net ton of steel)	12,436	$ 67.00	$ 833,212.00	Process Tower for Recycling (ea)	40	$48,110.04	$1,924,401	
Remove and load pad transformers (per tower)	43	$ 2,250.00	$ 96,750.00	Remove and Load Nacelle and Hub (ea)	40	$1,984.53	$79,381	
Foundation and transformer pad removal (per cubic yard of concrete)	2,193	$ 32.00	$ 70,176.00	Process and Dispose of Blades (ea)	120	$6,066.24	$727,949	
Restore turbine turnouts (per tower)	43	$ 1,297.00	$ 55,771.00	Remove pad transformers/foundations (ea)	40	$1,710.43	$68,417	
				Remove Tower Foundation & Dispose (cy)	3093	$394.90	$1,221,410	
Met Towers				**Met Towers**				
Dismantle and dispose of met towers (per tower)	2	$ 9,637.00	$ 19,274.00	Fell Met Towers (ea)	2	$7,827.50	$15,655	
				Destruct and Dispose Met Towers (ea)	2	$7,250.00	$14,500	
Substation and O&M Building				**O&M Building**				
Dismantle and dispose of collector substation	2	$ 133,607.00	$ 267,214.00	Dismantle and dispose O&M Facility	1	$25,298.00	$25,298	This difference is due to means; facility is crushed and hauled as opposed to dismantling
Dismantle and dispose of O&M facility	1	$ 47,156.00	$ 47,156.00	**Substation**				
				Remove Substation Equipment	1	$34,086.00	$34,086	This difference is an oversight that was corrected; an updated Jacobs cost estimate is supplied
Transmission Line				**Power Line**				
Remove above-ground 34.5-kV collector (per mile)	2.61	$ 3,390.00	$ 8,848.00	Above-ground Collector 34.5kV Lines (per mile)	2	$7,103.00	$14,206	This difference is negligible; escalation factor is 1.38 compared to variance factor 1.60
Remove 230-kV transmission line (per mile)	0.21	$ 48,520.00	$ 9,995.00	230 kv Transmission Lines (per mile)	0.1	$56,120.00	$5,612	
Remove below-ground 34.5-kV collector and junction boxes (each)	16	$ 1,322.00	$ 21,152.00	Remove Below-Ground 34.5kV Tails (ea)	43	$472.30	$20,309	This difference is methodological. Jacobs considers UG cable surfacing (tails) the driver
Access Roads				**Access Roads**				
Road removal, grading and seeding (per mile)	13.67	$ 74,486.00	$ 1,018,224.00	Road removal, grading and seeding (per mile)	16.7	$67,188.29	$1,122,044	
Temporary Areas				**Temporary Areas**				
Seed temporarily disturbed areas (per acre)	158.8	$ 2,775.00	$ 440,781.00	Grading and seeding around access roads, met towers, O&M facilities and turbine turnouts (per acre)	1600	$506.67	$810,675	This quantity was supplied to Jacobs; a revised quantity of ~~391~~ 396.2 acres per 2/12/24 email from Sarah Esterson to Avangrid is now in the updated.
General Costs				**General Costs**				
Permits, mobilization, engineering, overhead, utility disconnect (unit cost)	1	$ 444,403.000	$ 444,403.00	Permits, mobilization, engineering	1	$178,102.00	$178,102	Overhead (contractor) is included in above rates
Subtotal			$ 3,598,954.00	Subtotal			$6,806,262	
Subtotal Adjusted to 1st Quarter 2011 Dollars		1.111	$ 3,998,437.89					
Performance Bond		1%	$ 39,984.38	Performance Bond				Bond (contractor) is included in above rates
Gross Cost			**$ 4,038,422.27**	**Gross Cost**				
Administration and Project Management Costs		10%	$ 403,842.23	Administration and Project Management Costs				Admin/PM (owner) is included in above rates
Future Developments Contingency		10%	$ 403,842.23	Future Developments Contingency				Contingency (owner) is included in above rates
Total Site Restoration Cost			**$ 4,846,106.73**	**Total Site Restoration Cost**				
Total Site Restoration Cost (rounded to nearest $1,000)		**Q1 2010**	**$ 4,846,000.00**	**Total Site Restoration Cost** (rounded to nearest $1,000)		**Q3 2023**	$6,806,264	Variance factor 1.40 compares favorably to Escalation factor 1.38

Look at pg. 3 of AMD2 Final Order for Facility Description of LJIIA.

Determination of updated cost based on PPI history (see below for commodities included)

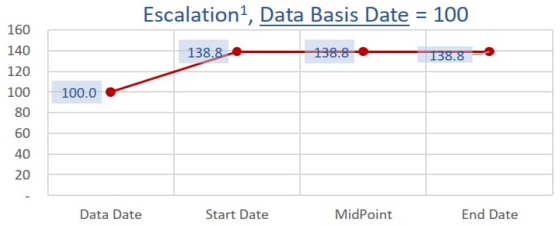
	Index	Amount
Base Estimate, Q1 2010	100	$ 4,846,000
Update Estimate, Q4 2023	138.8	$ 6,726,248

Cost Estimating - Escalation Forecasting

Jacobs

Escalation report prepared:	12/7/2023
Escalation Model Used:	Custom - *Electrical Contractor*
Project:	LJIIA Comparison

Event	Date
Data Date	1/1/2010
Start Date	12/7/2023
Mid Point	12/7/2023
End Date	12/7/2023
Value	**Calculation**
Escalation[1]	38.82%
Years[2]	13.9
Rate Per Annum[3]	2.38%



Notes:

1 - *Escalation begins with the Data Basis Date and assumes equal spending from Project Start to End Dates*

2 - *Years is the duration from the Data Basis (Estimate) Date to the Mid Point of the project*

3 - *Rate Per Annum is the average forecast annual rate of escalation which when compounded over Years, equal Escalation*

Forecasts are based on data provided by IHS Markit though 2023-Q3 with model weighting as given below:

5% - PPI324110AY2.Q.FOS - USA, PPI, Diesel Fuel

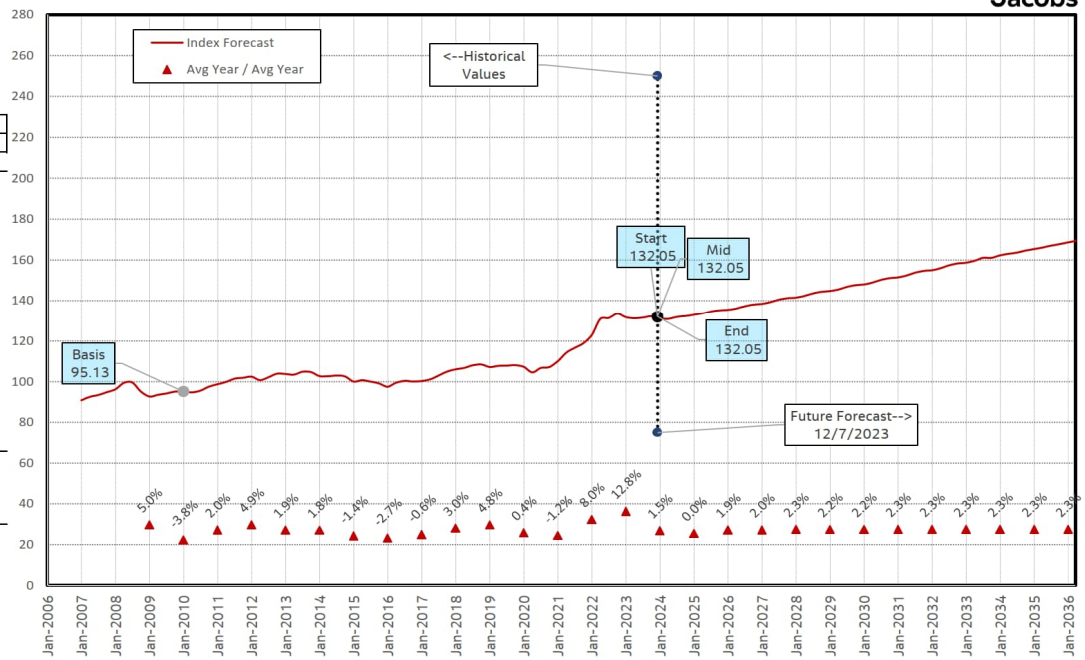
45% - PPI532412.Q.FOS - USA, PPI, Construction Equipment Rent

35% - CEU2000000008.Q.FOS - USA, Average Hourly Earnings, Construction

15% - PPIBNIS.Q.FOS - USA, PPI, Material Inputs to Industrial Structures

Escalation Forecast for LJIIA Comparison

Jacobs



Robert F Wells
Senior Cost Estimator

Education
Bachelor of Arts Management University of Phoenix 1995

Professional Registrations

Certified Estimating Professional, Association for the Advancement of Cost Engineering

Distinguishing Qualifications

Mr. Wells is a senior cost estimator with 33 years of experience, the last 13 of them with Jacobs (previously CH2M prior to acquisition). Prior to Jacobs he had worked 20 years for electrical contractors and specialy architectural in a variety of markets.

At Jacobs he works as an electrical and systems discipline estimator working within a team, or leading multidiscipline estimating teams from conceptual design through construction. His experience encompasses a broad range of construction markets, from transportation, water and wastewater treatment, military, and government facilities to commercial, manufacturing, nuclear facilities, as well as a broad range of roles in the construction industry including project manager, scheduler, site manager, safety manager, warehouse manager, among others. His specific competencies include risk analysis, cost modeling and simulation, relational database development, workflow development, estimate validations, change order analysis, claims preparation and avoidance, behavioral safety systems, and estimating cost data maintenance.

Relevant Experience / Project List

Electrical I&C Estimator; DOD, Al Minhad Airbase, Dubai, UAE; 2018. Provide preliminary design estimate for electrical replacement options. $10M

Senior Estimator; Lynwood L200/L300, SoundTransit; 2018. Electrical and Systems Independent Cost Estimate preparation. $1B.

Senior Estimator; LACMTA Crenshaw-LAX line; 2017-2019 (ongoing). Electrical and Systems Change Order Analysis and Independent Cost Estimate preparation. Base Project $1.2B. Worked on Fire Rated Cable change order including research and resolve a technical scope issue which has been adopted by LACMTA for future projects.

Senior Estimator; PG&E Transmission Project Delivery; 2017. Assisted client with database programming and performed Major Greenfield Project estimating, portfolio of $1-2B.

Electrical I&C Estimator; Honouliuli WWTP, City of Honolulu; 2017. Provide iterative design progress estimate for electrical and controls scope on WWTP remodel. $60M

Senior Estimator; Conceptual Estimate - Emergency Repair of Flooded Westpoint Wastewater Treatment Plant; King County, Washington; 2017. Performed initial estimate of cost to return to operation and cost to fully repair damages from wastewater ingress into plant. $50M

Lead Estimator; Bull Run UV Project, City of Portland; 2017. Update 2011 estimate to 2017 database, revise estimate to include several alternates. $80M

Lead Estimator; Kalaupapa National Park Service; NPS; 2017 - current. Performed estimating for NPS for repair, replace and improve overhead electrical distribution. $6M

Risk Analyst; Anchorage Port Modernization Project, 2017. Provide risk analysis for contingency validation engaging stakeholders and subject matter experts. $700M

Lead Estimator; Grace Hopper Data Center Electrical Distribution Improvements, 2017. Provide estimating for all disciplines from conceptual charrette through final design. $11M

Lead Estimator; Desert Wind Decommissioning Estimate, Avangrid, 2016. Provide estimate for decommissioning costs per client direction. $6M

Subject Matter Expert; Cost Estimating; FTA; GoTriangle; 2015 - current. Performed management oversight of grantee operations as regards cost estimating in compliance with FTA regulations. $2B project.

Lead Estimator; Tule Wind Decommissioning Estimate, Bureau of Land Management, 2016. Provide estimate for decommissioning costs per BLM circular. $6M

Electrical Estimator; T&D; City of Seattle, WA; Transmission Line #4 Relocation Project; 11-2016. Performed unit price estimate as a check estimate of approximately $8M

Lead Estimator; Port of Anchorage Expansion Project, 2011 – 2015. Provide estimating consulting services to stakeholders real-time during design options charrette. Perform risk analysis per USACE directives. $300M - $600M alternatives

Lead Estimator; General Engineering Contract; Honolulu High Capacity Rapid Transit Project; December 2013 to November 2014. Lead a staff of three estimators for ongoing budget and change order estimating. $6B

Electrical Estimator; Electrical and instrumentation estimate; Noman Cole Jr Waste Water Treatment Plant; MCC and DC Replacement; November 2012 to August 2014. Estimate MV primary loop, all new Substation and secondaries, MCC replacement and loads including I&C replacement from new PLCs to field. $50M.

Electrical Estimator; Electrical and systems; Sound Transit; South Corridor; 2013 Q3. Developed and priced electrical preliminary costs for traction power and systems.

Electrical Estimator; Electrical and systems; PHL Airport Task 1; May 2013 to May 2013. Developed and priced preliminary costs for airfield lighting and related work.

Electrical Estimator; Electrical and systems; PHL Airport Task 1; 2013 Q2. Developed and priced preliminary costs for airfield lighting and related work.

Electrical Estimator; Electrical telecom and systems; Port of Long Beach; January 2013 to February 2013. Developed costs for electrical, telecom and instrumentation.

Electrical Estimator; Electrical and instrumentation estimate; Confidential; Government Facility; 2013 Q1. Performed estimating within a team setting of approximately $5M.

Electrical Estimator; Electrical telecom and systems; Port of Long Beach; 2013 Q1. Developed costs for electrical, telecom and instrumentation.

Cost Estimator; HI DOT Harbors Division; Pier 31 Shed Demo; conceptual; 2012 Q4. Performed estimating of multidiscipline scope related to pier demolition and utility continuity of approximately $1M.

Electrical Estimator; Electrical and instrumentation estimate; West Point Water Treatment Plant; Control System Replacement (Liquids, Primaries, Secondaries, Control Rooms, Intermediate Pump Station, 30%, 60%, 90%, 100%, Change Order and On Call scope validation and pricing; July 2011 to October 2012 Q4. Lead estimating of multidiscipline (primarily electrical and instrumentation) of approximately $1.5M.

Wood River Terminal and Barge Dock, Hartford, IL; Electrical and instrumentation; 2012 Q3. Performed estimating of electrical and instrumentation scope including Value Engineering advisory. $10M

Electrical Estimator; Electrical and systems; Metrolinx, Toronto, CA; South Corridor; November 2011 to January 2012. Developed and priced preliminary design costs for traction power and systems; merged estimate data from differing systems to produce coherent report. $15B

Electrical Estimator; United States Postal Service NYC; Morgan PDC North Building Heating Water System Upgrade; 90% November 2012, 30% May 2011 to June 2011. Performed estimating within a team setting of approximately $1M.

Electrical Estimator; Electrical and instrumentation estimate; West Point Water Treatment Plant; Control System Replacement (Liquids, Primaries, Secondaries, Control Rooms, Intermediate Pump Station, 30%, 60%, 90%, 100%, Change Order and On Call scope validation and pricing; 2011 Q2 – 2012 Q4. Lead estimating of multidiscipline (primarily electrical and instrumentation) of approximately $1.5M.

System Analyst; Sage Timberline Implementation; CH2M HILL Plateau Remediation Company; 2011 Q1. Analyzed historical Sage Timberline estimates in support of estimating system implementation and database development. Produced MS Access database organizing and sorting several hundred millions in estimated and contracted costs.

Electrical Estimator; Electrical and communications utilities relocation estimate; Caltrans; SR-79 realignment; January 2010 to March 2010. Performed estimating within a team setting of approximately $6.5M.

Electrical Estimator; Electrical and communications utilities; Sound Transit; East Link Segment A; December 2009 to February 2010. Developed and priced electrical unit costs of approximately $400M.

Electrical Estimator; Electrical utilities relocation estimate; USAF; Mountain Home Air Force Base Circuit E&F; December 2009 to January 2010. Performed estimating within a team setting of approximately $1.2M.

Electrical Estimator; Electrical and instrumentation estimate; City of Norfolk, VA; 37th Street Water Treatment Plant Phase 2 Upgrade; 2010 Q1. Performed estimating within a team setting of approximately $2.3M.

Electrical Estimator; Electrical and instrumentation estimate; City of Spokane, WA; Riverside Park, Liquids Phase 2 Package A; 2010 Q1. Performed estimating within a team setting of approximately $600K.

Electrical Estimator; Electrical and instrumentation estimate; Clark County (NV) Water Reclamation District; Enterprise Water Resource Center Site Development #583; 2010 Q1. Performed estimating within a team setting of approximately $3M.

Electrical Estimator; Electrical and instrumentation estimate; Confidential; Reactor Manufacturing Facility; 2010 Q1. Performed estimating within a team setting of approximately $12M.

Electrical Estimator; Electrical and systems estimate; National Guard Bureau; ANG Headquarters, Andrews AFB, Security Upgrades, Building 3500 A Services; 2010 Q1. Performed estimating within a team setting of approximately $1.2M.

Electrical Estimator; Electrical and instrumentation estimate; Northeast Ohio Regional Sewer District; Southerly, Easterly, and Westerly Wastewater Treatment Primary Settling Tanks Rehabilitation; 2010 Q1. Performed estimating within a team setting of approximately $1.4M.

Electrical Estimator; Electrical and instrumentation estimate; Northeast Ohio Regional Sewer District; Southerly, Easterly, and Westerly Wastewater Treatment Plants Incinerator System Rehabilitation; 2010 Q1. Performed estimating within a team setting of approximately $1.7M.

Validation Estimator; Review of contractor's bid; Pima County, AZ; Ina Road; 2010 Q1. Validated and/or quality checked as an independent estimator, a project of approximately $20M.

Electrical Estimator; Electrical and instrumentation estimate; Upper Occoquan Service Authority, Centerville, VA; UOSA Contract No 4, Primary Clarifier, Odor Control and Hydraulic Improvements; 2010 Q1. Performed estimating within a team setting of approximately $1.5M.

Electrical Estimator; Civil and landscaping estimate for change order; USACE; Randolph AFB Barrier; 2010 Q1. Performed estimating within a team setting of approximately $450K.

Electrical Estimator; Electrical and instrumentation estimate; USACE; Dworshak Fish Hatchery NPDES Compliance; 2010 Q1. Performed estimating within a team setting of approximately $3M.

Cost Analysis; Cost Risk Analysis; USACE; Canaveral Port Authority Section 203 Feasibility Cost Estimate; 2010 Q1. Performed cost risk analysis for a project valued at approximately $40M.

Validation Estimator; QC on electrical estimate; USACE; Panama City ARC; 2010 Q1. Validated and/or quality checked as an independent estimator, a project of approximately $500K.

Electrical Estimator; Electrical and instrumentation estimate; USAF; Wright Patterson ITC; 2010 Q1. Performed estimating within a team setting of approximately $20M.

Electrical Estimator; Electrical and instrumentation estimate; King County; Brightwater ETDF; 2009 Q4. Performed estimating within a team setting of approximately $1.5M.

Electrical Estimator; Electrical and instrumentation estimate; Pima County, AZ; Ina Road Capacity and Effluent Quality Upgrade; 2009 Q4. Performed estimating within a team setting of approximately $25M.

Electrical Estimator; Electrical utilities relocation estimate; USAF; Mountain Home Air Force Base Circuit F; 2009 Q4. Performed estimating within a team setting of approximately $1M.

Electrical Estimator; Electrical utilities relocation estimate; USAF; Mountain Home Air Force Base Circuit E; 2009 Q4. Performed estimating within a team setting of approximately $200K.

Electrical Estimator; Electrical and instrumentation estimate; West Sound Utility District, WA; WSUD Microturbines; 2009 Q4. Performed estimating within a team setting of approximately $150K.

Electrical Estimator; Electrical and communications utilities; WDOT; I405; October 2009 to October 2009. Quantified and reconciled electrical scope units.

Electrical Estimator; Electrical and systems estimate; AFCEE; Andrew AFB Munitions Storage Area; October 2009 to October 2009. Performed estimating within a team setting of approximately $10M.

Electrical Estimator; Electrical and instrumentation estimate; USACE; Bonneville Wind and Solar Power; October 2009 to October 2009. Performed estimating within a team setting of approximately $50K.

Electrical Estimator; Electrical and instrumentation estimate; US Bureau of Reclamation; TCCA Fish Screen Upgrade; September 2009 to September 2009. Performed estimating within a team setting of approximately $1M.

Electrical Estimator; Electrical and instrumentation estimate; Buffalo Sewer Authority, NY; Buffalo Incinerator Upgrades; 2009 Q3. Performed estimating within a team setting of approximately $1.5M.

Electrical Estimator; Electrical and systems estimate; North Slope Borough Schools, AK; North Slope Borough School repairs; 2009 Q3. Performed estimating within a team setting of approximately 1.5M.

Validation Estimator; Review of contractor's estimate; Northeast Ohio Regional Sewer District; OPCC Southerly Wasterwater Treatment Substation Replacement; 2009 Q3. Validated and/or quality checked as an independent estimator, a project of approximately $24M.

Electrical Estimator; Electrical and instrumentation estimate; Oklahoma City Water Utilities Trust; Hefner WTP Lime System; 2009 Q3. Performed estimating within a team setting of approximately $400K.

Validation Estimator; Review of contractor's estimate; Seattle Public Utilities, WA; South Recycling & Disposal Station Design-Build Project; 2009 Q3. Validated and/or quality checked as an independent estimator, a project of approximately $4M.

Electrical Estimator; Electrical and instrumentation estimate; USAF; Mountain Home AFB Heater; 2009 Q3. Performed estimating within a team setting of approximately $200K.

Electrical Estimator; Electrical and instrumentation estimate; USACE & Eastern Municipal Utility District, CA; Perris II Desalinization; January 2009 to May 2009. Performed estimating within a team setting of approximately $3.5M.

Electrical Estimator; Electrical and communications utilities; VDOT; GEC; March 2009 to April 2009. Quantified and reconciled electrical scope units.

Electrical Estimator; Lightning Protection repair estimate; OSAN AFB; OSAN AFB Lightning Protection; 2009 Q2. Performed estimating within a team setting of approximately $1.2M.

Electrical Estimator; Electrical and instrumentation estimate; Portland Water Bureau, OR; Bull Run UV System; 2009 Q2. Performed estimating within a team setting of approximately $4M.

Electrical Estimator; Electrical and systems estimate; Texas ANG; Ellington AFB Fire Station; 2009 Q2. Performed estimating within a team setting of approximately $2M.

Electrical Estimator; Electrical and systems estimate; US Bureau of Reclamation; Grand Coulee Third Power Plant Material Storage Building; 2009 Q2. Performed estimating within a team setting of approximately $1M.

Electrical Estimator; Electrical and systems estimate; USACE; Lufkin AFRC; 2009 Q2. Performed estimating within a team setting of approximately $2.2M.

Electrical Estimator; Electrical and systems estimate; USACE; Huntsville AFRC; 2009 Q2. Performed estimating within a team setting of approximately $2M.

Electrical Estimator; Electrical and instrumentation estimate; USACE & Eastern Municipal Utility District, CA; Perris II Desalinization; 2009 Q2. Performed estimating within a team setting of approximately $3.5M.

Electrical Estimator; Electrical and instrumentation estimate; USAF; Mountain Home Air Force Base IR/Fan; 2009 Q2. Performed estimating within a team setting of approximately $1M.

Electrical Estimator; Instrumentation estimate; USAF; Malmstrom AFB SCADA upgrades; 2009 Q2. Performed estimating within a team setting of approximately $3M.

Electrical Estimator; Electrical and systems estimate; USAF; Mountain Home Air Force Base Occupancy Sensors; 2009 Q2. Performed estimating within a team setting of approximately $600K.

Electrical Estimator; Electrical utilities relocation estimate; Utah Copper; Magna Reservoir Power Pole relocation; 2009 Q2. Performed estimating within a team setting of approximately $330K.

Electrical Estimator; Electrical lighting estimate; AFCESA; Ellsworth Dormitory; 2009 Q1. Performed estimating within a team setting of approximately $1.6M.

Electrical Estimator; Electrical and instrumentation estimate; City of Honolulu, HI; Hauula Wells; 2009 Q1. Performed estimating within a team setting of approximately $700K.

Electrical Estimator; Electrical and instrumentation estimate; City of Pasco, WA; Pasco Westside WTP; 2009 Q1. Performed estimating within a team setting of approximately $500K.

Electrical Estimator; Electrical and instrumentation estimate; Hampton Roads Sanitation District; James River WWTP Improvements Project; 2009 Q1. Performed estimating within a team setting of approximately $6M

Electrical Estimator; Electrical and systems estimate; USACE; Ft. Custer AFRC; 2009 Q1. Performed estimating within a team setting of approximately $850K.

Electrical Estimator; Electrical utilities relocation estimate; USAF; Mountain Home Liberator Utility relocates; 2009 Q1. Performed estimating within a team setting of approximately $270K.

Electrical Estimator; Electrical and systems unit quantities; ANG 176th Wing; Elmendorff AFB AGE; 2008 Q4. Performed estimating within a team setting of approximately $2M.

Electrical Estimator; Electrical and instrumentation estimate; USACE; Bonneville Domestic Water Rehabilitation; 2008 Q4. Performed estimating within a team setting of approximately $450K.

Cost Risk Analysis; Port Canaveral BP Cherry Point Hydrocracker; Bellingham, Washington; February 2008 to April 2008. Led a team of estimators and project managers through the risk identification process using the client's risk protocols to deliver an estimate contingency adjustment in accordance with the client's selected level of confidence. Trained the team on the process, including developing the training manual and designing a model template.

Senior Project Manager; IKEA; Rosendin Electric, Inc.; Portland, Oregon; February 2007 to October 2007. Managed $3 million retail project. Responsible for creating a schedule recovery plan, estimating the cost of the plan, securing contractual authorization of the plan, and safeguarding both the client and contractor's interests in executing the plan. Estimated $1 million of additional changes to the project.

Senior Project Manager; ShinEtsu America; Rosendin Electric, Inc.; Vancouver, Washington; January 2007 to October 2007. Managed $1 million industrial high tech project. Responsible for estimating and design-build efforts on a variety of capital and maintenance projects.

Senior Project Manager; Confidential Client; Rosendin Electric, Inc.; Hillsboro, Oregon; October 2004 to January 2007. Managed industrial high tech projects totaling $60 million with a staff of 6 to 10. Responsible for devising and executing negotiation and reverse auction bid strategies. Challenged and repaired client's project modeling database resulting in $900,000 revenue gain. Participated in project portfolio resulting in first ever Client PQS (preferred quality supplier) award to a construction company. Designed behavioral safety programs to achieve project leading safety results. Implemented lean construction methods within organization. Member of Safety Leadership Team, Safety Committee, and Human Resources Initiative Team.

Senior Project Manager; Evergreen School District; Advanced Technology Group, Inc.; Vancouver, Washington; March 2004 to October 2004. Managed $1 million drywall and ceilings project.

Senior Project Manager; Confidential Client; Advanced Technology Group Inc; Hillsboro, Oregon; October 2000 to January 2004. Managed industrial high tech projects totaling $14 million with a staff of three. Implemented lean construction methods within department. Member of Safety Leadership Team and Steering Committee.

Project Manager/Estimator; Confidential Client; E C Company; Aloha, Oregon; October 1999 to August 2000. Bid and managed $8 million electrical installation.

Site Manager; Confidential Client; Rosendin Electric, Inc; Hillsboro, Oregon; July 1997 to October 1999. Managed $20 million electrical installation for industrial high tech project. Revised material logistics procedures to expedite materials and reduce or eliminate inventory searches.

Project Manager/Estimator; Confidential Client; Hughes Electric, Inc.; Rio Rancho, New Mexico; September 1993 to July 1997. Bid and managed industrial high tech projects totaling $25 million. Created purchasing database to streamline and technologically advantage repetitive material procurement processes. Created time-tracking database to capture historical data for use in estimating future projects. Performed design-build services for temporary power installations across the campus. Progressively grew site specialty project share from 5 percent to more than 50 percent.

Estimator; Multiple Facilities/Projects; Burns Electric Co Inc; Syracuse, New York; June 1990 to September 1993. Managed all hardware and software related to estimating department. Researched market segments and returns on segments to prioritize and optimize estimating resources. Selected and qualified projects for estimating. Notable projects include:
Nestle Tool Installation; $1 million food processing project; Fulton, New York
Onondaga Cogen; $2 million power generation project; Solvay, New York
Central New York Alzheimer's Unit; $1 million residential health care project; New York
Syracuse Airport; $1 million airport security projects; Syracuse, New York
Oncenter; $6 million convention center project; Syracuse, New York
Oncenter Garage; $1 million parking garage project; Syracuse, New York
Harrison Garage; $1 million parking garage project; Syracuse, New York
Estimator/Manager; Dobkin & Gold Electric Co Inc; Buffalo, New York; September 1987 to June 1990. Managed all hardware and software related to estimating department. Managed warehouse and material inventories. Performed all purchasing functions.

Industrial Mechanic and Retail Sales; Buffalo, New York; Prior to 1987.

Organizations and Affiliations

- AACE
- Lean Construction Institute
- CMAA Construction Management Association of America
- Toastmasters International

Publications and Presentations

· Wells, Robert F. 2010. Systemic Risk Management Using Lean Construction Methods. Atlanta. AACEI Transactions.

Honors and Awards

· Humanitarian Award, Advanced Technology Group, Inc., 2002

Attachment 11
Avian Risk Assessment

ENVIRONMENTAL & STATISTICAL CONSULTANTS
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TECHNICAL MEMORANDUM

Date: November 9, 2023

To: Marcy Patrick, Permit Manager, Avangrid Renewables, LLC

From: Todd Mabee and Daniel Riser-Espinoza, Western EcoSystems Technology, Inc.

Subject: Avian Collision Risk Assessment for the Leaning Juniper IIA Wind Repower Project, Gilliam County, Oregon

INTRODUCTION

Avangrid Renewables, LLC (Avangrid) contracted Western EcoSystems Technology, Inc. (WEST) to predict bird collision risk (i.e., % increase in fatalities/megawatt [MW]/year) at the Leaning Juniper IIA Wind Repower Project (Project) in Gilliam County, Oregon. The objective was to use the prediction to characterize bird risk in qualitative terms at the Project based on the anticipated uplift (increase in energy production) from the wind turbines proposed for repowering the Project (Table 1).

Table 1. Existing and proposed repowering specifications for the Leaning Juniper IIA Wind Project, Gilliam County, Oregon.

Project	# of Turbines	Turbine Model	Turbine rating (MW)	Hub Height (m)	Max Tip Height (m)	Rotor Diameter (m)	Plant Capacity (MW)
Existing	43	Suzlon S88	2.1	79.0	125.0	88	90.3
Proposed	36	GE 2.5-116	2.5	80.1	138.1	116	98.4
	4	Suzlon S88	2.1	79.0	123.0	88	

MW = megawatt(s); m = meter(s); GE = General Electric.

METHODS

Characterizing bird collision risk at the Project was done by 1) reviewing baseline and operational post-construction fatality monitoring (PCFM) information available from the Project; 2) incorporating the anticipated uplift (increase in energy production) from repowered turbines in the revised fatality estimate; 3) querying WEST's Renew database to contextualize fatality estimates from larger spatial scales in the region; and 4) describing the predicted risk in qualitative terms.

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Project-specific fatality studies included PCFM data collected during 2011 – 2013 (Downes et al. 2013). Although estimates using the Shoenfeld (Shoenfeld 2004) and Huso (Huso 2011) estimators were presented in the study report, the Huso estimate was chosen for use in this assessment because it has been shown to be relatively unbiased in multiple simulation studies (Huso 2011, Rabie et al. 2021). Operational wildlife monitoring for bird fatalities has been conducted at the Project since 2012 and it provides a list of avian species that have been found as fatalities at the Project.

The anticipated uplift value provided by Avangrid (confidential) was used to calculate the repowered fatality prediction, informed by a study of repowering and its effects on wildlife mortality at wind energy facilities (Huso et al. 2021). The repowered fatality prediction was produced by scaling up the existing estimate of total fatalities per year using information on the projected uplift and standardizing on a per MW nameplate capacity at the Project.

The Renew database contains information on over 600 PCFM studies across the US (WEST 2023). Fatality estimates for all birds were summarized at multiple spatial scales including state (Oregon), bird conservation region (BCR; BCR 9, Great Basin), US Fish and Wildlife Service (USFWS) region (Region 1, Pacific Region), and US Environmental Protection Agency (USEPA) ecoregion (Level III Columbia Plateau Ecoregion) to provide a landscape-scale context (Figure 1). Spatial scales were selected to contextualize Project fatality estimates by representing areas that were relevant biologically (e.g., BCR and USEPA ecoregion) or administratively (e.g., state and USFWS region). Fatality studies were screened to provide “comparable” information across wind energy facilities (WEFs) by including annual fatality estimates that 1) were calculated from turbines greater than 0.5 MW; 2) were calculated from the Huso, Shoenfeld, or GenEst estimators, which provide estimates suitable for comparisons at various spatial scales; 3) covered adequate sampling time for taxa of interest when most fatalities have been observed (i.e., at least three seasons for birds); and 4) were averaged for each WEF when multiple fatality studies were conducted at a facility. Various metrics (e.g., range, median, mean, sample sizes of facilities and PCFM studies) were produced to characterize the patterns in avian fatality estimates across the different spatial scales.

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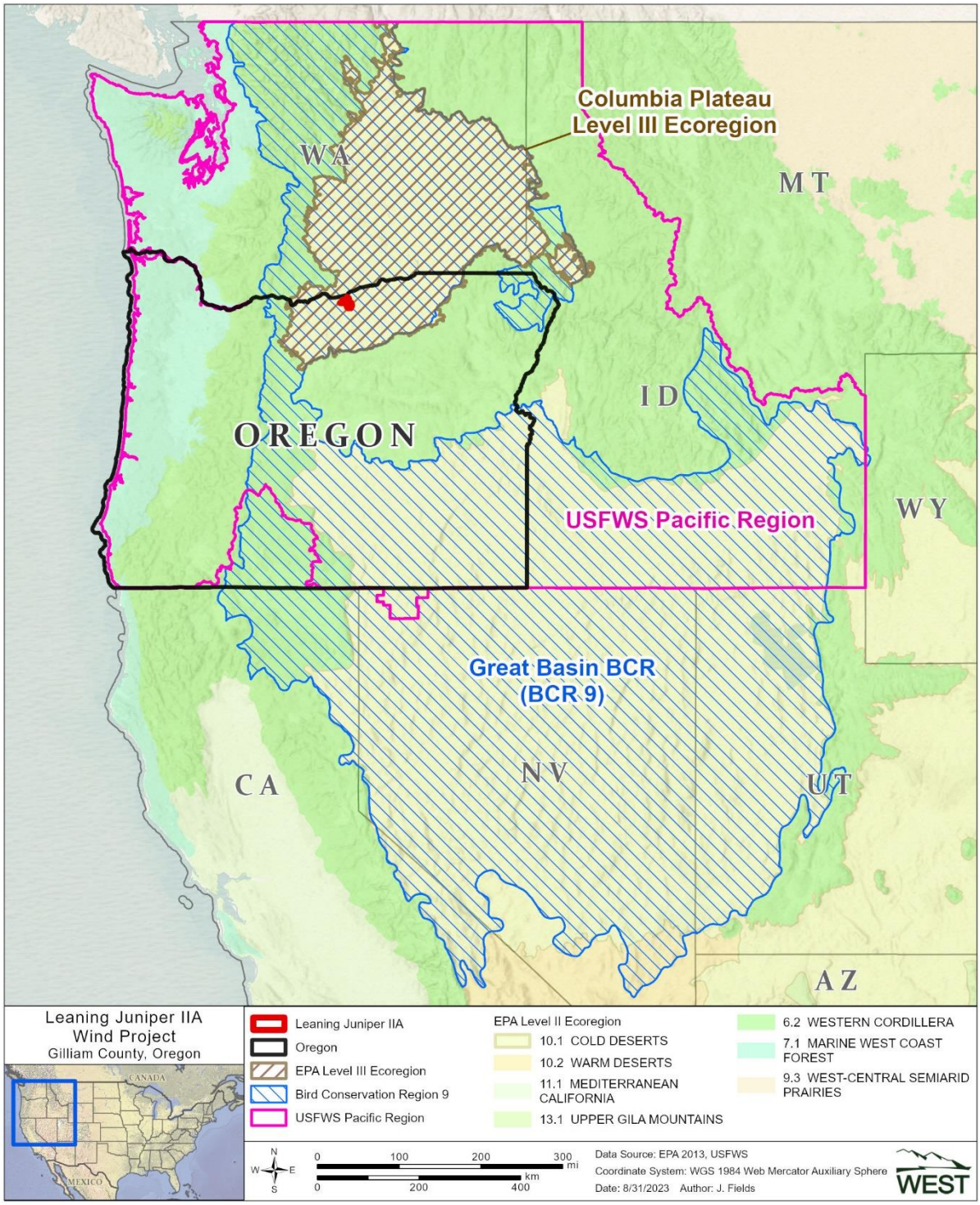

Figure 1. Location of the Leaning Juniper IIA Wind Project, Gilliam County, Oregon, in relationship to spatial scales of interest.

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RESULTS

The all bird Huso fatality estimate from studies at the Project was 1.03 fatalities/MW/year during 2011 – 2013 (Downes et al. 2013). Using the anticipated uplift value (confidential), the repowered fatality estimate for the Project is within the range documented at other wind generation facilities in the region (Table 2). In addition, as provided in Exhibit P to the Oregon Department of Energy (ODOE) in 2006 during initial Energy Facility Siting Council (EFSC) permitting for the Project, all-bird fatality estimates for Leaning Juniper IIA (previously Leaning Juniper II North) were conservatively estimated to be 1 to 4 birds/MW/year (Leaning Juniper Wind Power II 2006). The all bird estimate from studies at the Project during operations are shown to be within this range, and the repowered fatality estimate for the Project is also expected to remain within the estimated range of 1 to 4 birds/MW/year and is not expected to exceed thresholds established in Exhibit P.

Operational wildlife monitoring at the Project reported no federal or state-listed species. Eight avian fatalities were recorded, including: 4 common raven (*Corvus corax*), 2 horned lark (*Eremophila alpestris*), 1 European starling (*Sturnus vulgaris*), and 1 Swainson's hawk (*Buteo swainsoni*), a raptor species of special concern per the Leaning Juniper IIA Wildlife Monitoring and Mitigation Plan (WMMP).

Table 2. Summary of fatality estimates (bird fatalities/megawatt/year) from the Renew database at various regional scales around the Leaning Juniper IIA Wind Project, Gilliam County, Oregon.

Region	Minimum	Maximum	Median	Mean	Standard Error	Number of Facilities	Number of Studies
Oregon	0.36	7.61	2.33	2.60	0.53	12	17
USEPA L3 Ecoregion (Columbia Plateau)	0.36	8.45	2.60	2.95	0.44	22	30
BCR 9 (Great Basin)	0.36	8.45	2.52	2.84	0.42	24	33
USFWS Region 1	0.36	8.45	2.52	2.87	0.41	24	33

USEPA = US Environmental Protection Agency; L3 = Level III; BCR = Bird Conservation Region; USFWS = US Fish and Wildlife Service.

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DISCUSSION

The repowered fatality prediction for the Project is within the minimum and maximum avian fatality estimates and less than the mean and median estimates across all spatial scales examined in this report, including Oregon, Columbia Plateau Level III Ecoregion, Great Basin BCR, and USFWS Pacific Region. The repowered fatality prediction at the Project, therefore, is similar to the existing fatality estimate at the Project.

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LITERATURE CITED

Downes, S., B. Gritski, and S. Woods. 2013. Leaning Juniper Ii Wind Power Facility Wildlife Fatality Monitoring Study: January 2011–July 2013. Prepared for Leaning Juniper Wind Power II, LLC, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon. November 27, 2013.

Huso, M. 2011. An Estimator of Wildlife Fatality from Observed Carcasses. Environmetrics 22(3): 318-329. doi: 10.1002/env.1052.

Huso, M., T. Conkling, D. Dalthorp, M. Davis, H. Smith, A. Fesnock, and T. Katzner. 2021. Relative Energy Production Determines Effect of Repowering on Wildlife Mortality at Wind Energy Facilities. Journal of Applied Ecology 58: 1284–1290. doi: 10.1111/1365-2664.13853.

Leaning Juniper Wind Power II, LLC (Leaning Juniper). 2006. Exhibit P: Fish and Wildlife Habitats and Species. Application for a Site Certificate. OAR 345-021-0010(1)(p). Prepared for Oregon Department of Energy, Salem, Oregon. Prepared by Leaning Juniper. September 28, 2006.

North American Bird Conservation Initiative (NABCI). 2021. Bird Conservation Region 9 -- Great Basin. NABCI, Washington, D. C. Accessed August 2023. Available online: https://nabci-us.org/resources/bird-conservation-regions-map/#bcr9

Rabie, P. A., D. Riser-Espinoza, J. Studyvin, D. Dalthorp, and M. Huso. 2021. AWWI Technical Report: Performance of the GenEst Mortality Estimator Compared to The Huso and Shoenfeld Estimators. Washington, DC. Available at www.awwi.org. © 2020 American Wind Wildlife Institute.

Shoenfeld, P. 2004. Suggestions Regarding Avian Mortality Extrapolation. Technical memo provided toFPL Energy. West Virginia Highlands Conservancy, HC70, Box 553, Davis, West Virginia, 26260.Available online at: https://www.nationalwind.org/wp-content/uploads/2013/05/Shoenfeld-2004- Suggestions-Regarding-Avian-Mortality-Extrapolation.pdf

US Environmental Protection Agency (USEPA). 2013. Level III and Level IV Ecoregions of the Continental United States. Ecosystems Research, USEPA. April 16, 2013. Accessed August 2023. Available online: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states

Western EcoSystems Technology, Inc. (WEST). 2023. Regional Summaries of Wildlife Fatalities at Wind Facilities in the United States and Canada: 2022 Report from the Renew Database. WEST, Cheyenne, Wyoming. July 1, 2023. Available online: https://connect.west-inc.com/Renew/RenewReport2022.html

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Attachment 12
Fatality Monitoring Plan

Leaning Juniper IIA Wind Power Facility
Repower Fatality Monitoring Plan

Prepared for
Leaning Juniper Wind Power II, LLC

Prepared by

December 2023

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1.0 Introduction

Leaning Juniper IIA Wind Power Facility (Facility) is an operational wind power facility with 43 turbines and a maximum generating capacity of 90.3 megawatts (MW) located within a site boundary of approximately 6,404 acres in Gilliam County, Oregon. The Facility's approved Wildlife Monitoring and Mitigation Plan (WMMP) includes a fatality monitoring program and grassland bird study that were completed in 2013 and 2014, respectively (Downes et al. 2013; Downes and Gritski 2014). The approved WMMP also includes the following ongoing components: raptor nesting surveys, Washington ground squirrel (*Urocitellus washingtoni*) surveys, and a Wildlife Monitoring and Reporting System (State of Oregon 2013). Leaning Juniper Wind Power II, LLC (Certificate Holder) is seeking a third amendment to the Facility Site Certificate to repower 36 of the Facility turbines and decommission 3 turbines which will result in 40 operational turbines. The Oregon Department of Energy (ODOE) requested that, as part of Request for Amendment 3, the Certificate Holder develop a fatality monitoring plan as an attachment to the approved WMMP that includes one year of post-construction fatality monitoring of the repowered turbines according to current methodological and analytical approaches. Therefore, this Repower Fatality Monitoring Plan (Plan) describes the proposed fatality monitoring program for the repower while leaving unchanged the ongoing monitoring associated with the approved WMMP.

This Plan has the following components:

1) Post-repowering avian and bat fatality monitoring program including:
    - Standardized carcass searches;
    - Carcass persistence trials;
    - Searcher efficiency trials; and
    - Data analysis and fatality estimation.

Based on the results of the monitoring program, mitigation of significant impacts may be required. The selection of the mitigation actions should allow for flexibility in creating appropriate responses to monitoring results that cannot be known in advance. If ODOE determines that mitigation is needed, the Certificate Holder will propose appropriate mitigation actions to ODOE and will carry out mitigation actions approved by ODOE, subject to review by the Energy Facility Siting Council (EFSC).

2.0 Fatality Monitoring

The objective of fatality monitoring is to estimate the number of bird and bat fatalities that are attributable to Facility operation. The Certificate Holder will employ qualified and properly trained personnel (investigators) to perform fatality monitoring. The program will include standardized carcass searches to detect fatalities, methods to adjust for sources of bias inherent in fatality detection, and the estimation of annual fatality rates attributable to facility operation based on

these data. Sources of bias will be measured through (1) carcass persistence trials to estimate the mean length of time that a carcass persists and is available for detection; (2) searcher efficiency trials to estimate the proportion of carcasses detected by investigators; and (3) estimation of the portion of the carcass fall distribution searched. Methods and results of all components of the fatality monitoring program will be reported to ODOE following the full year of monitoring. If an investigator determines that a carcass found at the Facility (during searches or incidentally) is a state or federally threatened or endangered species, reporting timelines specified in the WMMP will be followed.

2.1 Standardized Carcass Searches

The objective of standardized carcass searches is to systematically search around Facility turbines for one year for bird and bat fatalities that occur in proximity to Facility infrastructure. As bias parameters (e.g., low searcher efficiency) can introduce uncertainty into fatality estimates making evaluation against fatality thresholds (Section 2.6) ambiguous, this fatality monitoring plan uses transect plots and large bird scans to reduce uncertainty.

2.1.1 Search Plot Size and Configuration

This fatality monitoring effort focuses on three size classes of fatalities: bats, small birds, and large birds. Turbine-related fatalities are distributed non-uniformly around a turbine (fall distribution). As a result, carcass density is not the same at all distances from a turbine, but typically rises over a short distance and eventually decreases to zero (Huso et al. 2016; Dalthorp 2020). The fall distribution depends on a number of factors including species' size and body mass (e.g., larger, heavier carcasses tend to land farther from turbines than lighter carcasses; Hull and Muir 2010; Huso et al. 2016; Choi et al. 2020), the maximum blade tip height of a turbine, and operational speed of the turbine. Therefore, search plot size and configuration selected for standardized carcass searches is intended to minimize bias in fatality estimation by maximizing (1) the spatial coverage of Facility turbines, (2) the visibility of smaller carcasses (Good et al. 2012; Maurer 2017), and (3) the proportion of the fall distribution searched for large birds (Hull and Muir 2010; Hallingstad et al. 2018).

Two plot types will be surveyed including transect plots and large bird scan plots. Transect sampling plots will allow for detection of the three size classes and will include a circular plot centered on the turbine with a radius of 100 meters extending from the turbine. The entirety of this radius will be searched using transects that will be spaced at 6-meter intervals to ensure full coverage of the plot. Transect plots will be utilized at 12 of the 40 (30%) available turbines across the Facility.

Large bird scan plots will be completed at all 40 turbines and will focus on detecting large birds out to 120 meters from the turbine. At a scan plot, an observer will use binoculars to scan the landscape out to 120 meters for large birds. The effectiveness of large bird scans can vary based on vegetation conditions, and areas that are not visible due to topographic limits or vegetation will be delineated as unsearchable.

2.1.2 Search Schedule and Interval

Fatality monitoring will begin just prior to the start of the first full season following the Facility repower. Fatality monitoring will commence with a "clearance search." The clearance search serves to identify fatalities that occurred prior to the initiation of the fatality monitoring program and for which the time period of occurrence cannot be assigned (see Section 3.4). After the initial clearance search, standardized carcass searches will begin the first week of the first full season following completion of the repower.

Fatality estimates are sensitive to carcass persistence time (see Section 2.2) and search intervals that are shorter than average persistence can introduce uncertainty into fatality estimates. Thus, the carcass searches will be completed weekly at transect plots during the spring, summer and fall seasons to capture migration and breeding seasons of birds and bats and every 14 days in winter. Large bird scans will be completed every 14 days in all seasons. Study attributes are provided in Table 1.

Table 1. Search Methods For Fatality Monitoring at the Facility

Season	Search Method	Search Interval	Target Taxa	Number of Turbines	Rationale
Spring: March 16 to May 31 Summer: June 1 to August 15 Fall: August 16 to November 15	Transect Plots	7 days	Bats, small birds	12	30% of turbines searched to 100-meter (m) search plot with transects to capture high proportion of small bird and bat carcass distribution
	Large Bird Scans	14 days	Large birds	40	100% of available turbines searched to capture a high proportion of carcass distribution searched Facility-wide.
Winter November 16 to March 15	Transect Plots	14 days	Bats, small birds	12	30% of turbines searched to 100-m search plot with transects to capture high proportion of small bird and bat carcass distribution
	Large Bird Scans	14 days	Large birds	40	100% of available turbines searched to capture a high proportion of carcass distribution searched Facility-wide

2.1.3 Search Strategy and Fatality Documentation

Searches in transect plots will involve walking transects within the 100-meter search radius centered on the turbine, with transects spaced at 6-meter intervals to ensure full search coverage of the entire search radius. Areas within the transect plot that cannot be searched will be mapped as unsearchable areas (Hallingstad et al. 2018). Examples of unsearchable areas may include a wetland, cliff face, high fence, private property boundary, or any area that precludes a searcher from safely conducting their search.

Large bird scans will involve binocular scans made from the turbine base and one to three topographical high points within the search plot. From the turbine base, the investigators will scan 90 degrees from each of the four cardinal directions out to the extent of the 120-meter circular search plot. Additionally, to address any portions of the large bird plot that are not visible from the base of the turbine due to topographical or other features, investigators will walk out to points in the plot where those areas become visible. Areas within the search plot that cannot be searched will be mapped as unsearchable areas (Hallingstad et al. 2018). Examples of unsearchable areas may include a wetland, cliff face, high fence, tall or dense vegetation, private property boundary, or any area that precludes visibility through the binocular scan method. Searchable areas and time spent scanning may be adjusted for habitat types and search methods after evaluation of the first searcher efficiency trial (see Section 2.3).

Investigators will flag all bird and bat carcasses discovered. Carcasses are defined as a complete carcass or body part, three or more primary flight feathers, five or more tail feathers, or 10 or more feathers of any type concentrated together in an area 3 meters square or smaller. When parts of carcasses and feathers from the same species are found within a search plot, investigators will make note of the relative positions and assess whether these are from the same fatality.

All carcasses (bird and bat) found during the standardized carcass searches will be photographed, recorded, and labeled with a unique number. Investigators will record the location of the carcass using a global positioning system (GPS)-enabled device. Data collected per carcass found will include the date; the turbine number; the distance from and bearing from the nearest turbine; the species, age, and sex of the carcass when possible; the extent to which the carcass is intact; the estimated time since death; the habitat in which the carcass was found; whether the carcass was collected or left in place; and whether the carcass was found during a standardized carcass search or incidentally. Additional measurements may be required to identify the species of bat carcasses. Investigators will describe all evidence that might assist in determination of cause of death, such as evidence of electrocution, vehicular strike, wire strike, predation, or disease. If the necessary collection permits are not acquired by the Certificate Holder, all carcasses will be discreetly marked so as to avoid double counting and will be left in place.

2.1.4 Duration

The investigators will perform one full year of fatality monitoring starting in the first year of Facility repower operation. When the year of monitoring at the Facility has been completed, the raw data will be compiled by the investigators and the Certificate Holder in a comprehensive report, which will include fatality estimates. The results will be compared with other wind energy facilities in the region. If fatality rates for the first year of monitoring at the Facility exceed any of the thresholds of concern (see Section 2.6) or the range of fatality rates found at other wind power facilities in the region (as available), the Certificate Holder will consult with ODOE and the Oregon Department of Fish and Wildlife (ODFW) regarding potential mitigation. If mitigation is deemed appropriate, the Certificate Holder will propose appropriate mitigation for ODOE and ODFW review within 6 months after reporting the fatality rates to the ODOE.

2.2 Carcass Persistence Trials

Carcass persistence is defined as probability that a carcass will persist in the study area for a given amount of time (e.g., until the next survey), and accounts for carcass removal bias. Carcasses may be removed from the survey plot due to scavenging or other means (e.g., decomposition, farming practices). Carcass persistence is measured by the number of days a carcass remains within the search plot before it is no longer detectable by an investigator within a given search interval. It is assumed that carcass removal occurs at a constant rate and does not depend on the time since death of the organism. The objective of carcass persistence trials is to estimate the length of time bird and bat carcasses remain within the search area and available to be detected by investigators. Estimates of carcass persistence will be used to adjust raw carcass counts for removal bias.

The investigators will conduct a carcass persistence trial within each season during a fatality monitoring year. A minimum of 10 each of large bird, small bird, and bat surrogate trial carcasses will be placed each season. The investigators will select species with the same coloration and size attributes as species expected to occur at or near the Facility, if possible. Trial carcass species may include legally obtained domestic species (e.g., ring-necked pheasants, juvenile Japanese quail), unprotected species (e.g., European starling, house sparrows) and dark mice as a surrogate for bats. If a fresh raptor carcass is discovered, it may be used as an "opportunistic" large bird carcass persistence trial carcass, checked on a similar schedule. Such an opportunistic trial would be included with the seasonal assessment in which it was found.

Trial carcasses will be marked discreetly for recognition by investigators and other personnel. Carcasses will be placed at randomly generated locations within the search plots. Small birds and bat surrogates will be placed within transect plots and large bird carcasses will be placed within the large bird scan plots on day 0 of the trial. To minimize overseeding the site with carcasses available to scavengers or creating an unnatural attractant to potential scavengers, the Certificate Holder will use the results from large bird carcasses placed within the large bird scan plots as correction for scavenging bias for all large bird fatalities detected, regardless of plot type. Additionally, efforts will be made to place carcasses using methods that do not visually alert wildlife to their placement.

Trial carcasses will be left in place until the end of the carcass persistence trial. An approximate schedule for assessing removal status is once daily for the first 4 days, and on days 7, 10, 14, 21, 28, and 35. This check schedule may be extended to include the possibility of longer persistence times after initial placement (e.g., 60 or 90 days) to capture potentially longer large bird persistence times. This check schedule may also be adjusted depending on actual carcass persistence rates, weather conditions, and coordination with the other survey work. The condition of scavenged carcasses will be documented during each assessment, and at the end of the trial all traces of the carcasses will be removed from the site. Scavenger or other activity could result in complete removal of all traces of a carcass in a location or distribution of feathers and carcass parts to several locations. This feather distribution will not constitute complete carcass removal if evidence of the carcass remains within an area similar in size to a search plot and if the evidence would be detectable to a searcher during a normal survey.

2.3 Searcher Efficiency Trials

Searcher efficiency is defined as the probability that investigators will find a carcass that is available to be found within the search plot. Several factors influence searcher efficiency, including investigator experience, vegetation conditions within a search plot, and characteristics of individual carcasses (e.g., size, color). The objective of searcher efficiency trials is to estimate the percentage of bird and bat fatalities that investigators are able to find.

A trained Searcher Efficiency Proctor will conduct searcher efficiency trials within each of the seasons for each method used. A minimum of 12 each of large bird, small bird, and bat surrogate trial carcasses will be placed in the spring, summer, and fall seasons within the transect plots. In winter, when bat fatalities are not anticipated, a minimum of 12 each of large bird and small bird carcasses will be placed in transect plots. A minimum of 12 large bird trials will be placed within three distance bins per season at large bird scan plots (i.e., 0–40 meters, 40–80 meters, 80–120 meters) to account for possible distance effects on searcher efficiency. Although trials will be conducted across seasons, data will be pooled so that there are 16 trials per distance bin.

Investigators will not be notified of carcass placement or test dates. The Searcher Efficiency Proctor will vary the number of trials per season to capture seasonal variation in site conditions that may affect the ability to detect fatalities, and the number of carcasses per trial so that the investigators will not know the total number of trial carcasses being used in any trial. Similar to carcass persistence trials, searcher efficiency trial carcass species may include legally obtained domestic species (e.g., ring-necked pheasants, juvenile Japanese quail), unprotected species (e.g., European starling, house sparrows), raptor carcasses (as necessary collection permits allow), feathered turkey decoys (Hallingstad et al. 2018), and dark mice as a surrogate for bats.

The Searcher Efficiency Proctor will mark the trial carcasses to differentiate them from other carcasses that might be found within the search plot and in a manner that does not increase carcass visibility. On the day of a standardized carcass search before the beginning of the search, the Searcher Efficiency Proctor will place trial carcasses at randomly generated locations within search plots (one to three trial carcasses per search plot). The number and location of trial carcasses found during the standardized carcass search will be recorded. The number of efficiency trial carcasses available for detection during each trial will be determined immediately after the trial by the Searcher Efficiency Proctor. Following the standardized carcass search, all traces of searcher efficiency trial carcasses will be removed from the site.

2.4 Incidental Finds and Injured Birds

Incidental finds are carcasses that are detected outside the parameters of standardized carcass searches. Investigators may discover carcasses in areas surrounding the turbines but outside of the plots, while completing carcass persistence checks, or while moving through the Facility. Additionally, carcasses detected during clearance surveys do not have an associated timeframe for fatality occurrence and therefore are considered incidental finds. For each incidental find, the searcher will identify, photograph, record data, and collect the carcass as would be done for carcasses detected during standardized carcass searches. If the incidental find is located in a search

plot within a reasonable timeframe from when that plot was to be searched (e.g., while placing searcher efficiency carcasses on the same day as the search), the fatality data will be included in the calculation of fatality rates. If the incidental find is found outside a formal search plot or search time, the data will be reported separately and excluded from statistical analysis.

The Certificate Holder will contact a qualified rehabilitation specialist approved by ODOE[1] to respond to injured wildlife. The Certificate Holder will pay costs, if any, charged for time and expenses related to care and rehabilitation of injured native birds found on the site, unless the cause of injury is clearly demonstrated to be unrelated to the Facility operations.

2.5 Fatality Estimation

Estimated annual fatality rates for the Facility will be calculated at the end of the monitoring year. Annual fatality rates will be estimated by adjusting raw fatality counts for sources of bias including carcass persistence, searcher efficiency, and the proportion of the fall distribution that was searched for each size class (Huso and Dalthorp 2014).

A correction factor (density weighted proportion [DWP]) will be used to adjust for the proportion of the fall distribution that was searched for each size class within the transect plots and for large birds within the large bird scan plot. For both search plot types, the DWP will be calculated as the product of the percentage of a 10-meter annulus that is covered by the searched area within the plot and the proportion of the fall distribution of a given size class that overlaps that 10-meter annulus. The product of these values for each 10-meter annulus that overlaps the search plot will be summed to calculate the overall proportion of the fall distribution searched for each size class within the respective search plot type. Calculations will utilize ballistic modeling results presented in Hull and Muir (2010) for small birds and bats, and Hallingstad et al. (2018) for large birds. Other peer-reviewed models that update the state of the science may be utilized if they become available within the duration of the monitoring period.

Annual fatality rates will be estimated for nine categories, provided a sufficient sample size has been reached to allow estimation. The nine categories are:

1. All birds;
2. Small birds;
3. Large birds;
4. All bats;
5. Migratory tree-dwelling bats;
6. Raptors;
7. Raptor species of special concern;

[1] Approved specialists include of Blue Mountain Wildlife, a wildlife rehabilitation center in Pendleton, and the Audubon Wildlife Care Center in Portland. The Certificate Holder must obtain ODOE approval before using other specialists.

8. Grassland species; and
9. State and federally listed threatened and endangered species and State Sensitive Species listed under Oregon Administrative Rules (OAR) 635-100-0040.

The fatality estimator program, GenEst (Dalthorp et al. 2018), will be used to estimate annual fatality rates. GenEst provides the most current state-of-the-science software for fatality estimation by minimizing biases and allowing users to select the most appropriate methods and assumptions for project-specific circumstances. Rigorous testing of the performance of GenEst compared to other estimators using simulated data has shown GenEst to be the least biased, enabling more precise fatality estimation and reliable comparison of fatality estimates among projects (Simonis et al. 2018). Additionally, with sufficient sample size, GenEst allows for fatality estimates to be split into subcategories, which allows for estimates to be parsed by parameters such as season, year, or turbine type.

The estimation of annual fatality rates will account for:

1. The search interval;
2. The number of carcasses detected during standardized carcass searches within the monitoring period where the cause of death is assumed to be the operation of the Facility;
3. Carcass persistence expressed as the probability that a carcass remains in the study area (persists) and is available for detection by the investigators during persistence trials;
4. Searcher efficiency expressed as the probability that a trial carcass is found by investigators during searcher efficiency trials; and
5. The portion of the fall distribution that was searched at the Facility (DWP) for the given size class and search plot type.

2.6 Mitigation

The Certificate Holder will use best available science to resolve any uncertainty in the fatality monitoring results and to determine whether the results indicate that additional mitigation should be considered. ODOE may require additional, targeted monitoring if the data indicate the potential for significant impacts that cannot be addressed by analysis and appropriate mitigation.

Mitigation may be appropriate if fatality rates exceed a “threshold of concern” (Table 2). For the purpose of determining whether a threshold has been exceeded, the Certificate Holder will determine the mean estimated annual fatality rate for species groups after the year of monitoring (provided three or more detections within any of the species groups listed in Table 2 are available to accurately determine estimates for these groups). Based on current knowledge of the species that are likely to use the habitat in the area of the Facility, the thresholds of concern established by EFSC (Table 2) will be used in conjunction with most current regional fatality rates published by the Renewable Energy Wildlife Institute (formerly the American Wind and Wildlife Institute) and/or other organizations (e.g., WEST 2021) to evaluate the fatality rates associated with the Facility and guide discussions on appropriate mitigation.

Table 2. Fatality Thresholds of Concern by Species Group

Species Group	Threshold of Concern[1] (Fatalities per MW)
Raptors[2] (All eagles, hawks, falcons and owls, including burrowing owls.)	0.09
Raptor species of special concern (Swainson's hawk, ferruginous hawk, peregrine falcon, golden eagle, bald eagle, burrowing owl.)	0.06
Grassland species (All native bird species that rely on grassland habitat and are either resident species occurring year-round or species that nest in the area, excluding horned lark, burrowing owl and northern harrier.)	0.59
State sensitive avian species listed under OAR 635-100-0040 (Excluding raptors listed above.)	0.20
Bats[3]	2.50

1. EFSC adopted the concept of "thresholds of concern" for raptors, grassland species, and state sensitive avian species in the Final Order on the Application for the Klondike III Wind Project (June 30, 2006) and for bats in the Final Order on the Application for the Biglow Canyon Wind Farm (June 30, 2006). The exceeding of a threshold, by itself, would not be a scientific indicator that operation of the Facility would result in range-wide population-level declines of any of the species affected.
2. Regionally, the median fatality rate for all raptors in the Northern Rockies avifaunal biome (includes eastern Oregon; 25 studies) was 0.06 birds/MW/year (AWWI 2020a). 75 percent of studies in the Northern Rockies reporting raptor estimates reported approximately 0.12 birds/MW/year.
3. Regionally, the median fatality rate for all bats in the USFWS Pacific Region (includes Oregon; 37 studies) was 0.69 bats/MW/year (AWWI 2020b). Seventy-five percent of studies in the Pacific Region reporting bat estimates reported approximately 1.88 bats/MW/year .

If the data from the year of monitoring show that a threshold of concern for a species group or individual state sensitive bird species has been exceeded, the Certificate Holder will consult with ODOE and ODFW to determine if mitigation is appropriate based on analysis of the data and consideration of any other significant information available at the time. ODFW, ODOE, and the Certificate Holder may review fatality data on a per turbine basis to aid in discussions. If mitigation is determined to be necessary, the Certificate Holder will propose mitigation measures designed to benefit the affected species or species group. ODOE may recommend additional, targeted data collection if the need for mitigation is unclear based on the information available at the time. If, following consultation and any such additional data collection, ODOE determines that mitigation is required, the Certificate Holder will propose mitigation measures designed to benefit the affected species or species group, commensurate with the level of impact.

Acceptable mitigation may include, but is not limited to, contributions to wildlife rehabilitators, conducting or making a contribution to research that will aid in understanding more about the affected species or species group and its conservation needs in the region, improving wildfire response, constructing and maintaining artificial nest structures for raptors, or habitat mitigation. Habitat mitigation may include, but is not limited to, protection of nesting, foraging, or roosting

habitat for the affected species or group of native species through a conservation easement or similar agreement. Tracts of land that are intact and functional for wildlife are preferable to degraded habitat areas. Preference should be given to protection of land that would otherwise be subject to development or use that would diminish the wildlife value of the land. In addition, habitat mitigation measures might include enhancement of the protected tract by weed removal and control; increasing the diversity of native grasses and forbs; and planting sagebrush or other shrubs. This may take into consideration whether the mitigation required or provided in other Facility plans would also benefit the affected species.

3.0 References

AWWI (American Wind Wildlife Institute). 2020a. AWWI Technical Report: 2nd Edition: Summary of Bird Fatality Monitoring Data Contained in AWWIC. Washington, DC. Accessed online at: http://www.https://rewi.org/resources/awwic-bird-technical-report/

AWWI. 2020b. AWWI Technical Report: 2nd Edition: A Summary of Bat Fatality Monitoring Data Contained in AWWIC. Washington, DC. Accessed online at: https://rewi.org/resources/awwic-bat-technical-report/

Choi, D.Y., T.W. Wittig, and B.M. Kluever. 2020. An evaluation of bird and bat mortality at wind turbines in the Northeastern United States. *PLoS ONE* 15(8): e0238034. https://doi.org/10.1371/journal.pone.0238034

Dalthorp, D.H., J. Simonis, L. Madsen, M.M. Huso, P. Rabie, J.M. Mintz, R. Wolpert, J. Studyvin, and F. Korner-Nievergelt. 2018. Generalized Mortality Estimator (GenEst) - R code & GUI: U.S. Geological Survey Software Release. Available online at: https://doi.org/10.5066/P9O9BATL

Dalthorp, D. 2020. GenEst – A Tutorial with Wind Examples. Available online at: https://cran.r-project.org/web/packages/GenEst/vignettes/wind-examples.html

Downes, S., B. Gritski, and S. Woods. 2013. Leaning Juniper II Wind Power Facility Wildlife Fatality Monitoring Study January 2011-July 2013. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon dated November 27, 2013.

Downes, S., and B. Gritski. 2014. Leaning Juniper II Wind Power Facility 2014 Wildlife Monitoring. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon dated October 6, 2014.

Good, R.E., A. Merrill, S. Simon, K. Murray, K. Bay. 2012. Bat Monitoring Studies at the Fowler Ridge Wind Farm, Benton County, Indiana. Final Report: April 1-October 31, 2011. Prepared for the Fowler Ridge Wind Farm, Fowler, Indiana. Prepared by Western Ecosystems Technology, Inc, Bloomington, Indiana.

Hallingstad, E.C., P. Rabie, A. Telander, J. Roppe, and L. Nagy. 2018. Developing an efficient protocol for monitoring eagle fatalities at wind energy facilities. *PLoS ONE* 13(12); e(0208700). http://doi.org/10.1371/journal.pone.0208700

Hull, C.L., and S. Muir. 2010. Search areas for monitoring bird and bat carcasses at wind farms using a Monte-Carlo model. *Australian Journal of Environmental Management* 17(2):77-87. https://doi.org/10.1080/14486563.2010.9725253

Huso, M., and D. Dalthorp. 2014. Accounting for Unsearched Areas in Estimating Wind Turbine-Caused Fatalities. *Journal of Wildlife Management* 78(2):374–358. DOI: 10.1002/jwmg.663

Huso, M., D. Dalthorp, T. J. Miller, and D. Bruns. 2016. Wind energy development: methods to assess bird and bat fatality rates post-construction. Human–Wildlife Interactions 10.

Maurer, Joseph D. 2017. Turbine Induced Bird and Bat Fatalities At Wind Projects: Statistical Methods for Mortality Estimation Using Road and Pad Carcass Surveys. Oregon State University. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/4m90f1916?locale=en

Simonis, J., D. Dalthorp, M. Huso, J. Mintz, L. Madsen, P. Rabie, and J. Studyvin. 2018. GenEst user guide—Software for a generalized estimator of mortality. U.S. Geological Survey Techniques and Methods, book 7, chap. C19. 72 p. Available online at: https://doi.org/10.3133/tm7C19

State of Oregon. 2013. Final Order on Request for Amendment 2 to the Site Certificate. p. 39. June 21.

WEST (Western EcoSystems Technology, Inc). 2021. Regional Summaries of Wildlife Fatalities at Wind Facilities in the United States and Canada. 2020 Report from the Renew Database. Published by WEST, Cheyenne, Wyoming. June 30, 2021.

Attachment 13
Draft Habitat Mitigation Plan

Draft Repower Habitat Mitigation Plan

Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Prepared for
Leaning Juniper Wind Power II, LLC

Prepared by

December 2023

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Figure 1. Repower Mitigation Area

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1.0 Introduction

Leaning Juniper IIA Wind Power Facility (Facility) is an operational wind power facility with 43 turbines and a maximum generating capacity of 90.3 megawatts (MW) located within a site boundary of approximately 6,404 acres in Gilliam County, Oregon. The Facility's approved Habitat Mitigation Plan (HMP) includes enhancement and monitoring of a 92-acre Habitat Mitigation Area (HMA) in Gilliam County, Oregon, that Leaning Juniper Wind Power II, LLC (Certificate Holder) has successfully implemented (MB&G 2023, State of Oregon 2013). The Certificate Holder is seeking a third amendment to the Facility Site Certificate to repower 36 of the Facility turbines and decommission 3 turbines, which will result in 40 operational turbines. The Oregon Department of Energy (ODOE) requested that, as part of Request for Amendment 3 (RFA3), the Certificate Holder identify enhancement actions at the existing HMA to mitigate for temporal loss of habitat during the Facility repower. Therefore, this Repower Habitat Mitigation Plan (Plan) describes the proposed enhancement actions to mitigate for the Facility repower habitat impacts, as well as proposed monitoring and success criteria, consistent with the Oregon Department of Fish and Wildlife (ODFW) Habitat Mitigation Policy (635-415-0025).

As described in Section 3.0, the 92-acre HMA provided mitigation for the original Facility construction in excess of the amount required due to a reduction in impacts during construction compared to estimated impacts during Facility permitting. This Plan identifies enhancement actions above and beyond the actions included in the original HMP required to mitigate for the original Facility impacts. These enhancement actions will provide additional habitat uplift within the HMA that would not otherwise be performed, ensuring the Facility repower is consistent with the ODFW Habitat Mitigation Policy.

2.0 Methods for Calculating the Mitigation Need

Proposed Facility repower impacts by habitat category are described in RFA3. The proposed changes to the Facility identified in RFA3 would not alter the previously approved site boundary or micrositing corridors. All repower disturbance would occur in a portion of the micrositing corridor designated by Certificate Holder as the "repower corridor." Areas of permanent impact from the repower are contained within areas of permanent impacts associated with the original Facility construction and operation. All areas of temporary disturbance are located in areas previously disturbed by the original Facility construction that have subsequently been revegetated (MB&G 2015). Consistent with the approved HMP for the Facility, this Plan proposes habitat mitigation for temporary impacts to habitat subtypes anticipated to take longer than 3 to 5 years to recover to account for temporal loss of habitat while these habitats recover following revegetation at the Facility. Only one habitat subtype will be disturbed during Facility repower that meets this criteria: SSA habitat (sagebrush-rabbitbrush-snakeweed/bunchgrass/annual grass). Approximately 54 acres of SSA habitat are anticipated to be temporarily disturbed during Facility repower, including

approximately 36 acres of Category 2 SSA and approximately 18 acres of Category 3 SSA. Applying a mitigation ratio of 0.5:1, consistent with the approved HMP, approximately 27 acres of mitigation are needed for Facility repower compliance with the ODFW Habitat Mitigation Policy (Table 1).

Table 1. Mitigation Calculation

Habitat Category and Subtype[1]	Temporary Impact (acres)	Mitigation Ratio	Mitigation Need (acres)
Category 2 SSA	36	0.5:1	18
Category 3 SSA	18	0.5:1	9
Total	**54**	**0.5:1**	**27**
1. Only impacted habitat subtypes that require mitigation are included here.			

3.0 Mitigation

The Certificate Holder's existing 92-acre HMA has been protected and enhanced to mitigate for the Facility's original construction habitat impacts, consistent with the ODFW Habitat Mitigation Policy and the approved HMP (MB&G 2023, State of Oregon 2013). Areas temporarily disturbed during original Facility construction had met or were trending towards meeting revegetation success criteria at the end of the 5-year revegetation monitoring period, indicating no additional mitigation is needed to compensate for revegetation failure (MB&G 2015).

Similarly, ongoing monitoring at the HMA has identified increases in native cover and diversity in the shrub-steppe and bunchgrass communities to the extent that the success criteria of the HMP are being met (MB&G 2023). Ongoing enhancement actions include grazing exclusion, weed control, and habitat protection. Although sagebrush and native bunchgrass recruitment have been successful, ongoing monitoring shows moderate cover of the invasive (but not noxious) annual grass cheatgrass (*Bromus tectorum*). Therefore, the Certificate Holder proposes to perform herbicide treatment for annual grasses followed by reseeding of native grasses and forbs, if necessary, on 27 acres within the HMA (i.e., repower mitigation area) with the goal of increasing native grass and forb percent cover and diversity. These proposed enhancements would be performed in addition to ongoing HMA enhancements (e.g., in addition to existing site-wide monitoring and treatment of Oregon Department of Agriculture–listed noxious weed species such as yellow starthistle [*Centaurea solstitialis*] and rush skeletonweed [*Chondrilla juncea*]).

As described in Section 5.0 below, monitoring of the repower mitigation area will be conducted in the summer following the herbicide treatment to determine if seeding of native plants is necessary based on any reestablishment of native plants observed in the treated area. If native plants are found not to be reestablishing, or cheatgrass remains abundant in treated areas, an additional round of herbicide treatment followed by seeding of native grasses and forbs will be conducted. Big sagebrush (*Artemisia tridentata*) is already regenerating at the HMA, so removing competing annual grasses has the potential to increase recruitment of young sagebrush plants. These

proposed enhancements are based on coordination with ODFW, review of the annual HMA monitoring reports, and a site visit conducted at the HMA in November 2023.

The Certificate Holder's implementation of additional enhancements (i.e., herbicide treatment and potentially seeding of native grasses and forbs) on 27 acres of the 92-acre HMA is sufficient to meet the Category 2 mitigation goal of "no net loss of habitat quantity or quality and to provide a net benefit of habitat quantity or quality" and the Category 3 mitigation goal of "no net loss of habitat quantity or quality."

Enhancement and conservation of the existing HMA were based on the anticipated impacts from original Facility construction. Actual construction impacts of the original Facility were reduced compared to the anticipated impacts such that 46 acres of mitigation would have been sufficient to meet the Facility's mitigation need (MB&G 2011). As a result, the 92-acre HMA that was implemented provided 46 acres of additional mitigation in excess of the amount required. Thus, the Certificate Holder provided double the mitigation needed to meet the ODFW Habitat Mitigation Policy for the original Facility. With implementation of additional enhancements on 27 acres of the 92-acre HMA, the Facility will continue to be consistent with the ODFW Habitat Mitigation Policy considering the temporary re-disturbance of habitat during repower activities. The final extent of the enhancement actions will be determined based on the actual habitat impacts during Facility repower.

4.0 Repower Mitigation Area Selection

As noted above, a site visit was conducted at the HMA in November 2023. During this site visit, 27 acres within the HMA were identified for treatment of cheatgrass and seeding of native grasses and forbs, if applicable. As shown on Figure 1, this repower mitigation area selected for treatment primarily encompasses areas mapped as the SSA habitat subtype. During the site visit, this habitat subtype was noted as containing higher cover of cheatgrass and lower cover of native perennial bunchgrasses than the adjacent GB (perennial bunchgrass) and SSC (Sandberg bluegrass-annual grass) habitat subtypes. However, areas of SSC and GB habitats were also included in the 27-acre repower mitigation area to assess the effectiveness of cheatgrass treatment in all three habitat subtypes within the HMA.

During the site visit, three locations for establishment of monitoring transects within the 27-acre repower mitigation area were also selected (Figure 1). In addition, two alternate monitoring locations were identified in case one of the selected monitoring locations is deemed unsatisfactory during pre-treatment baseline monitoring (see Section 5.0). Monitoring locations were selected in areas with high cover of cheatgrass to best monitor treatment success. Final selection of monitoring locations will be determined during pre-treatment baseline monitoring, with the goal of placing monitoring locations within representative sections of the repower mitigation area to capture the range of potential responses to treatment.

5.0 Monitoring and Treatment Schedule

The Certificate Holder will monitor the 27-acre repower mitigation area to document pre- and post-treatment conditions. This monitoring will document changes in species diversity and composition. Monitoring will be conducted by the Certificate Holder and the results of monitoring will be reported to ODFW and ODOE. Calendar years (e.g., 2025, 2026, etc.) are provided for the monitoring schedule along with treatment and monitoring years (e.g., Year 0, Year 1, etc.) for ease of reference, but the actual calendar years of implementation may be adjusted, if needed, based on the timing of habitat disturbance for the repower.

The monitoring and treatment schedule for the 27-acre repower mitigation area is as follows:

- Year 0 (e.g., 2025/2026):
    - Late spring/early summer 2025: document pre-treatment baseline conditions.
    - Fall 2025/early spring 2026: herbicide treatment. Timing of treatment will depend on herbicide being used for cheatgrass control and recommendations of herbicide applicator.
    - Continue ongoing annual monitoring of entire 92-acre HMA, including the 27-acre repower mitigation area.
- Year 1 (e.g., 2026/2027):
    - Late spring/early summer 2025: monitor post-treatment conditions to document annual grass response to herbicide treatment and determine native plant reestablishment and thus need for seeding.
    - Fall 2026/early spring 2027: additional herbicide treatment, as needed. Timing of treatment will depend on herbicide being used for cheatgrass control and recommendations of herbicide applicator.
    - Winter 2026/early spring 2027: seeding of native forbs and grasses, as needed.
    - Continue ongoing annual monitoring of entire 92-acre HMA, including treated 27-acre repower mitigation area.
- Year 2 and on (2027+): continue ongoing annual monitoring of 92-acre HMA including assessment of the general vegetation conditions through photo plots and a meandering pedestrian survey, including within the 27-acre repower mitigation area.

In addition to assessment of vegetation conditions through photo plots and a meandering pedestrian survey, monitoring in Year 0 and Year 1 in the 27-acre repower mitigation area will also include collecting quantitative data along three 50-meter-long monitoring transects within the 27 acres. Data collected will include vegetative composition and cover, as well as the percent cover of litter, biotic crust, and bare ground. The Daubenmire method (NRCS and BLM 1999) will be used to assess total vegetative cover and species composition and cover along each transect. A 0.5-meter by 0.5-meter quadrat will be placed every 5 meters along the transect, and the percent cover of each plant species within each quadrat will be recorded using Daubenmire cover classes. Cover classes within each quadrat will then be used to determine canopy cover of each species along the entire

transect. Transect monitoring will continue in Year 2 and on until the success criteria are met (see Section 6.0).

In addition to the cover of each species within the quadrat, the percent cover of bare soil, litter, and biotic crusts within each quadrat will be recorded. The collected data will be used to determine the percent cover of vegetation differentiated by life form (i.e., graminoid, forb, shrub) and nativity (i.e., native vs. non-native), which will be used to determine whether seeding is needed following herbicide treatment. Photographs will be taken at the end of each transect, and the compass bearing will be recorded for each photograph taken.

6.0 Success Criteria

Following initial Year 0 baseline monitoring as described in Section 5.0, the Certificate Holder will coordinate with ODFW to develop success criteria for the repower mitigation area. The mitigation will be considered successful and the Facility's mitigation obligations met when all treatments have been performed and documented in accordance with the methods described in this Plan and the established success criteria have been met. This mitigation, as proposed, will satisfy the ODFW Habitat Mitigation Policy Goals for temporal impacts to Category 2 and 3 habitat.

7.0 References

MB&G (Mason, Bruce & Girard, Inc.). 2011. 2011 Revegetation Monitoring Report. Leaning Juniper II Wind Power Project. Gilliam County, Oregon. November 22, 2011.

MB&G. 2015. 2015 (Year-5) Revegetation Monitoring Report. Leaning Juniper II Wind Power Project. Gilliam County, Oregon. December 7, 2015.

MB&G. 2023. Leaning Juniper IIa and IIb: 2023 (Year-13) Habitat Mitigation Area (HMA) Photo-Monitoring and Reporting. August 2, 2023 memo from Daniel Covington of MB&G to Brant Ivey of Avangrid Renewables.

NRCS and BLM (Natural Resources Conservation Service and the U.S. Bureau of Land Management). 1999. Sampling Vegetation Attributes. Interagency Technical Reference. BLM/RS/ST-96/002+1730. Pp 55-63. First published in 1996; revised in 1997 and 1999.

State of Oregon. 2013. Final Order on Request for Amendment 2 to the Site Certificate. p. 39. June 21.

Figure

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Leaning Juniper IIA Repower Habitat Mitigation Plan

Figure 1
Repower Mitigation Area

MORROW COUNTY, OR

- Habitat Mitigation Area
- Repower Mitigation Area
- Preliminary Transect Location
- Alternate Transect Location

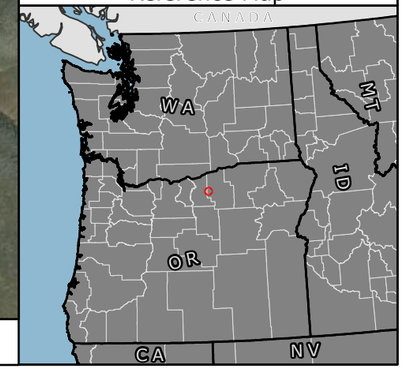
Habitat Subtype

- **GB Habitat:** Perennial Bunchgrass
- **SSA Habitat:** Sagebrush - Rabbitbush - Snakeweed / Bunchgrass - Annual Grass
- **SSC Habitat:** Sandberg Bluegrass - Annual Grass

TETRA TECH

AVANGRID RENEWABLES

Reference Map



1:4,000

WGS 1984 UTM Zone 10N

0 250 500 1,000 Feet

NOT FOR CONSTRUCTION

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Attachment 14
2023 Washington Ground Squirrel Survey Report

Provided under separate confidential cover

Attachment 15
Washington Ground Squirrel Incidental Take Permit

Provided under separate confidential cover

Attachment 16
Second 2023 Cultural Resources Survey Report

Provided under separate confidential cover

Attachment 17
Service Provider Correspondence

PATRICK, MARCELLA

From: gcfs@ortelco.net
Sent: Wednesday, September 13, 2023 4:31 PM
To: PATRICK, MARCELLA
Subject: RE: Leaning Juniper IIA Wind Facility Repower Project

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

Marcy,

Sorry, It has taken a bit to get back to you. Currently everything that I have looked at I see that there will be no changes or needs for the fire district. Our letter from 2006 would be accurate and no need to amend or change.

If you have any questions feel free to reach out.

Thank you

Casey Zellars

Operations Chief
Gilliam County Fire Services
Arlington Office 541-454-2900 (Mon-Tues)
Condon Office 541-384-5555 (Wed-Thurs)
Cell 541-303-3121

From: PATRICK, MARCELLA <marcella.patrick@avangrid.com>
Sent: Wednesday, September 13, 2023 4:22 PM
To: gcfs@ortelco.net
Cc: HALEY, TALIA <talia.haley@avangrid.com>; Hoffbuhr, Tyler <Tyler.Hoffbuhr@avangrid.com>
Subject: RE: Leaning Juniper IIA Wind Facility Repower Project

Hi Casey, thanks for the conversation last week! Per our discussion, it seemed like we could anticipate a response to this email this week when the Fire Chief would be back online. Please feel free to forward this email and put me in direct contact with him, or let me know if I can assist in any way.

Thank you!
Marcy

Marcy Patrick (*she/her/Ms.*)
Permit Manager – Renewables
Cell: 801.946.1092

Internal Use

From: PATRICK, MARCELLA
Sent: Thursday, August 31, 2023 10:58 AM
To: 'gcfs@ortelco.net' <gcfs@ortelco.net>
Cc: HALEY, TALIA <talia.haley@avangrid.com>; Hoffbuhr, Tyler <Tyler.Hoffbuhr@avangrid.com>
Subject: RE: Leaning Juniper IIA Wind Facility Repower Project

Good morning Mr. Zellars, I am checking in to make sure the email below hasn't been lost in inbox traffic. Please let me know if there are any questions or if you can provide an email or updated letter confirming the change in equipment for repowering does not impact service to the Leaning Juniper Wind Power Facility area.

Thank you!
Marcy

Marcy Patrick (*she/her/Ms.*) **Cell: 801.946.1092**
Permit Manager – Renewables

Internal Use

From: PATRICK, MARCELLA
Sent: Tuesday, August 22, 2023 2:14 PM
To: gcfs@ortelco.net
Cc: HALEY, TALIA <talia.haley@avangrid.com>; Hoffbuhr, Tyler <Tyler.Hoffbuhr@avangrid.com>
Subject: Leaning Juniper IIA Wind Facility Repower Project

Dear Mr. Zellars,

I am the Permit Manager for Leaning Juniper Wind Power, LLC, a subsidiary of Avangrid Renewables, LLC. We hold a Site Certificate for the 90.3 MW Leaning Juniper IIA Wind Facility (the Facility). On June 21, 2013, the Energy Facility Siting Council (EFSC) approved Request for Amendment 2 of the Leaning Juniper IIA Wind Power Facility site certificate, which included a minor modification at the Leaning Juniper IIA collector substation to further separate the Leaning Juniper IIA and Leaning Juniper IIB equipment, which is an adjacent project. As approved, under the Site Certificate issued on June 21, 2013, the Leaning Juniper IIA Facility includes wind facility components not to exceed 90.3 MW, including up to 43 wind turbines.

As part of the original EFSC application, Gilliam County Fire Services issued a letter on January 3, 2006 indicating the ability for the district to provide service to the Leaning Juniper Wind Power Facility (attached). The Leaning Juniper IIA Facility site boundary is located entirely within the previously evaluated Leaning Juniper Wind Power Facility boundary. The Certificate Holder will file a Request for Amendment (RFA3) to the Leaning Juniper IIA Facility Site Certificate seeking approval from the Council to repower the Facility with newer technologies that more efficiently generate electricity from wind.

We are proposing to exchange existing blades for longer turbine blades and improve the associated equipment on existing turbine towers and ancillary facilities. The site boundary will not change and the statement quoted in the Fire Services letter remains accurate. As part of the proposed request to the Oregon Energy Facility Siting Council, the Certificate Holder is seeking coordination with Gilliam County Fire Services to confirm this repower amendment does not impact service to the Facility and that your January 3, 2006 letter remains accurate.

Please let me know if you would like to set up a call to discuss the amendment; or, if you have no questions, provide an email or updated letter confirming the change in equipment for repowering does not impact service to the Leaning Juniper Wind Power Facility area.

Thank you,
Marcy

North Gilliam County Rural Fire
Protection District
PO Box 476
1500 Railroad Avenue
Arlington, Oregon 97812
541-454-2900

January 3, 2006

Mrs. Carrie Konkol
CH2M HILL
2020 SW Fourth Avenue, 3rd Floor
Portland, OR 97201

Dear Mrs. Konkol:

The North Gilliam County Rural Fire Protection District is the primary fire response for the area in which the Leaning Juniper Wind Power Facility is located. The Fire Chief has determined that the Leaning Juniper Wind Power Facility will not have a significant impact on fire emergency services

Sincerely,

XXXXX, Fire Chief
North Gilliam County Rural Fire Protection District
Board Chairman
Larry V Eubanks

PATRICK, MARCELLA

From: Gary Bettencourt <gary.bettencourt@co.gilliam.or.us>
Sent: Monday, August 28, 2023 10:48 AM
To: PATRICK, MARCELLA
Cc: HALEY, TALIA; Hoffbuhr, Tyler
Subject: RE: Leaning Juniper IIA Wind Facility Repower Project
Attachments: Ability to Provide Services.pdf

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

Marcy

Attached is the Ability to Provide Services letter requested.

Gary

From: PATRICK, MARCELLA <marcella.patrick@avangrid.com>
Sent: Tuesday, August 22, 2023 2:12 PM
To: Gary Bettencourt <gary.bettencourt@co.gilliam.or.us>
Cc: HALEY, TALIA <talia.haley@avangrid.com>; Hoffbuhr, Tyler <Tyler.Hoffbuhr@avangrid.com>
Subject: Leaning Juniper IIA Wind Facility Repower Project

You don't often get email from marcella.patrick@avangrid.com. Learn why this is important

This is an external email. Please take care when clicking links or opening attachments.

Sheriff Bettencourt,

I am the Permit Manager for Leaning Juniper Wind Power, LLC, a subsidiary of Avangrid Renewables, LLC. We hold a Site Certificate for the 90.3 MW Leaning Juniper IIA Wind Facility (the Facility). On June 21, 2013, the Energy Facility Siting Council (EFSC) approved Request for Amendment 2 of the Leaning Juniper IIA Wind Power Facility site certificate, which included a minor modification at the Leaning Juniper IIA collector substation to further separate the Leaning Juniper IIA and Leaning Juniper IIB equipment, which is an adjacent project. As approved, under the Site Certificate issued on June 21, 2013, the Leaning Juniper IIA Facility includes wind facility components not to exceed 90.3 MW, including up to 43 wind turbines.

As part of the original EFSC application, the Gilliam County Sheriff's Office issued a letter on November 22, 2005 indicating the ability for the district to provide service to the Leaning Juniper Wind Power Facility (attached). The Leaning Juniper IIA Facility site boundary is located entirely within the previously evaluated Leaning Juniper Wind Power Facility boundary. The Certificate Holder will file a Request for Amendment (RFA3) to the Leaning Juniper IIA Facility Site Certificate seeking approval from the Council to repower the Facility with newer technologies that more efficiently generate electricity from wind.

We are proposing to exchange existing blades for longer turbine blades and improve the associated equipment on existing turbine towers and ancillary facilities. The site boundary will not change and the statement quoted in the Sheriff's Office letter remains accurate. As part of the proposed request to the Oregon Energy Facility Siting Council, the Certificate Holder is seeking coordination with the Gilliam County Sheriff's Office to confirm this repower amendment does not impact service to the Facility and that your November 22, 2005 letter remains accurate.

Please let me know if you would like to set up a call to discuss the amendment; or, if you have no questions, provide an email or updated letter confirming the change in equipment for repowering does not impact service to the Leaning Juniper Wind Power Facility area.

Thank you,
Marcy

Avangrid
A member of the Iberdrola Group

Marcy Patrick (*she/her/Ms.*)
Permit Manager – Renewables

2701 NW Vaughn St., Suite 300, Portland, OR 97210
Cell: 801.946.1092
marcella.patrick@avangrid.com

Gilliam County Sheriff's Office

Gary Bettencourt, Sheriff

PO Box 685, 221 S. Oregon Street, Condon, OR 97823

(541) 351-9530

August 28, 2023

Marcy Patrick
Avangrid Renewables
2701 NW Vaughn St., Suite 300, Portland, OR 97210

Dear Ms. Patrick:

The Gilliam County Sheriff's Office is the primary response law enforcement agency for the area in which the Leaning Juniper Wind Power Facility is located. This project is in a relatively low crime area of our county.

The Sheriff's Office will respond appropriately and as necessary to all complaints that come from the Leaning Juniper Wind Power Facility project.

Sincerely,

Gary Bettencourt, Sheriff

November 9, 2023

Kristen Goland
Leaning Juniper 2A
2701 NW Vaughn Street, Suite 300
Portland, Oregon 97210

RE: Leaning Juniper 2A Wind Farm
City of Arlington Water Use

Dear Kristen:

The purpose of this letter is to respond to your September 22, 2023 email concerning the use of the City of Arlington as a water source for construction of your project. The City of Arlington (the City) is prepared to provide water during the construction and maintenance of your project. In your email you stated that the quantity of water required is 35 million gallons during the construction phase and that the water will be used for dust suppression. At this time the City is not able to firmly commit to requested water quantities, however, we are prepared to work with Avangrid to meet your needs in a way that preserves the water needs of the City.

The City is in the process of designing a permanent pump station with a truck fill apparatus so this will facilitate filling water trucks for your needs. The City is considering a water system improvement that utilize the Columbia River water for our golf course irrigation and potentially other City irrigation needs. The City anticipates getting these improvement build in the coming 1-2 years. Once this system is in place the primary water use for the Columbia River water will be the City golf course. While we anticipate that we will have the means to meet your demands it is important to note that the City uses of water will have a priority.

Please feel free to give me a call if you have any questions.

Sincerely,

CITY OF ARLINGTON, OREGON

By: Shanna Gronquist
Shanna Gronquist, Public Works Superintendent

Internal Use

Attachment 18
City of Arlington Water Provider Letter

November 9, 2023

Kristen Goland
Leaning Juniper 2A
2701 NW Vaughn Street, Suite 300
Portland, Oregon 97210

RE: Leaning Juniper 2A Wind Farm
City of Arlington Water Use

Dear Kristen:

The purpose of this letter is to respond to your September 22, 2023 email concerning the use of the City of Arlington as a water source for construction of your project. The City of Arlington (the City) is prepared to provide water during the construction and maintenance of your project. In your email you stated that the quantity of water required is 35 million gallons during the construction phase and that the water will be used for dust suppression. At this time the City is not able to firmly commit to requested water quantities, however, we are prepared to work with Avangrid to meet your needs in a way that preserves the water needs of the City.

The City is in the process of designing a permanent pump station with a truck fill apparatus so this will facilitate filling water trucks for your needs. The City is considering a water system improvement that utilize the Columbia River water for our golf course irrigation and potentially other City irrigation needs. The City anticipates getting these improvement build in the coming 1-2 years. Once this system is in place the primary water use for the Columbia River water will be the City golf course. While we anticipate that we will have the means to meet your demands it is important to note that the City uses of water will have a priority.

Please feel free to give me a call if you have any questions.

Sincerely,

CITY OF ARLINGTON, OREGON

By: Shanna Gronquist
Shanna Gronquist, Public Works Superintendent

Internal Use

Attachment 19
Oregon Department of Aviation
Determination Letter

Oregon

Tina Kotek, Governor

OREGON DEPARTMENT OF AVIATION

3040 25th Street, SE
Salem, OR 97302-1125
Phone: (503) 378-4880
Toll Free: (800) 874-0102
FAX: (503) 373-1688

Sept. 26, 2023

Tyler Hoffbuhr, Avangrid Inc.
tyler.hoffbuhr@avangrid.com

Subject: **Determination Letter Regarding the Construction or Alteration of Wind Turbines in Gilliam County, Oregon**

ODAV Aviation Reference Numbers:
2023-ODAV-480-OE through 2023-ODAV-486-OE
2023-ODAV-489-OE through 2023-ODAV-524-OE

Representative's Identifier:
Leaning Juniper II Wind Power 2023

The Oregon Department of Aviation (ODAV) has conducted an aeronautical study of this proposed construction and has determined that notice to the FAA is required. The structures exceed FAR Part 77.9 (a, b or c) and/or Obstruction Standards of OAR 738-70-0100.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes to the original application will void this determination. Any future construction or alteration to the original application will require a separate notice to ODAV.

Unless it is otherwise extended, revised, or terminated, this determination will expire 18 months after its effective date, regardless of whether the proposed construction or alteration has been started, or on the date the proposed construction or alteration is abandoned, whichever is earlier.

Findings & Mitigation:

☒ We do not object with conditions to the construction described in this proposal. This determination does not constitute ODAV approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

☒ Marking and lighting are required for aviation safety. It shall be installed and maintained in accordance with FAA Advisory Circular 70/7460-1M.

☐ The proposed structure should be lowered to a height that is no longer an obstruction to the imaginary surfaces set forth in FAA FAR 77.

☐ The proposed obstruction should be relocated outside the airport primary and horizontal surface FAA FAR 77.

Sincerely,

Brandon Pike, Aviation Planner

Attachment 20
Wildfire Mitigation Plan

Wildfire Mitigation Plan for the Leaning Juniper IIA Wind Power Facility

Document No: 230717173800_d50dfc00
Version: Final

Avangrid A member of the Iberdrola Group

Leaning Juniper IIA Repowering Project
February 2024

Wildfire Mitigation Plan for the Leaning Juniper IIA Wind Power Facility

Client name:	Avangrid Renewables, LLC		
Project name:	Leaning Juniper IIA Repowering Project		
Document no:	230717173800_d50dfc00	**Project no:**	D3747400
Version:	Final	**Project manager:**	James Gregory/Jacobs
Date:	February 2024	**Prepared by:**	Olivia Roberts/Jacobs

Jacobs Engineering Group Inc.

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United States

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2 Resources for Future Best Practices 5

Figures

1 Wildfire Risk to Assets
2 Overall Fire Risk

Acronyms and Abbreviations

ACP	American Clean Power
APLIC	Avian Power Line Interaction Committee
Certificate Holder	Leaning Juniper Wind Power, LLC
CWPP	*Community Wildfire Protection Plan*
Facility	Leaning Juniper IIA Wind Power Facility
LJIIA	Leaning Juniper IIA
NERC	North American Electric Reliability Corporation
O&M	operations and maintenance
ODOE	Oregon Department of Energy
OSBC	Oregon Specialty Building Codes

1. Introduction

Leaning Juniper Wind Power, LLC (Certificate Holder), a wholly owned subsidiary of Avangrid Renewables, LLC, proposes to repower the Leaning Juniper IIA (LJIIA) Wind Power Facility (Facility) in Gilliam County, Oregon. Once repowered, the Facility will generate up to 98.4 megawatts with 43 wind turbines within a site boundary of approximately 6,404 acres.

2. Wildfire Risk

This Wildfire Mitigation Plan has been prepared to meet Oregon Administrative Rule 345-022-0115(1)(b), which requires the following:

> *(A) Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;*

The data sources used in this mitigation plan to identify areas within the site boundary subject to heightened risk of wildfire include the *Oregon CWPP Planning Tool* (CWPP 2018), and the *Gilliam County Multiple-Jurisdictional Natural Hazards Mitigation Plan* (Gilliam County 2018). Both data sources are reputable for the following reasons: (1) the *Community Wildfire Protection Plan* (CWPP) planning tool is a government database developed to meet the requirements of Senate Bill 762 and associated administrative rules, and (2) the *Gilliam County Multiple-Jurisdictional Natural Hazards Mitigation Plan* was reviewed by the Federal Emergency Management Agency and has an effective date through January 2024.

The CWPP data include a Quantitative Wildfire Risk Assessment located on the Oregon Explorer website (CWPP 2018). The data indicate that approximately 95 percent of the site boundary has a low wildfire risk, with less than 5 percent of the area having a very high/high wildfire risk (Figures 1 and 2). The *Gilliam County Multiple-Jurisdictional Natural Hazards Mitigation Plan* describes a county-wide risk assessment of wildfire as "high" probability and describes many areas in the county as "conducive for large and fast-moving wildfires" due to high winds typical for regional dry conditions and terrain. The plan identifies risk factors for starting wildfires in the county as highways, railroads, lighting, power lines, debris burning, and equipment.

The existing structures within the LJIIA Facility site boundary include the Bonneville Power Administration Slatt-Buckley 500-kilovolt transmission line, wind turbines, substation, and an operations and maintenance (O&M) structure. If a wildfire were ignited onsite, the areas subject to heighted risk would be the areas associated with these structures. However, the LJIIA Facility site is bordered by John Day Highway running north and south that would serve as a fire break were a wildfire to occur east. Rattlesnake Road bisects the Facility site boundary running east and west and also serves as a fire break were a wildfire to occur south of the site boundary.

3. Operational Procedures and Inspections

> *(B) Describe the procedures, standards, and timeframes that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;*

The Facility components that could cause electrical fires are the wind turbines, substation, and overhead electrical lines. During operations, the Certificate Holder will conduct housekeeping inspections for maintaining a Facility that minimizes the risk of fire. Operational procedures and inspections follow.

- Monthly inspection requirements during operations:

  - Ensure equipment is appropriately maintained to control sources of combustible materials.
  - Remove and prevent the accumulation of combustible materials.
  - Collect and properly dispose of combustible waste.
  - Ensure flammable chemicals are stored in a flammable cabinet.
  - If any leaks are identified during inspections, stop the leak immediately. If the leak cannot be stopped, contain it. Once the leak has been stopped or contained, clean the area immediately to mitigate any fire hazard and then report the leak to Avangrid's Environmental Health and Safety Department.
  - Inspect and maintain safeguards installed on heat-producing equipment to prevent accidental ignition of combustible materials, in accordance with equipment O&M manuals.
  - Visually inspect portable fire extinguishers on a monthly basis.
  - Visually inspect substation and surrounding area on a monthly basis and complete Avian Power Line Interaction Committee (APLIC) inspection forms.
- Semiannual inspection requirements during operations:
  - Each time technicians enter a wind turbine they will inspect the turbine for cleanliness and fire hazards.
  - Thoroughly clean and inspect wind turbines on a semiannual basis in accordance with Oregon Department of Emergency Management maintenance requirements.
  - Conduct semiannual visual inspections of overhead electrical lines and complete APLIC inspection forms.
- Annual inspection requirements during operations:
  - Test fire protection equipment in accordance with the manufacturer specifications and National Fire Protection Association requirements. Portable dry chemical fire extinguishers will have a maintenance check annually and a hydrostatic test every 12 years. Carbon dioxide extinguishers will have an annual maintenance check and a hydrostatic test every 5 years. A contractor knowledgeable in the requirements will perform the check and testing. This check and testing will also be performed after an extinguisher has been used on a fire.

In the event that any discrepancies are identified in the inspections outlined above, remedial actions will be taken to resolve the issue immediately and reported to the Plant Manager. If the issue cannot be resolved immediately by the technician, the Plant Manager will schedule remedial actions and monitor the equipment until the issue is resolved to ensure maintaining a Facility that minimizes the risk of fire.

In addition to the inspection requirements above, the Certificate Holder will maintain a fire safe Facility by prohibiting smoking and sources of open flames in areas where combustible materials are located. Smoking will be authorized in designated areas only.

The existing Suzlon S88 wind turbine models at the Facility will adhere to the following additional operational requirements due to a known manufacturer equipment issue associated with the cabling connections in the junction box:

- Temperature strips are to be installed on the aluminum junction boxes at each Suzlon S88 turbine. Temperature strips will be inspected every time a turbine is visited by a plant technician, at least twice per year.

- If the maximum temperature on the strip exceeds 900 degrees Celsius, the cabling connections will be trimmed and reterminated by a qualified vendor.

To reduce the availability of fuels for wildfire near electrical components, the Certificate Holder will maintain the existing nonflammable gravel pads around the wind turbines and substation, mow vegetation under overhead electrical lines, and implement ongoing vegetation management:

- Apply herbicide on gravel pad around turbine pad and turbine access road to prevent vegetation, annually at a minimum, and as needed based on site conditions.
- Apply herbicide on substation gravel pad, annually at a minimum, and as needed based on site conditions. Highly compacted gravel foundations of substation are not suitable for vegetation ground.
- Mow vegetation beneath overhead electrical lines to achieve clearance requirements between conductor and ground, annually at a minimum, and as needed based on site conditions.
- Monitor success of noxious weed treatments in first five years of operations and develop a long-term operational weed control plan in consultation with the Oregon Department of Energy (ODOE), Oregon Department of Agriculture, and Gilliam County (if required) after the initial five-year monitoring period.
- Control noxious weed populations, if identified during operational monitoring, through manual, mechanical, chemical, and/or biological methods. The specific method of control will be chosen based on the most appropriate method for the specific noxious weed identified.

4. Preventative Actions During Operations

(C) Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;

During operations, the Certificate Holder will conduct vegetation management inspections each spring, prior to the summer months when fire risk is heightened. During these inspections, the technician will ensure vegetation setbacks from installed equipment is adequate and will enact vegetation control measures if needed. During this period, the turbine pads, access roads, electrical collector systems, and the substation will also have herbicide applied to control vegetation growth.

The Certificate Holder will also monitor for periods of heightened fire risk through the third-party contractor StormGeo, which provides weather monitoring to track conditions at the Facility. Through this monitoring system, the Plant Manager will be notified of Red Flag Warnings and weather conditions that produce an increased risk of fire danger.

If maintenance activities need to occur at the Facility during periods of heightened fire risk, Certificate Holder will deploy the following additional measures to prevent a wildfire:

- If regrowth around Facility components is observed, the Plant Manager will enact measures to control the growth through either mechanical or chemical measures, dependent on the vegetation.
- Maintenance activities at the Facility will be scheduled with consideration to heightened fire risk. All activities will require a Hot Work Permit issued by the Plant Manager, which characterizes the fire risk of the maintenance activity and necessary precautions.
- When possible, maintenance work involving a spark risk will be postponed.
- If maintenance activities cannot be postponed until weather conditions improve, the Plant Manager will enact fire risk prevention procedures to ensure the continued operation of the Facility. A contractor will

be hired to monitor fire risk and will be onsite with a water truck overseeing the maintenance activities as a fire watch.

5. Personnel Training During Operations

In addition to the preventative actions described above, workers, contracting employees, and other personnel performing official duties at the Facility will undergo regular training exercises throughout the operational life of the Facility, as follows:

- Twice-annual tabletop drills, including training on response measures in the event of a fire.
- Annual drills involving local first responders, such as emergency medical services, law enforcement, and/or fire and rescue personnel. Discussion of potential fire-fighting hazards within the Facility, including transformer fires that contain energized components and large reservoirs of oil, the risk of falling debris from blades/nacelle burning, the importance of ensuring that equipment is de-energized before firefighting is attempted, and site layout awareness to ensure response times are optimized.

6. Minimization Procedures During Operations

(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source; and

In the event of a wildfire at or in the vicinity of the Facility, the Plant Manager will notify onsite personnel via radio or telephone to initiate Emergency Response Procedures and designate the safe assembly location for all personnel to evacuate to. The Plant Manager will contact 911 and request the appropriate emergency services, providing all pertinent information concerning the fire emergency. A designee will be assigned to account for all personnel at the Facility and locate any missing persons while the Plant Manager coordinates with emergency response personnel. In the event of a wildfire at the Facility, the Certificate Holder will report the incidence to ODOE within 72 hours.

Procedures to minimize risks to public health and safety, first responder health and safety, and damages to Council-protected resources are identified in Table 1 to supplement the measures described earlier in this plan.

Table 1. Procedures to Minimize Wildfire Risk

Topic	Procedures
Public health and safety	The public will be excluded from the substation by fencing. Turbine doors will be locked to prevent unauthorized entry. Pad mount step-up transformers at the base of turbines, and electrical junction boxes, will be surrounded by bollards to minimized inadvertent vehicle and farm equipment collisions with electrical equipment.
First Responders	The Certificate Holder will offer annual training to local first responders. Training will cover the firefighting responses to electrical fires. Response to fires at the Facility, unlikely as they may be, should focus on controlling spread to adjacent lands. Operational staff will be trained in the use of fire extinguishers for responding to incipient stage fires on site.

Topic	Procedures
Resource Protection	Resources covered by Council standards near the Facility area include agricultural land, shrub-steppe habitat, and cultural resources. The existing county roads will form a fire break between fields that will discourage the spread of wildfire between fields or into wildlife habitat. The two closest cultural sites are Site 35GM373, a historic farmstead or ranch complex located at an intersection of roads in Jones Canyon; and Site 35GM 388, a small debris scatter near the eastern edge of the repower corridor survey area. The Certificate Holder will avoid these resources during Facility planning and implementation.

7. Plan Updates

(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.

The Certificate Holder may consider revisions to this plan at its sole discretion to incorporate future best practices or emerging technology depending on whether the new technology is cost effective and suitable for the site conditions. The Certificate Holder will track the industry groups and applicable design standards outlined in Table 2 to identify future technologies or best practices that could be implemented at the Facility.

Table 2. Resources for Future Best Practices

Reference	Description	Method
American Clean Power (ACP)	ACP establishes best practices for renewable energy projects.	The Certificate Holder's parent company is a member of ACP and participates in best practice development.[a]
North American Electric Reliability Corporation (NERC)	NERC develops electrical standards for large energy facilities.	The Certificate Holder will follow NERC Standard FAC-003-0 for its vegetation management program of transmission lines,[b] or updates to this standard as approved by NERC.
Oregon Specialty Building Codes (OSBC)	OSBC designs building codes applicable to inhabitable spaces, including the O&M structure and the substation enclosure.	Remodeling of the O&M structure and substation enclosure that requires permits will follow any updates to the OSBC at that time.
APLIC	APLIC develops avian protection methods for electrical facilities to minimize fire risk to bird/mammal nests on electrical equipment.	The Certificate Holder's parent company is a member of APLIC.[c] An operational wildlife monitoring program will inspect for wildlife nesting on facilities that could cause fire, and take actions following applicable laws (for example, the Migratory Bird Treaty Act).

[a] Link to ACP Standards & Practices: https://cleanpower.org/resources/types/standards-and-practices/.
[b] NERC FAC-003-0: https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-0.pdf.
[c] Link to APLIC member organization: https://www.aplic.org/member_websites.php.

8. Construction Wildfire Mitigation and Measures

The Certificate Holder will require the contractor completing construction activities to develop a site-specific Fire Safety Plan to identify sources of fire risk during construction, and all necessary minimization procedures to control the risk of fire during construction, including weather monitoring, personnel training, and emergency response and communication procedures. This Fire Safety Plan will be completed in consultation with the North Gilliam County Rural Fire Protection District and the Arlington Fire

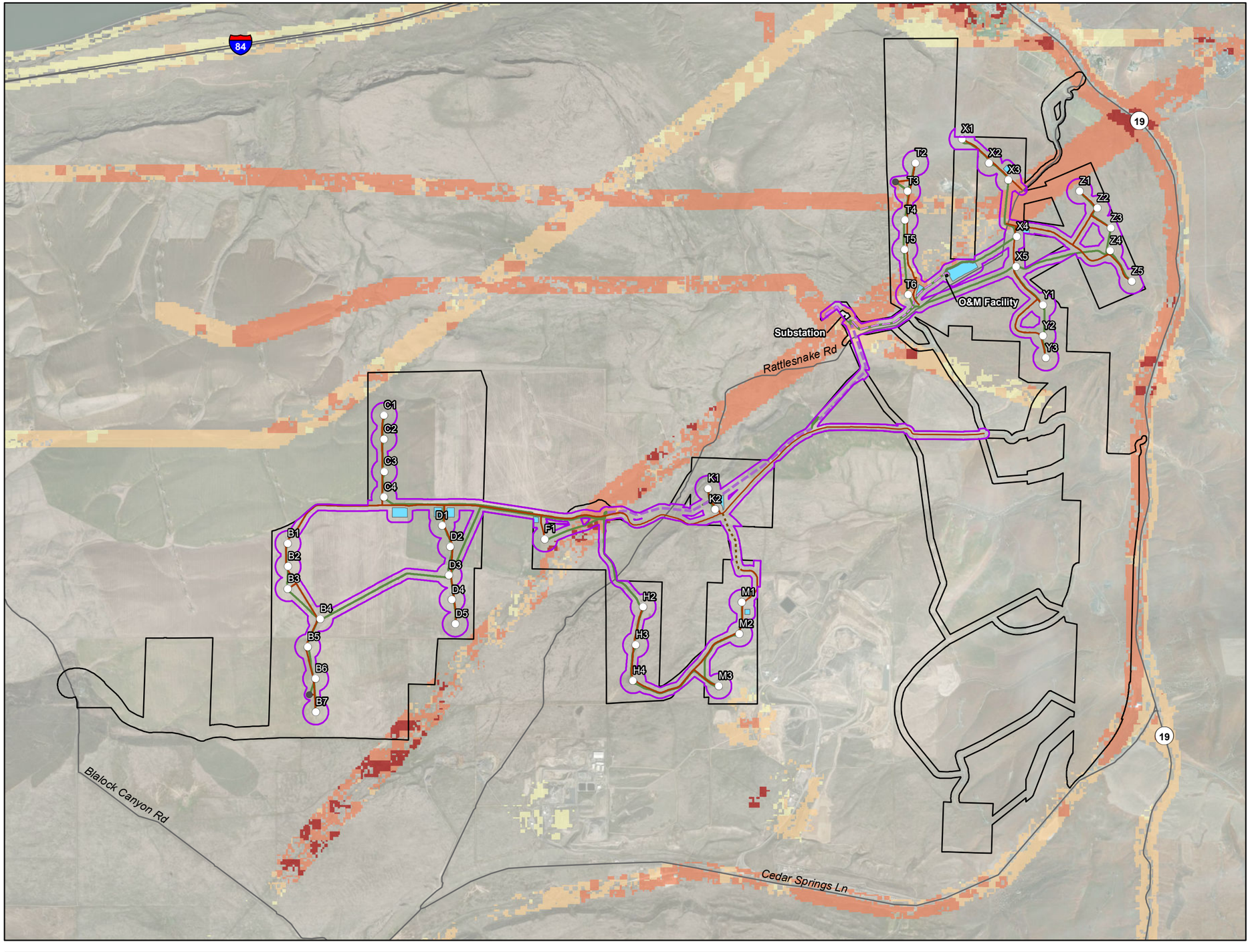
Department and provided to ODOE as a preconstruction deliverable in accordance with Site Certificate Condition Number 61.

9. References

CWPP. 2018. *Oregon CWPP Planning Tool*. Available on the Oregon Explorer website: https://tools.oregonexplorer.info/oe_htmlviewer/index.html?viewer=wildfireplanning.

Gilliam County. 2018. *Gilliam County Multiple-Jurisdictional Natural Hazards Mitigation Plan*. Effective January 17, 2019 through January 16, 2024. 6.20.2022-Gilliam County NHMP 2019.pdf (revize.com)

Figures



Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Proposed Crane Walk
- Temporary Laydown or Crane Assembly

Wildfire Risk to Assets

- Very High
- High
- Moderate
- Low

N

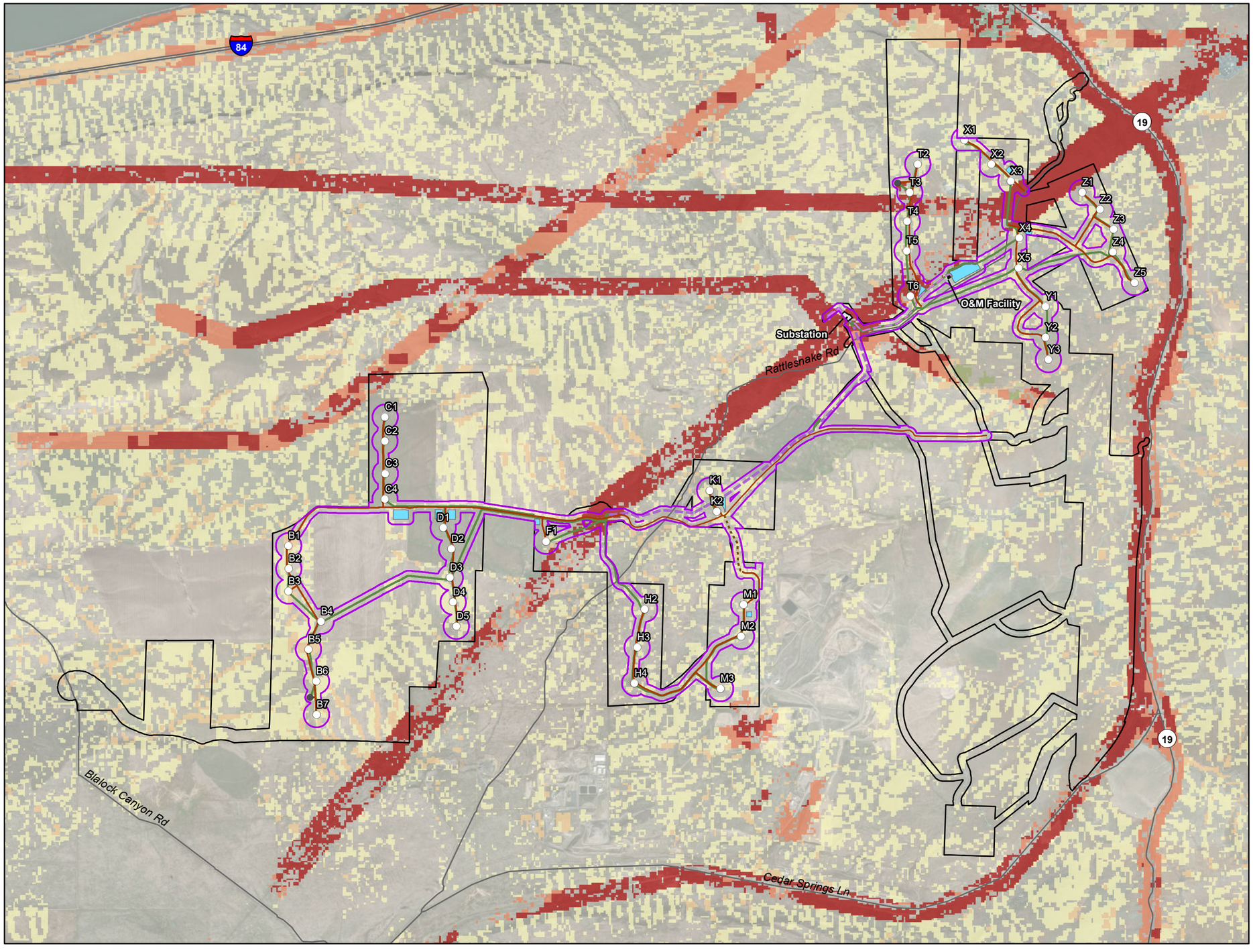
0 0.5 1 2

Miles

Figure 1
Wildfire Risk to Assets
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

\\dc1vs01\gisproj\I\Iberdrola\371832_Wind\MapFiles\Wildfire\Figure_1_230830.mxd



Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Proposed Crane Walk
- Temporary Laydown or Crane Assembly

Overall Wildfire Risk

- Very high
- High
- Moderate
- Low
- Low benefit
- Benefit

N

0 0.5 1 2

Miles

Figure 2
Overall Fire Risk
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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Attachment 21
Contractor Recycling Statement

DocuSign Envelope ID: 2129F0BC-3FBF-4A7F-B990-4271B309DF0C

M. A. Mortenson Company
700 Meadow Lane North
Minneapolis, MN 55442
Phone: 763.522.2100
www.mortenson.com

To Whom it May Concern:

Mortenson has been engaged in the pursuit of repowering the Leaning Juniper 2A project near Arlington, OR for Avangrid Renewables. Included within the scope of work for the project is the decommissioning and recycling of the existing wind turbine blades. Mortenson can attest that we have the experience, capability, and capacity to perform this scope of work for the Leaning Juniper 2A project. The process of decommissioning wind turbine blades requires multiple steps, including removal of blades from existing wind turbines, initial processing of blades on site for hauling to recycling facility, transport from project site to the recycling facility, and final processing and use of the material within cement kilns, all of which steps involve multiple parties but will be managed from project to end use by Mortenson. The final processing of the blades within the cement kilns is planned to occur at Veolia North America in Missouri.

If you have any further questions about Mortenson's experience or capability to perform this work, please contact me via my information below.

Sincerely,

DocuSigned by:
Todd Nealey
0D12C27BFC1A449...

Todd Nealey
Project Executive
Todd.Nealey@Mortenson.com
517-749-1688

Attachment 22
Setback Maps

Avangrid
A member of the Iberdrola Group

EFSC(a,c&e) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

T2 T3 T4 T5 T6 X3 X4 X5 Z4 Z5 Y1 Y2

C1 C2 C3 C4 D1 D2 D3 D4 D5 F1 B1 B2 B3 B4 B5 B6 B7

K1 K2 H2 H3 H4 M1 M2

HULDEN LN
RATTLESNAKE RD
EIGHTMILE RD
JOHN DAY HWY
STONE LN
SHUTLER DR
CEDAR SPRINGS LN
MONTAGUE LN

- Proposed Repower Turbine (138.1m TH)
- Access Road
- Leased Land

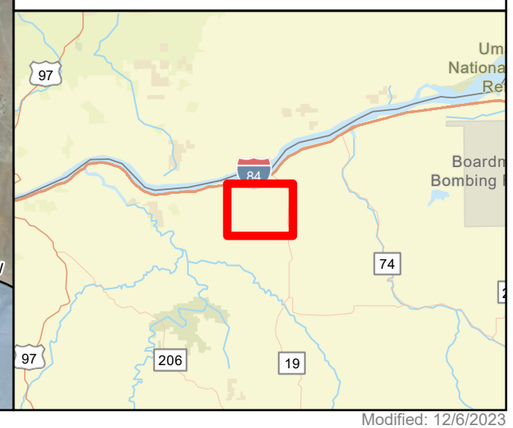
Setback

- EFSC(a) - Residential Zoning Setback - 3,520ft
- EFSC(c) - Residence Setback - 1,320ft
- EFSC(e) - Railroad/Substation Setback - 250ft

N

0 3,000 6,000

Feet



Avangrid
A member of the Iberdrola Group

EFSC(b&d) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

X4 Insert

RATTLESNAKE RD

0 150 300 450 600
Feet

T2 T3 T4 T5 T6 X3 X4 X5 Y1 Y2 Z4 Z5

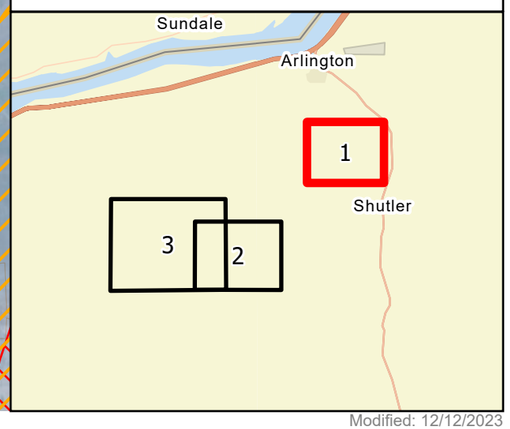
- Proposed Repower Turbine (138.1m TH)
- Access Road
- Leased Land

Setback

- EFSC(b) - Road ROW Setback - 151.91m (110% TH from ROW)
- EFSC(d) - Non-Participating Setback - 151.91m (110% TH)

N

0 800 1,600
Feet



EFSC(b&d) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

Avangrid
A member of the Iberdrola Group

K1
K2
F1
RATTLESNAKE RD
M1
M2
H2
H3
H4

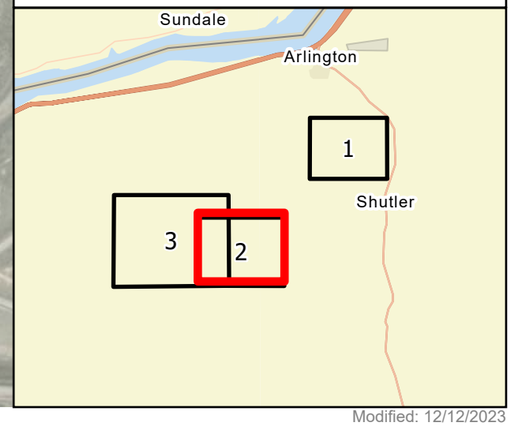
- Proposed Repower Turbine (138.1m TH)
- Access Road
- Leased Land

Setback

- EFSC(b) - Road ROW Setback - 151.91m (110% TH from ROW)
- EFSC(d) - Non-Participating Setback - 151.91m (110% TH)

N

0 900 1,800
Feet



EFSC(b&d) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

C1
C2
C3
C4
D1
D2
D3
D4
D5
F1
B1
B2
B3
B4
B5
B6
B7

- Proposed Repower Turbine (138.1m TH)
- Access Road
- Leased Land

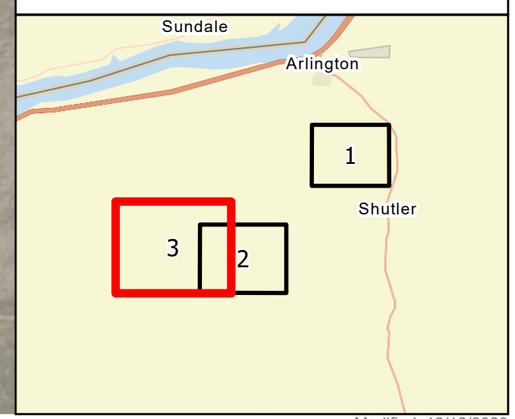
Setback

- EFSC(b) - Road ROW Setback - 151.91m (110% TH from ROW)
- EFSC(d) - Non-Participating Setback - 151.91m (110% TH)

N

0 1,000 2,000

Feet



Avangrid
A member of the Iberdrola Group

EFSC(f) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

6035

6034

RATTLESNAKE RD

STONE LN

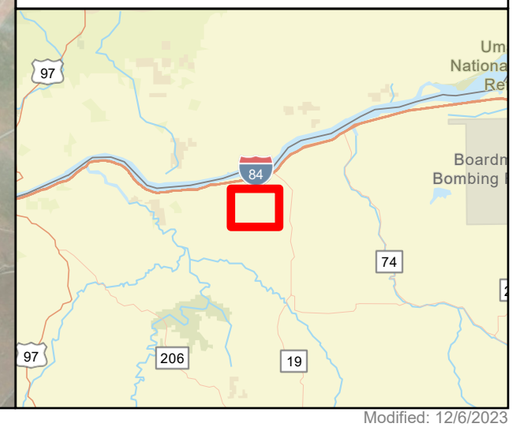
- Permanent MET Tower
- Leased Land
- EFSC(f) - Road Setback - 250ft

If MET Tower improvements are made, they will be made within the existing footprint.

N

0 2,200 4,400

Feet



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Modified: 12/6/2023

Avangrid
A member of the Iberdrola Group

EFSC(g) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

Leased Land

EFSC(g) - Road Setback - 50ft

O&M Facility

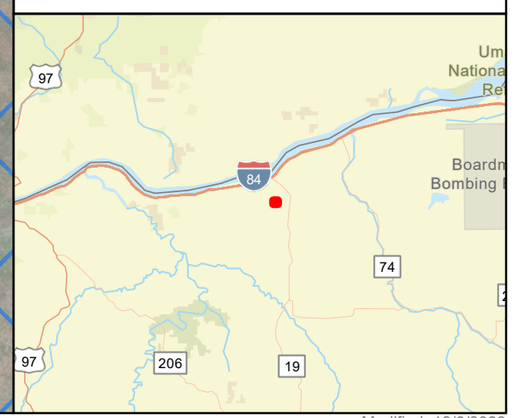
If O&M Facility improvements are made, they will be made within the existing footprint.

RATTLESNAKE RD

N

0 200 400

Feet



Avangrid
A member of the Iberdrola Group

EFSC(h) Setback Map

Leaning Juniper IIa Repower

Gilliam County, Oregon

Substation

Leased Land

EFSC(h) - Road/Non-Participating Setback - 50ft

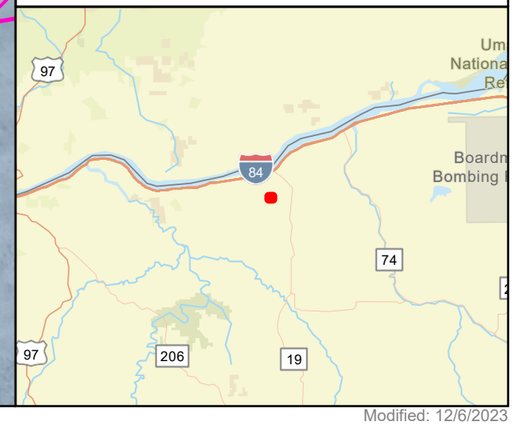
If substation improvements are made, they will be made within the existing footprint.

RATTLESNAKE RD

N

0 200 400

Feet



Attachment 23
Sound Level Analysis

Provided under separate confidential cover

Attachment 24
List of Noise-Sensitive Properties

Noise-Sensitive Properties within 1 Mile of Facility Site Boundary
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility, Gilliam County, Oregon
Data received from Gilliam County Assessor's Office on January 4, 2024.

MAP TAX LOT	OWNERSHIP	AGENT	IN_CARE_OF	M_ADDRESS	M_CITY	M_STATE	M_ZIP	SITUS
02N21E0000-00102	KREBS JR			PO BOX 8	ARLINGTON	OR	97812	73113 HWY 19 ARLINGTON OR 97812
02N21E0000-00102	KREBS JR			PO BOX 8	ARLINGTON	OR	97812	73113 HWY 19 ARLINGTON OR 97812
02N21E0000-00200	PHILIPPI RANCHES INC			79693 AGNEW RD	HERMISTON	OR	97838	72652 RATTLESNAKE RD ARLINGTON OR 97812
02N21E0000-00800	QUARTER M RANCH LLC		GREINER, DWIGHT	61835 DART CREEK RD	ST HELENS	OR	97051	72753 HWY 19 ARLINGTON OR 97812
02N21E0000-01100	OREGON WASTE SYSTEMS INC			PO BOX 1450	CHICAGO	IL	60690	18383 STONE LN ARLINGTON OR 97812
02N21E0000-01300	DA SILVA FARIN			71983 HWY 19	ARLINGTON	OR	97812	71983 HWY 19 ARLINGTON OR 97812
02N21E0000-01400	SUMNER ARTHUR MARK & SUMNER BECKY MEA			71667 HWY 19	ARLINGTON	OR	97812	71667 HWY 19 ARLINGTON OR 97812
02N21E0000-01400	SUMNER ARTHUR MARK & SUMNER BECKY MEA			71667 HWY 19	ARLINGTON	OR	97812	71667 HWY 19 ARLINGTON OR 97812
02N21E0000-01400	SUMNER ARTHUR MARK & SUMNER BECKY MEA			71667 HWY 19	ARLINGTON	OR	97812	71667 HWY 19 ARLINGTON OR 97812
03N21E0000-00507	GRONQUIST KELLY M & SHANNA L			PO BOX 32	ARLINGTON	OR	97812	73943 RHEA LN ARLINGTON OR 97812
03N21E21CC-01600	CATHEY JONATHAN S & DIANA M			6333 SE SCOTT DR	PORTLAND	OR	97215	180 E SECOND ST ARLINGTON OR 97812
03N21E21CC-01600	CATHEY JONATHAN S & DIANA M			6333 SE SCOTT DR	PORTLAND	OR	97215	180 E SECOND ST ARLINGTON OR 97812
03N21E21CC-01700	EUBANKS LARRY WILLIAM			19028 MONTAGUE LN	ARLINGTON	OR	97812	200 COLUMBIA ST ARLINGTON OR 97812
03N21E27CC-00200	HAUSINGER LEONARD			PO BOX 361	ARLINGTON	OR	97812	1600 HWY 19 ARLINGTON OR 97812
03N21E27CC-00300	DEVIN OIL COMPANY INC			PO BOX 105	HERMISTON	OR	97838	UNDETERMINED SITUS ADDRESS
03N21E27CC-00500	FIGTREE COMMERCIAL LLC			6900 BOCHI CIR	SARASOTA	FL	34242	1570 HWY 19 ARLINGTON OR 97812
03N21E27CC-01100	ANDERSON JERRY E & JOANN M			74000 19 HWY	ARLINGTON	OR	97812	74000 HWY 19 ARLINGTON OR 97812
03N21E2800-00203	PACIFIC INVESTING INC		JONES DAREN	PO BOX 1021	ORTING	WA	98630	475 SHANE DR ARLINGTON OR 97812
03N21E2800-00209	PORT OF ARLINGTON			PO BOX 279	ARLINGTON	OR	97812	1500 MAIN ST ARLINGTON OR 97812
03N21E2800-00301	EATON JAMES B			PO BOX 426	ARLINGTON	OR	97812	1350 LOCUST ST ARLINGTON OR 97812
03N21E2800-00600	COX NORMAN			PO BOX 534	ARLINGTON	OR	97812	70 SHANE DR ARLINGTON OR 97812
03N21E2800-00703	LORENTZ CLINT & NANNETTE			PO BOX 102	ARLINGTON	OR	97812	100 SHANE DR ARLINGTON OR 97812
03N21E28BA-00100	WEATHERFORD MARION T			PO BOX 368	ARLINGTON	OR	97812	450 CHERRY ST ARLINGTON OR 97812
03N21E28BA-00400	KILKENNY EVA			PO BOX 39	ARLINGTON	OR	97812	400 CHERRY ST ARLINGTON OR 97812
03N21E28BA-00500	HAGUEWOOD KEVIN & BUTLER MICHELLE			64396 MCNAB LN	IONE	OR	97843	225 E CHERRY ST ARLINGTON OR 97812
03N21E28BA-00600	HAGUEWOOD KEVIN & BUTLER MICHELLE K			64396 MCNAB LN	IONE	OR	97843	550 DAHLIA ST ARLINGTON OR 97812
03N21E28BA-00900	CITY OF ARLINGTON			PO BOX 68	ARLINGTON	OR	97812	1300 LOCUST ST ARLINGTON OR 97812
03N21E28BA-01000	CITY OF ARLINGTON			PO BOX 68	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28BA-01201	PALMER SUSAN			PO BOX 128	ARLINGTON	OR	97812	400 COLUMBIA ST ARLINGTON OR 97812
03N21E28BB-00200	SUMNER MARK & BECKY M			PO BOX 295	ARLINGTON	OR	97812	300 COLUMBIA ST ARLINGTON OR 97812
03N21E28BB-00700	TULJA MANAGEMENT LLC			PO BOX 399	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28BB-00700	TULJA MANAGEMENT LLC			PO BOX 399	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28BB-03001	HATHAWAY JEREMIE M			PO BOX 545	ARLINGTON	OR	97812	650 W SECOND ST ARLINGTON OR 97812
03N21E28BB-03600	CHURCH OF THE NAZARENE			PO BOX 487	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28BB-04100	GARRETT JOHN C & SHEILA D			PO BOX 36	ARLINGTON	OR	97812	700 MAIN ST ARLINGTON OR 97812
03N21E28BB-04200	WHITTEN COLE ET AL			PO BOX 201	ARLINGTON	OR	97812	750 MAIN ST ARLINGTON OR 97812
03N21E28BB-04300	BORGHESE HOLLY			PO BOX 237	ARLINGTON	OR	97812	780 MAIN ST ARLINGTON OR 97812
03N21E28BB-04400	GENTRY BOBBY S			PO BOX 583	ARLINGTON	OR	97812	725 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BB-04500	GENTRY BOBBY S			PO BOX 583	ARLINGTON	OR	97812	775 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BB-04600	BORGHESE HOLLY			PO BOX 237	ARLINGTON	OR	97812	790 MAIN ST ARLINGTON OR 97812
03N21E28BC-00100	BRYANT KERRY & CYNTHIA			PO BOX 276	ARLINGTON	OR	97812	755 MAIN ST ARLINGTON OR 97812
03N21E28BC-00200	WETHERELL TADD & LESLIE			PO BOX 124	ARLINGTON	OR	97812	775 MAIN ST ARLINGTON OR 97812
03N21E28BC-00600	WETHERELL KRISTINE M			PO BOX 335	ARLINGTON	OR	97812	875 W SECOND ST ARLINGTON OR 97812
03N21E28BC-00601	WETHERELL EMILY KRISTINE			PO BOX 542	ARLINGTON	OR	97812	830 W THIRD ST ARLINGTON OR 97812
03N21E28BC-00900	CLAUGHTON JOSEPH JAMES & JODI L			PO BOX 356	ARLINGTON	OR	97812	850 W THIRD ST ARLINGTON OR 97812
03N21E28BC-01001	BLINN RONALD L & MARILYN L			PO BOX 452	ARLINGTON	OR	97812	900 W SECOND ST ARLINGTON OR 97812

Noise-Sensitive Properties within 1 Mile of Facility Site Boundary
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Leaning Juniper IIA Wind Power Facility, Gilliam County, Oregon
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MAP TAX LOT	OWNERSHIP	AGENT	IN_CARE_OF	M_ADDRESS	M_CITY	M_STATE	M_ZIP	SITUS
03N21E28BC-01100	GRUBAUGH JOHN J & MARTY D			18216 HULDEN LN	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28BC-01200	REDING LOYD DAVID JR & STACY JEAN			875 W FIRST ST	ARLINGTON	OR	97812	875 W FIRST ST ARLINGTON OR 97812
03N21E28BC-01400	GROSSMILLER GARY ALLEN			PO BOX 22	ARLINGTON	OR	97812	850 W FIRST ST ARLINGTON OR 97812
03N21E28BC-01500	MOSS JAMES D & MOSS DARRELL J			77598 S EDWARDS RD	STANFIELD	OR	97875	825 MAIN ST ARLINGTON OR 97812
03N21E28BC-01600	PARKER CHRISTOPHER ZEISZ			1365 INDEPENDENCE AVE	WOODBURN	OR	97071	875 MAIN ST ARLINGTON OR 97812
03N21E28BC-01700	STEWARD JAMIE			PO BOX 513	ARLINGTON	OR	97812	925 MAIN ST ARLINGTON OR 97812
03N21E28BC-01800	SHAW ROBERT & BONNIE J			PO BOX 65	ARLINGTON	OR	97812	800 W FIRST ST ARLINGTON OR 97812
03N21E28BC-01900	LDB PROPERTIES LLC			PO BOX 578	ARLINGTON	OR	97812	1050 W FIRST ST ARLINGTON OR 97812
03N21E28BC-01901	JOHNSON SCOTT ANTHONY			PO BOX 282	ARLINGTON	OR	97812	1020 W FIRST ST ARLINGTON OR 97812
03N21E28BC-02000	AKIN ERIC R			PO BOX 73	ARLINGTON	OR	97812	25 HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-02200	CUNNINGHAM ALAN W & COLLEEN A			PO BOX 576	ARLINGTON	OR	97812	75 W HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-02300	VALIQUETTE GLEN J & TERRIE K			PO BOX 457	ARLINGTON	OR	97812	1025 W FIRST ST ARLINGTON OR 97812
03N21E28BC-02400	PALMER DAVID J			2500 A NORTH ANDERSON RD	GARDEN CITY	OR	67846	175 W HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-02500	LUNA ADRIAN MIRANDA			PO BOX 241	ARLINGTON	OR	97812	1075 W FIRST ST ARLINGTON OR 97812
03N21E28BC-02600	HUNKING KEVIN O & JENNIFER L			11197 KATHY LN SE	STAYTON	OR	97383	975 W FIRST ST ARLINGTON OR 97812
03N21E28BC-02701	AKIN RICHARD EUGENE & SALLY GAYLE			PO BOX 285	ARLINGTON	OR	97812	925 W SECOND ST ARLINGTON OR 97812
03N21E28BC-02900	CHURCH OF THE NAZARENE			PO BOX 487	ARLINGTON	OR	97812	985 W SECOND ST ARLINGTON OR 97812
03N21E28BC-03100	OSMAN JESSE N & SHANNON L			PO BOX 573	ARLINGTON	OR	97812	1075 W SECOND ST ARLINGTON OR 97812
03N21E28BC-03200	MURRILL LYNN			PO BOX 84	ARLINGTON	OR	97812	1050 W THIRD ST ARLINGTON OR 97812
03N21E28BC-03400	WINTERS RUSSELL SCOTT & TAMMY JO			PO BOX 336	ARLINGTON	OR	97812	1000 W THIRD ST ARLINGTON OR 97812
03N21E28BC-03500	STEWARD MARK & IRENE			PO BOX 513	ARLINGTON	OR	97812	950 W THIRD ST ARLINGTON OR 97812
03N21E28BC-03601	DAVIDSON NANCY K			PO BOX 304	ARLINGTON	OR	97812	870 W THIRD ST ARLINGTON OR 97812
03N21E28BC-03700	HATFIELD DEBORAH			PO BOX 323	ARLINGTON	OR	97812	805 W THIRD ST ARLINGTON OR 97812
03N21E28BC-03800	BIRKELAND ROGER & BIRKELAND TAMMIE			PO 599	ARLINGTON	OR	97812	850 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-03900	YOUNGREN KRISTINA & SANINO MICHAEL			PO BOX 183	ARLINGTON	OR	97812	825 W THIRD ST ARLINGTON OR 97812
03N21E28BC-04000	ARLINGTON SCHOOL DISTRICT #3			PO BOX 10	ARLINGTON	OR	97812	860 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-04100	JONES ALICE			PO BOX 306	ARLINGTON	OR	97812	880 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-04200	HANAN JEANNE C			502 ROSE ST APT 2	MILTON FREEWATER	OR	97862	925 W THIRD ST ARLINGTON OR 97812
03N21E28BC-04300	BORGHESE MATHEW			PO BOX 518	ARLINGTON	OR	97812	975 W THIRD ST ARLINGTON OR 97812
03N21E28BC-04400	BORGHESE GIOVANNA			PO BOX 69	ARLINGTON	OR	97812	1050 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-04500	GARCIA ISHMAEL			PO BOX 596	ARLINGTON	OR	97823	1025 W THIRD ST ARLINGTON OR 97812
03N21E28BC-04600	ADAY RICHARD DAVID & JESSICA M			PO BOX 132	ARLINGTON	OR	97812	375 W HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-04700	LARCH MIRANDA			PO BOX 374	ARLINGTON	OR	97812	325 W HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-04800	BURDICK KENNETH & ROSE			PO BOX 362	ARLINGTON	OR	97812	1095 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-04802	WALTERS DAVID RAY			PO BOX 424	ARLINGTON	OR	97812	1025 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-04803	SMART JOSHUA RAY			PO BOX 355	ARLINGTON	OR	97812	1075 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-04900	STEWARD SARAH D			PO BOX 267	ARLINGTON	OR	97812	935 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-05000	JACKSON JODY R			PO BOX 237	ARLINGTON	OR	97812	875 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-05103	JENKINS BURT & JOAN I			PO BOX 237	ARLINGTON	OR	97812	975 W FOURTH ST ARLINGTON OR 97812
03N21E28BC-05105	HELGERSON ROBERT G & MONA J			PO BOX 551	ARLINGTON	OR	97812	970 W FIFTH ST ARLINGTON OR 97812
03N21E28BC-05106	MCKINNEY LYNDA			PO BOX 454	ARLINGTON	OR	97812	405 HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-05200	TROUTMAN SHAWN E & CINDY J			PO BOX 481	ARLINGTON	OR	97812	825 W FIFTH ST ARLINGTON OR 97812
03N21E28BC-05300	DAVIDSON MARK A & KATHERINE D			PO BOX 434	ARLINGTON	OR	97812	875 W FIFTH ST ARLINGTON OR 97812
03N21E28BC-05301	SALLEY JOHN EARL			PO BOX 44	ARLINGTON	OR	97812	925 W FIFTH ST ARLINGTON OR 97812
03N21E28BC-05302	AKERS CHERYLL A			PO BOX 294	ARLINGTON	OR	97812	975 W FIFTH ST ARLINGTON OR 97812
03N21E28BC-05303	BROWN CAROLYN A			PO BOX 273	ARLINGTON	OR	97812	1095 W FIFTH ST ARLINGTON OR 97812

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MAP TAX LOT	OWNERSHIP	AGENT	IN_CARE_OF	M_ADDRESS	M_CITY	M_STATE	M_ZIP	SITUS
03N21E28BC-05500	COLUMBIA HILLS MANOR INC			PO BOX 357	ARLINGTON	OR	97812	350 W HEMLOCK ST ARLINGTON OR 97812
03N21E28BC-05800	AAMODT MARY APRIL			PO BOX 24	ARLINGTON	OR	97812	1150 W THIRD ST ARLINGTON OR 97812
03N21E28BC-06000	AAMODT DARRELL V & MARY A			PO BOX 24	ARLINGTON	OR	97812	1175 W SECOND ST ARLINGTON OR 97812
03N21E28BC-06100	BECKTOLD ISAAC R			PO BOX 422	ARLINGTON	OR	97812	1100 W SECOND ST ARLINGTON OR 97812
03N21E28BC-06400	HANSFORD AMY L			1201A GRANDRIDGE RD	GRANDVIEW	WA	98930-9691	1150 W SECOND ST ARLINGTON OR 97812
03N21E28BC-06501	BEARD MATHEW DEAN			PO BOX 491	ARLINGTON	OR	97812	1175 W FIRST ST ARLINGTON OR 97812
03N21E28BC-06600	WETHERELL KRISTINE			PO BOX 335	ARLINGTON	OR	97812	1195 W FIRST ST ARLINGTON OR 97812
03N21E28BC-06700	BORGHESE MARK			PO BOX 69	ARLINGTON	OR	97812	1155 W FIRST ST ARLINGTON OR 97812
03N21E28BC-06800	ANDERSON DAVID K			PO BOX 156	ARLINGTON	OR	97812	1135 W FIRST ST ARLINGTON OR 97812
03N21E28BC-06900	MUNDY JAMES & BIRGIT			PO BOX 458	ARLINGTON	OR	97812	1115 W FIRST ST ARLINGTON OR 97812
03N21E28BC-07000	DAVIDSON MARK A & KATHERINE D			PO BOX 434	ARLINGTON	OR	97812	1110 W FIRST ST ARLINGTON OR 97812
03N21E28BC-07001	FOSTER DAVID B & LEONA D			PO BOX 244	ARLINGTON	OR	97812	1125 MAIN ST ARLINGTON OR 97812
03N21E28BC-07100	KIRKPATRICK MARTHA			PO BOX 27	ARLINGTON	OR	97812	1120 W FIRST ST ARLINGTON OR 97812
03N21E28BC-07400	LOGAN PENNY L			11575 N RIVER ROAD #5	PAYETTE	ID	83661	1175 MAIN ST ARLINGTON OR 97812
03N21E28BD-00100	EISELE GAIL F			PO BOX 327	ARLINGTON	OR	97812	900 E THIRD ST ARLINGTON OR 97812
03N21E28BD-00201	HOFFMAN SHAYNE D			PO BOX 115	ARLINGTON	OR	97812	1000 E THIRD ST ARLINGTON OR 97812
03N21E28BD-00300	GALVIN JACK A & JUDITH			PO BOX 313	ARLINGTON	OR	97812	1050 E THIRD ST ARLINGTON OR 97812
03N21E28BD-00400	O'BRIEN MICHAEL			827 HWY 15 S	SAINT GEORGE	SC	29477-7148	1075 E THIRD ST ARLINGTON OR 97812
03N21E28BD-00900	NUFERROUS CATHERINE M			PO BOX 25	ARLINGTON	OR	97812	825 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BD-01000	NIELSEN CHRIS			PO BOX 11	ARLINGTON	OR	97812	875 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BD-01501	DAVIDSON MARK A & KATHERINE D			PO BOX 434	ARLINGTON	OR	97812	1025 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BD-01600	METHODIST CHURCH OF ARLINGTON		RUCKER ALENE TREASURER	PO BOX 417	ARLINGTON	OR	97812	150 HEMLOCK ARLINGTON OR 97812
03N21E28BD-01800	WHITMORE BRANDON J			1075 COTTONWOOD ST	ARLINGTON	OR	97812	1075 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BD-02000	DAVIDSON MICHAEL S & TIENA J			PO BOX 63	ARLINGTON	OR	97812	175 HEMLOCK ST ARLINGTON OR 97812
03N21E28BD-02001	MITCHELL S MARK & MARY H			PO BOX 275	ARLINGTON	OR	97812	30 SHANE DR ARLINGTON OR 97812
03N21E28BD-02002	SCHMIDT OPAL M			PO BOX 97	ARLINGTON	OR	97812	1095 COTTONWOOD ST ARLINGTON OR 97812
03N21E28BD-02100	MABE KAREN			PO BOX 486	ARLINGTON	OR	97812	75 E HEMLOCK ST ARLINGTON OR 97812
03N21E28BD-02200	NAVARRO LORENA GONZALES			510 SIDNEY ST	ROCK SPRINGS	WY	82901	1190 MAIN ST ARLINGTON OR 97812
03N21E28BD-02300	WILLIAMSON ERIC W & DOPKE HAILEY F			PO BOX 14	ARLINGTON	OR	97812	1150 MAIN ST ARLINGTON OR 97812
03N21E28BD-02600	REW TRUMAN L TRUSTEE			PO BOX 307	ARLINGTON	OR	97812	1100 MAIN ST ARLINGTON OR 97812
03N21E28BD-02800	WETHERELL BEN L & DIANE			PO BOX 219	ARLINGTON	OR	97812	1050 MAIN ST ARLINGTON OR 97812
03N21E28BD-02900	DYER MARK & JANICE TRUSTEES			PO BOX 21	ARLINGTON	OR	97812	1070 MAIN ST ARLINGTON OR 97812
03N21E28BD-03000	TUTUVANU PILI			PO BOX 401	ARLINGTON	OR	97812	25 FIR ST ARLINGTON OR 97812
03N21E28BD-03100	DAVIDSON MARK A & KATHERINE D			PO BOX 434	ARLINGTON	OR	97812	850 MAIN ST ARLINGTON OR 97812
03N21E28BD-03501	GILLIAM COUNTY (SENIOR TRANSPORT)			PO BOX 427	CONDON	OR	97823	1150 COTTONWOOD ST ARLINGTON OR 97812
03N21E28CA-00101	ATKINS MARGARET F & RICHARD N			PO BOX 251	ARLINGTON	OR	97812	160 SHANE DR ARLINGTON OR 97812
03N21E28CA-00200	MCGUIRE RODNEY H			66325 UPPER ROCK CREEK RD	ARLINGTON	OR	97812	150 SHANE DR ARLINGTON OR 97812
03N21E28CA-00300	ARLINGTON CHILDCARE CENTER INC			PO BOX 575	ARLINGTON	OR	97812	1350 E SECOND ST ARLINGTON OR 97812
03N21E28CA-00301	WALSH CASSIE JO			PO BOX 333	ARLINGTON	OR	97812	225 SHANE DR ARLINGTON OR 97812
03N21E28CA-00302	IRBY MATTHEW G & BONNIE L			PO BOX 247	ARLINGTON	OR	97812	1330 E SECOND ST ARLINGTON OR 97812
03N21E28CA-00500	JOHNSON WAYDE L			PO BOX 461	ARLINGTON	OR	97812	115 SHANE DR ARLINGTON OR 97812
03N21E28CA-00600	COVEY KATHY			PO BOX 392	ARLINGTON	OR	97812	125 SHANE DR ARLINGTON OR 97812
03N21E28CA-00700	STITES JOHN A & CAROL A			PO BOX 322	ARLINGTON	OR	97812	1325 E SECOND ST ARLINGTON OR 97812
03N21E28CA-00701	SIMPSON GREGORY & BRYNNIE			PO BOX 737	MOSIER	OR	97040	1305 E SECOND ST ARLINGTON OR 97812
03N21E28CA-00702	RHODES REBECCA J			PO BOX 386	ARLINGTON	OR	97812	1345 E SECOND ST ARLINGTON OR 97812
03N21E28CA-00704	MARGHEIM CINDY S TRUSTEE			PO BOX 478	ARLINGTON	OR	97812	1335 E SECOND ST ARLINGTON OR 97812

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03N21E28CA-00900	LLAMAS SAUL & KINDRA			PO BOX 1306	BOARDMAN	OR	97818	1260 W FIRST ST ARLINGTON OR 97812
03N21E28CA-00901	BRICE ARIE JAMES & KARRIE BERNICE			PO BOX 232	ARLINGTON	OR	97823	80 W IVY ST ARLINGTON OR 97812
03N21E28CA-01000	VANDOOZER DUSTIN A			24035 NE HOLLADAY ST	WOOD VILLAGE	OR	97060	UNDETERMINED SITUS ADDRESS
03N21E28CA-01200	SALAZAR ROBERT & TAMMI			1123 OLIVE DR	DAVIS	CA	95616	1290 MAIN ST ARLINGTON OR 97812
03N21E28CB-00100	JACKSON CHRISTOPHER JAY			PO BOX 366	ARLINGTON	OR	97812	1235 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00200	JOHNSON WAYDE L			PO BOX 461	ARLINGTON	OR	97812	1245 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00301	BRANDT PATTI J			PO BOX 1062	TEHACHAPI	CA	93581-1062	1240 SECOND ST ARLINGTON OR 97812
03N21E28CB-00302	VALDEZ MARCO A & JULIANN			PO BOX 69	ARLINGTON	OR	97812	1305 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00303	GABBEY JERRY R			PO BOX 433	ARLINGTON	OR	97812	1270 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00304	DAVIDSON AUSTA ANDY HOLDINGS LLC			18174 HULDEN LN	ARLINGTON	OR	97812	1290 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00305	ORENDORFF BRITTNEY L			PO BOX 52	ARLINGTON	OR	97812	1260 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00306	CRAIN GREGORY DANIEL & MASTRIONA SARAH M			PO BOX 555	ARLINGTON	OR	97812	1315 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00307	CHINA CREEK PROPERTIES LLC			4893 7TH AVE SE	SALEM	OR	97302	1280 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00308	TERP TODD H & BERNAL SHERI L			PO BOX 163	ARLINGTON	OR	97812	1250 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00309	WALTERS DONALD K & SHERYL A			69759 HWY 19	ARLINGTON	OR	97812	1265 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00310	FOSTER BRIAN L			PO BOX 43	ARLINGTON	OR	97812	1255 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00311	301DUPLEX LLC			2001 MAIN ST STE 120	VANCOUVER	WA	98660-2673	1275 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00312	GIVENS ALLEN & ANNA			PO BOX 565	ARLINGTON	OR	97812	1285 W FIRST ST ARLINGTON OR 97812
03N21E28CB-00400	EATON ANTHONY N & LILLIE K			PO BOX 535	ARLINGTON	OR	97812	1220 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00402	GUYER SANDRA L			320 N COLUMBUS AVE APT 1	GOLDENDALE	WA	98620-9411	1230 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00500	BUFTON JEFFERY C & PATTERSON KAY M			PO BOX 177	ARLINGTON	OR	97812	1225 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00600	WEBBER JAMES & KEENAN		JACKSON ELANA	PO BOX 114	ARLINGTON	OR	97812	350 W IVY ST ARLINGTON OR 97812
03N21E28CB-00601	MUNDY BRIAN & ANGELA			PO BOX 465	ARLINGTON	OR	97812	1220 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-00604	FARRAR KIMBERELY A TRUSTEE	VANDOOZER DUSTIN A		24035 NE HOLLADAY ST	WOOD VILLAGE	OR	97060	UNDETERMINED SITUS ADDRESS
03N21E28CB-00605	PICKNELL-LEDREW PROPERTIES		HOLT LAURA	1008 SW 37TH ST	PENDLETON	OR	97801	310 IVY ST ARLINGTON OR 97812
03N21E28CB-00606	FARRAR KIMBERELY TRUSTEE	VANDOOZER DUSTIN A		24035 NE HOLLADAY ST	WOOD VILLAGE	OR	97060	330 IVY ST ARLINGTON OR 97812
03N21E28CB-00700	SWOPE MARSHALL & FRYE-SWOPE NANCY			PO BOX 301	ARLINGTON	OR	97812	1275 W SECOND ST ARLINGTON OR 97812
03N21E28CB-00801	PEMBERTON ELIZABETH			PO BOX 345	ARLINGTON	OR	97812	225 JUNIPER CT ARLINGTON OR 97812
03N21E28CB-00900	JONES STEVEN W & MARGURETTE M			PO BOX 464	ARLINGTON	OR	97812	200 JUNIPER CT ARLINGTON OR 97812
03N21E28CB-01000	OLSEN KEVIN			PO BOX 305	ARLINGTON	OR	97812	1325 W SECOND ST ARLINGTON OR 97812
03N21E28CB-01100	BLACKWELL DAVID D SR & KELLY J			PO BOX 509	ARLINGTON	OR	97812	1365 W SECOND ST ARLINGTON OR 97812
03N21E28CB-01200	EVANS RONNY H & CAROL J			PO BOX 95	ARLINGTON	OR	97812	1395 W SECOND ST ARLINGTON OR 97812
03N21E28CB-01301	KIRKSEY ROBERT R & JEANNIE			PO BOX 517	ARLINGTON	OR	97812	1260 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01400	PEMBERTON BETH			PO BOX 345	ARLINGTON	OR	97812	1250 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01500	MORTON MICHAEL			PO BOX 193	ARLINGTON	OR	97812	520 W IVY ST ARLINGTON OR 97812
03N21E28CB-01501	STEWARD PHYLLIS			PO BOX 263	ARLINGTON	OR	97812	1200 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01502	FARRAR KIMBERLY A TRUSTEE	VANDOOZER DUSTIN A		24035 NE HOLLADAY ST	WOOD VILLAGE	OR	97060	UNDETERMINED SITUS ADDRESS
03N21E28CB-01503	FARRAR KIMBERLY A TRUSTEE	VANDOOZER DUSTIN A		24035 NE HOLLADAY ST	WOOD VILLAGE	OR	97060	UNDETERMINED SITUS ADDRESS
03N21E28CB-01504	CECIL RONALD E			PO BOX 395	ARLINGTON	OR	97812	355 IVY ST ARLINGTON OR 97812
03N21E28CB-01506	WALKER MICHAEL JOHN			PO BOX 394	ARLINGTON	OR	97812	1125 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01507	POTTER DARREL & JEANETTE			PO BOX 598	ARLINGTON	OR	97812	1115 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01508	KROCKER GERALD J JR			PO BOX 33	ARLINGTON	OR	97812	1135 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01600	GOAD ROBERT JAMES & CHRISTINE ANN			PO BOX 474	ARLINGTON	OR	97812	500 W IVY ST ARLINGTON OR 97812
03N21E28CB-01700	RUCKER JIMMY I & SARAH D TRUSTEES			69064 WEATHERFORD RD	ARLINGTON	OR	97812	575 IVY ST ARLINGTON OR 97812
03N21E28CB-01701	WETHERELL TIMOTHY J & DANELLE			PO BOX 280	ARLINGTON	OR	97812	1215 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01702	WILKINS JEFF C & KATHY SUE			PO BOX 253	ARLINGTON	OR	97812	1235 W FIFTH ST ARLINGTON OR 97812

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03N21E28CB-01703	WALTERS SANDY L			PO BOX 343	ARLINGTON	OR	97812	1205 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-01704	COURTNEY JULIUS & ALICE			PO BOX 579	ARLINGTON	OR	97812	1425 MAIN ST ARLINGTON OR 97812
03N21E28CB-01705	RICHTER JANET L			PO BOX 56	ARLINGTON	OR	97812	525 W IVY ST ARLINGTON OR 97812
03N21E28CB-01707	WILLIAMSON VANESSA J ET UX			PO BOX 431	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28CB-01800	WEBB STEVEN M & DONNA			PO BOX 403	ARLINGTON	OR	97812	1225 W FIFTH ST ARLINGTON OR 97812
03N21E28CB-02200	SALLEE JOHN E & MARY E			PO BOX 131	ARLINGTON	OR	97812	1490 MAIN ST ARLINGTON OR 97812
03N21E28CD-00100	MILLER RONNIE E & SHARON J			PO BOX 455	ARLINGTON	OR	97812	1105 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00200	SLOAN CHRISTOPHER K & ADRIANA ESCOBAR			PO BOX 337	ARLINGTON	OR	97812	1115 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00300	MCMAHON CARLA			PO BOX 537	ARLINGTON	OR	97812	1125 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00400	JAEGER REBECCA SUE & IRZYK JUSTIN			PO BOX 26	ARLINGTON	OR	97812	1135 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00500	CLAWSON KEVIN			PO BOX 74	ARLINGTON	OR	97823	1145 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00600	FROEHLICH JEFFREY			1155 COLUMBIA VIEW DR	ARLINGTON	OR	97812	1155 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00700	WILLIAMSON GENE B & TAMI R			PO BOX 254	ARLINGTON	OR	97812	1165 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00702	WILLIAMSON GENE B & TAMI R			PO BOX 254	ARLINGTON	OR	97812	1163 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00800	DAVIDSON KEVIN S & SCOTT ANNELIESE C			PO BOX 236	ARLINGTON	OR	97812	1170 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-00900	LANTZ TOD C			PO BOX 423	ARLINGTON	OR	97812	1425 SUNSET CT ARLINGTON OR 97812
03N21E28CD-01200	MANN ROBERT A & MANN SALLY J			PO BOX 547	ARLINGTON	OR	97812	1465 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-01300	HAMMER NATHAN L & LESLEE A			PO BOX 91	ARLINGTON	OR	97812	1445 SUNSET CT ARLINGTON OR 97812
03N21E28CD-01400	KEISEL BRETT R & APRIL D			PO BOX 566	ARLINGTON	OR	97812	1415 SUNSET CT ARLINGTON OR 97812
03N21E28CD-01500	HOSKOT TOM S			PO BOX 231	ARLINGTON	OR	97812	1160 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28CD-01600	SALLEE JEFFREY S			PO BOX 130	ARLINGTON	OR	97812	1400 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-01800	GILMORE LACI JAE			PO BOX 224	ARLINGTON	OR	97812	1420 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-01900	TUELL MICHELLE			PO BOX 51	ARLINGTON	OR	97823	1430 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-02200	NEAL GARTH R			PO BOX 154	ARLINGTON	OR	97812	1460 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-02300	RASHEED FAHEEM			908 LILLIAN WAY	THE DALLES	OR	97058	1470 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-02400	COPHER TEDDY L & DEBRA A			PO BOX 543	ARLINGTON	OR	97812	1480 PROCTOR RD ARLINGTON OR 97812
03N21E28CD-02700	HUGHES MATT A & CARMELA L			PO BOX 591	ARLINGTON	OR	97812	1375 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-02900	OLAEZ TERESA VALLE DE ET AL			2302 WELLS DR	HOOD RIVER	OR	97031	1355 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-03100	CAUDILL ELI M			PO BOX 752	CONDON	OR	97823	1335 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-03300	KIMSEY MICHAEL			PO BOX 55	ARLINGTON	OR	97812	1315 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-03500	MULHOLLAND ROBERT C ET AL			PO BOX 234	ARLINGTON	OR	97812	1300 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-03600	MULHOLLAND ROBERT C & PATRICIA E			PO BOX 234	ARLINGTON	OR	97812	1310 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-03700	CARPENTER TIMOTHY R & DIANN P			PO BOX 447	ARLINGTON	OR	97812	1320 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-03900	WUNDERLE DIANA & RATLIFF PATRICK			PO BOX 531	ARLINGTON	OR	97812	1340 CHILDERS RD ARLINGTON OR 97812
03N21E28CD-04200	LATINO JOHN			PO BOX 536	ARLINGTON	OR	97812	1370 CHILDERS RD ARLINGTON OR 97812
03N21E28DB-00200	NORTH GILLIAM CO RFPD			PO BOX 476	ARLINGTON	OR	97812	1500 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00203	NESS & CAMPBELL CRANE AND RIGGING (DBA)			PO BOX 20517	PORTLAND	OR	97294	UNDETERMINED SITUS ADDRESS
03N21E28DB-00300	P STEP STORAGE LLC			PO BOX 246	CONDON	OR	97823	1480 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00601	STEEVES JEFF & HEATHER			PO BOX D	ARLINGTON	OR	97812	240 SHANE DR ARLINGTON OR 97812
03N21E28DB-00602	MILLIRON PAUL ROBERT JR		WALDRON KATHERINE	1131 NE HOLLINSHEAD CT	BEND	OR	97701	440 SHANE DR ARLINGTON OR 97812
03N21E28DB-00603	THUENER HENRY A III			PO BOX 321	ARLINGTON	OR	97812	450 SHANE DR ARLINGTON OR 97812
03N21E28DB-00604	VAUGHN BOBBI JO & DANZE SETH			PO BOX 507	ARLINGTON	OR	97823	400 SHANE DR ARLINGTON OR 97812
03N21E28DB-00605	WILKINS BRIAN R & SHERRIE E			PO BOX 157	ARLINGTON	OR	97812	300 SHANE DR ARLINGTON OR 97812
03N21E28DB-00608	CLOE JIM H			PO BOX 311	ARLINGTON	OR	97812	1395 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00614	GUNTER ASHLEIGH			161 OAK RIDGE AVE	SUMMIT	NJ	07901-4308	1535 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00615	HAYES GLENDA			PO BOX 506	ARLINGTON	OR	97812	1545 COTTONWOOD ST ARLINGTON OR 97812

Noise-Sensitive Properties within 1 Mile of Facility Site Boundary
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility, Gilliam County, Oregon
Data received from Gilliam County Assessor's Office on January 4, 2024.

MAP TAX LOT	OWNERSHIP	AGENT	IN_CARE_OF	M_ADDRESS	M_CITY	M_STATE	M_ZIP	SITUS
03N21E28DB-00616	WILKINS GRANT & TIFFANY			PO BOX 323	ARLINGTON	OR	97812	1555 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00617	CHINA CREEK PROPERTIES LLC			4893 7TH AVE SE	SALEM	OR	97302	1565 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00618	CHINA CREEK PROPERTIES LLC			4893 7TH AVE SE	SALEM	OR	97302	1575 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00619	GRONQUIST KELLY MICHAEL			PO BOX 552	ARLINGTON	OR	97812	1585 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00620	SITTON DAVID L			PO BOX 396	ARLINGTON	OR	97812	1595 COTTONWOOD ST ARLINGTON OR 97812
03N21E28DB-00621	JP MORGAN CHASE BANK NA			3415 VISION DR	COLUMBUS	OH	43219	460 SHANE DR ARLINGTON OR 97812
03N21E28DB-00700	DAVIDSON STEVEN P & CYNTHIA			PO BOX 592	ARLINGTON	OR	97812	280 SHANE DR ARLINGTON OR 97812
03N21E28DB-00800	ESCOBEDO AUREO & MARIA			PO BOX 86	ARLINGTON	OR	97812	200 SHANE DR ARLINGTON OR 97812
03N21E28DB-00900	CHRISTMAS JEAN M & FRIDLEY GEOFFREY P			PO BOX 494	ARLINGTON	OR	97812	330 KRAMERIA CT ARLINGTON OR 97812
03N21E28DB-00901	KINCAID WADE ARTHUR			PO BOX 369	ARLINGTON	OR	97812	385 SHANE DR ARLINGTON OR 97812
03N21E28DB-00902	RUCKER FARMING			69064 WEATHERFORD RD	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28DB-00903	SEELEY DONALD CURTIS			PO BOX 568	ARLINGTON	OR	97812	375 SHANE DR ARLINGTON OR 97812
03N21E28DB-00904	DELGADO MARIA G			PO BOX 425	ARLINGTON	OR	97812	295 SHANE DR ARLINGTON OR 97812
03N21E28DB-00905	SHANNON LEAH & PATRICK			PO BOX 146	ARLINGTON	OR	97812	275 SHANE DR ARLINGTON OR 97812
03N21E28DB-00906	FERGUSON TENA L & DOUGLAS C			PO BOX 352	ARLINGTON	OR	97812	350 KRAMERIA CT ARLINGTON OR 97812
03N21E28DB-00907	CHILCOAT MICHAEL JOHN			PO BOX 26	ARLINGTON	OR	97812	345 SHANE DR ARLINGTON OR 97812
03N21E28DB-00908	MCCARTHY LEONARD B & SUSAN JOANNE			305 KRAMERIA ST	ARLINGTON	OR	97812	305 KRAMERIA DR ARLINGTON OR 97812
03N21E28DB-00909	SPENCER VALERIE			PO BOX 281	ARLINGTON	OR	97812	310 KRAMERIA ST ARLINGTON OR 97812
03N21E28DB-00912	MCCARTHY MOLLY ET AL			300 KRAMERIA CT	ARLINGTON	OR	97812	300 KRAMERIA CT ARLINGTON OR 97812
03N21E28DB-00913	DEEN JOHN DAVID & ANN H			PO BOX 340	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28DB-01000	DEEN-MCDONALD DOUGLAS JOSEPH ET AL			PO BOX 340	ARLINGTON	OR	97823	295 KRAMERIA ST ARLINGTON OR 97812
03N21E28DB-01001	JONES SUSAN L			PO BOX 186	ARLINGTON	OR	97812	335 KRAMERIA ST ARLINGTON OR 97812
03N21E28DB-01002	WILLIAMS VERLENE ET AL			PO BOX 477	ARLINGTON	OR	97812	315 KRAMERIA ST ARLINGTON OR 97812
03N21E28DB-01003	SMYTHE GARY			PO BOX 508	ARLINGTON	OR	97812	325 KRAMERIA ST ARLINGTON OR 97812
03N21E28DB-01006	MILLER MICHAEL A & JEANNEINE R			PO BOX 153	ARLINGRON	OR	97812	1095 COLUMBIA VIEW DR ARLINGTON OR 97812
03N21E28DB-01100	CHRISTENSEN NANCY			PO BOX 162	ARLINGTON	OR	97812	415 SHANE DR ARLINGTON OR 97812
03N21E28DB-01200	NUFERROUS CATHERINE M			PO BOX 25	ARLINGTON	OR	97812	425 SHANE DR ARLINGTON OR 97812
03N21E28DB-01300	MUNDY BRIAN C & ANGELA I			PO BOX 465	ARLINGTON	OR	97812	435 SHANE DR ARLINGTON OR 97812
03N21E28DB-01400	MCKINNEY MICHAEL & VICTORIA L			PO BOX 45	ARLINGTON	OR	97812	445 SHANE DR ARLINGTON OR 97812
03N21E28DB-01500	WRIGHT KIMBERLY ANN			60540 HWY 74	IONE	OR	97843-4341	455 SHANE DR ARLINGTON OR 97812
03N21E28DC-00104	SHEPPARD TAMMY LYNN & GENE ALLEN			1215 FAIRWAY LOOP	ARLINGTON	OR	97812	1215 FAIRWAY LP ARLINGTON OR 97812
03N21E28DC-00106	RUCKER LOUIS I & ALENE R TRUSTEES			PO BOX 416	ARLINGTON	OR	97812	1210 FAIRWAY LP ARLINGTON OR 97812
03N21E28DC-00107	WILCOX CYNTHIA SUE & LAWRENCE ADRIAN			PO BOX 553	ARLINGTON	OR	97812	1230 WRIGHT RD ARLINGTON OR 97812
03N21E28DC-00111	WEST JACK L & KAY F			PO BOX 427	ARLINGTON	OR	97812	1245 FAIRWAY LP ARLINGTON OR 97812
03N21E28DC-00112	MORRIS FRANCES L TRUST		MEADS RONA K	81379 CRAIG RD	HERMISTON	OR	97838	1255 FAIRWAY LP ARLINGTON OR 97812
03N21E28DC-00113	HAWKINS CHRISTOPHER			PO BOX F	ARLINGTON	OR	97812	UNDETERMINED SITUS ADDRESS
03N21E28DC-00600	WETHERELL TIMOTHY & DANELLE			PO BOX 280	ARLINGTON	OR	97812	1250 SUNRISE LN ARLINGTON OR 97812
03N21E28DC-00700	CAUDILL ELI			PO BOX 752	CONDON	OR	97823	1260 SUNRISE LN ARLINGTON OR 97812
03N21E28DC-00800	LONGACRE JAN K			PO BOX 87	ARLINGTON	OR	97812	1285 WRIGHT RD ARLINGTON OR 97812
03N21E28DC-00900	SCHADEWITZ RICK & SCHADEWITZ CARRIE			PO BOX 549	ARLINGTON	OR	97812	1275 WRIGHT RD ARLINGTON OR 97812
03N21E28DC-01000	SELLS SCOTTY L & MONICA			1265 WRIGHT RD	ARLINGTON	OR	97812	1265 WRIGHT RD ARLINGTON OR 97812
03N21E28DC-01100	GATES DAVID J			PO BOX 221	ARLINGTON	OR	97812	1255 WRIGHT RD ARLINGTON OR 97812
03N21E28DC-01300	KEOWN MICHAEL J & KARI L			PO BOX 255	ARLINGTON	OR	97812	1235 WRIGHT RD ARLINGTON OR 97812
03N21E28DC-01600	BARKLOW RANDALL A & JOYCE A			PO BOX 103	ARLINGTON	OR	97812	1205 WRIGHT RD ARLINGTON OR 97812
03N21E3400-00100	MCFARLANE PETE & SHEILA			PO BOX 216	ARLINGTON	OR	97812	74207 RHEA LN ARLINGTON OR 97812
03N21E3400-00107	BECKTOLD CHRISTINE E			18122 HULDEN LN	ARLINGTON	OR	97812	18122 HULDEN LN ARLINGTON OR 97812

Noise-Sensitive Properties within 1 Mile of Facility Site Boundary
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Leaning Juniper IIA Wind Power Facility, Gilliam County, Oregon
Data received from Gilliam County Assessor's Office on January 4, 2024.

MAP TAX LOT	OWNERSHIP	AGENT	IN_CARE_OF	M_ADDRESS	M_CITY	M_STATE	M_ZIP	SITUS
03N21E3400-00111	DAVIDSON DAVID W & LISA E			18174 HULDEN LN	ARLINGTON	OR	97812	18174 HULDEN LN ARLINGTON OR 97812
03N21E3400-00112	HARRIS WILLIAM D & LYNN A			PO BOX 503	ARLINGTON	OR	97812	74476 HWY 19 ARLINGTON OR 97812
03N21E3400-00115	TUCKER BENJAMAN L & MELODY K			PO BOX 116	ARLINGTON	OR	97812	18192 HULDEN LN ARLINGTON OR 97812
03N21E3400-00116	GRUBAUGH JOHN J & MARTY D			18216 HULDEN LN	ARLINGTON	OR	97812	18216 HULDEN LN ARLINGTON OR 97812
03N21E3400-00118	TIMMERMAN RUSSELL L & ANGELA L			18200 HULDEN LN	ARLINGTON	OR	97812	74409 HWY 19 ARLINGTON OR 97812
03N21E3400-00120	HERRA JESSE JOHN & TESSA CHRISTINE			73854 RATTLESNAKE RD	ARLINGTON	OR	97812	73854 RATTLESNAKE RD ARLINGTON OR 97812
03N21E3400-00302	BROWN AUSTIN D & KAYLA D			18217 HULDEN LN	ARLINGTON	OR	97812	18217 HULDEN LN ARLINGTON OR 97812

Attachment 25
2023 Wetlands and Nonwetland Waters Delineation Report

2023 Wetlands and Nonwetland Waters Delineation for the Leaning Juniper IIA Wind Power Facility

Document No: 230510175703_3d6856e0

Avangrid A member of the Iberdrola Group

Leaning Juniper IIA Repowering Project
September 2023

2023 Wetlands and Nonwetland Waters Delineation for the Leaning Juniper IIA Wind Power Facility

Client name:	Avangrid Renewables, LLC		
Project name:	Leaning Juniper IIA Repowering Project		
Document no:	230510175703_3d6856e0	**Project no:**	D3747400
Version:	Final	**Project manager:**	James Gregory/Jacobs
Date:	September 2023	**Prepared by:**	Cynthia Jones/Jacobs

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Acronyms and Abbreviations

amsl	above mean sea level
Facility	Leaning Juniper IIA Wind Power Facility
HUC	hydrologic unit code
Jacobs	Jacobs Engineering Group Inc.
NHD	National Hydrography Dataset
NWI	*National Wetlands Inventory*
OAR	Oregon Administrative Rule
PJD	preliminary jurisdictional determination
SWI	Statewide Wetland Inventory
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

Introduction

Jacobs Engineering Group Inc. (Jacobs) was retained by Avangrid Renewables, LLC, to conduct a wetland delineation at the Leaning Juniper IIA Wind Power Facility (Facility). Jacobs conducted the delineation on June 6 and 7, 2023, where construction activities are planned or where construction disturbance may occur (study area) (Figure 1 in Appendix A). The study area encompasses approximately 1,653 acres.

Wetland delineations were previously performed in the study area during the state energy facility siting process in 2005 (DSL #05-0142 and #07-0116; Avangrid Renewables 2006) and 2007 (DSL #09-0422; CH2M HILL 2009). Previous evaluations encompassed all of the current study area, and included additional areas that are not part of the current study area.

A) Landscape Setting and Land Use

The Facility is located in the Columbia Plateau physiographic region, primarily in the Pleistocene Lake Basins Level IV ecoregion, with the extreme southern portions located in the Umatilla Plateau ecoregion (Thorson et al. 2003). The landscape consists of gentle rolling hills, plateaus, and occasional rocky outcrops. These areas are regularly dissected by gently sloped to steep relict drainages and shallow vegetated swales. Area elevations range from approximately 666 feet above mean sea level (amsl) on the east side of the study area to approximately 1,161 feet amsl at the western end of the site. Vegetation communities in the site are primarily agricultural land with some relic shrub-steppe and grassland. Historical land use was dominated by wheat farming and livestock grazing. Current land use includes wheat farming, livestock grazing, and wind power generation.

The regional climate is arid, with average annual precipitation of approximately 9 inches (NRCS 2023a). The site is located within three watersheds – China Creek (hydrologic unit code [HUC] 170701011402) in the east part of the study area, Old Lady Canyon encompassing the central and majority of the study area (HUC 170701011405), and Blalock Canyon (HUC 170701011406) on the west side of the study area. Several National Hydrography Dataset (NHD) drainages are mapped through the study area. Drainages flow toward Blaylock Canyon on the west side, Jones Canyon in the center of the study area, and China Creek/Alkalai Canyon on the east side of the study area. All of these canyons are Columbia River tributaries.

B) Site Alterations

Vegetation throughout the site has been altered by historical and ongoing farming and wind power development. The headwaters of drainages in much of the site are currently or were historically managed as wheat fields with regular plowing and planting as part of the agricultural operations, eliminating traces of drainages in these areas. Drainages that traverse steeper unfarmed areas (because of slope or rocky soils) have more developed channels, apparently as the result of natural erosive processes. Additional site alterations include asphalt and gravel access roads, and dirt farm access roads, which may alter hydrological regimes.

C) Precipitation Data and Analyses

Fieldwork was conducted on June 6 and 7, 2023. Climate Analysis for Wetlands Tables ("WETS") data for the period 2 weeks prior to the survey were obtained from the Arlington weather station which is located approximately 2 miles north of the site (NRCS 2023a) (Table 1). Monthly weather summary data for the period of record (1971-2023) from Arlington station WETS data were obtained for the months immediately preceding the field survey during the water year (October 2022 to May 2023). These values were used to compare actual precipitation amounts against normal values for the study area (Table 2). Table 3 shows the observed rainfall compared to the NRCS WETS table 30% and 70% chance exceedance values for each of the 3 months preceding the field investigation (NRCS 2023a).

Average annual water year precipitation for the Arlington weather station is 7.91 inches (NRCS 2023a). Total precipitation for the water year prior to the field investigation (October 2022 through May 2023) was 7.10 inches (90 percent of the average total water year precipitation). Total precipitation for the 2 weeks prior to the field investigation was 0.13 inch. The U.S. Drought Monitor mapped the study area as "Abnormally Dry" as of June 20, 2023 (NDMC 2023).

Table 1. Daily and 2 Weeks Prior to Field Investigation Precipitation: Arlington, Oregon Station

Period	Precipitation (inches)
2 Weeks Prior to Field Investigation (May 23–June 5, 2023)	0.13
Field Investigation Dates (June 6-7, 2023)	0.00

Source: NRCS 2023a.

Table 2. Monthly Precipitation Data for the Water Year (October 2022–May 2023): Arlington, Oregon Station

Date	Actual Precipitation (inches)	Average Precipitation[a] (inches)[a]	Percent of Normal Rainfall
October 2022	0.63	0.71	89%
November 2022	1.35	1.17	115%
December 2022	2.27	1.61	141%
January 2023	0.65	1.35	48%
February 2023	0.21	0.92	23%
March 2023	0.76	0.81	94%
April 2023	0.67	0.63	106%
May 2023	0.56	0.71	79%
Totals	**7.10**	**7.91**	90%

Source: NRCS 2023a.

[a] Average precipitation for 1971-2023.

Table 3. Observed Rainfall Compared to the NRCS WETS Table 30% and 70% Chance Exceedance Values: Arlington, Oregon Station

Date	Actual Precipitation (inches)	30% to 70% Chance Exceedance Range (inches)
March 2023	0.76	0.43-0.98
April 2023	0.67M	0.27-0.76
May 2023	0.56	0.38-0.86
Totals	**1.99**	**1.08-2.60**

Source: NRCS 2023a.

Note: M = missing data during this period.

D) Methods

Jacobs performed a desktop study and field investigation in June 2023 to complete the delineation. Desktop study sources and field methods are discussed in the following sections.

D.1 Desktop Study

A review of existing literature, maps, and other materials was conducted to identify potential wetlands and other waters of the United States within the study area before initiating the field study. Existing documents reviewed included the following:

- Avangrid. Renewables, LLC. 2006. Energy Facility Site Certificate Application for Leaning Juniper Wind Power II. Exhibit J: Wetlands. https://www.oregon.gov/energy/facilities-safety/facilities/Pages/LJA.aspx
- CH2M HILL. 2009. *Preconstruction Survey Addendum to the Wetlands and Waters Delineation Report for the Leaning Juniper II Wind Power Facility—LJIIA. Gilliam County, Oregon.*
- Tax Lot Maps (geographic information system data for Gilliam County May 2023) (Figure 2 in Appendix A)
- *National Wetlands Inventory* (NWI) (USFWS 2023) (Figure 3 in Appendix A).
- U.S. Geological Survey (USGS) Topographic Map (National Geographic Society 2013)
- USGS 100K National Hydrography Dataset (NHD) – digital watercourse data (USGS 2023) (Figure 3 in Appendix A)
- *Web Soil Survey* (NRCS 2023b) (Figure 4 in Appendix A).
- Color aerial photography (ESRI Aerial Imagery 2023) (Figure 5 in Appendix A). Imagery is from March 26, 2019. Figure 5 also includes a portion of imagery from May 29, 2018.
- WETS Table: Arlington, Oregon Station (NRCS 2023a)

No hydric soils are mapped in the study area. NHD drainages are mapped in several locations in the study area; these features are also mapped as riverine wetlands in NWI. No other NWI wetlands are mapped in

the study area. One small freshwater pond is mapped outside of the study area on the northeast side near Highway 19 (Figure 3). Some wetland and drainage signatures can be seen on the aerial imagery.

D.2 Field Investigation

The field investigation was conducted by two Jacobs wetland biologists on June 6 and 7, 2023. A follow up site visit was conducted on August 17, 2023 to confirm conditions in an adjacent area not surveyed in June. Information from the desktop study was reviewed to identify areas mapped by NWI, NHD, and areas with potential signatures of water on aerial imagery. All NWI- and NHD-mapped features in the study area and areas with aerial signature were field-verified to determine whether they contained stream channels, wetlands, or other waters. All roads within the study area were driven to observe any additional potential wetlands, drainages, or culverts. Culvert locations were mapped and evaluated for potential indications of recent water flow or indications of bed and bank.

D.2.1 Wetlands

Field investigation of wetlands followed procedures in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008). Wetland biologists used *The National Wetland Plant List: 2020 Arid West Region Ratings* (USACE 2020) to determine the wetland indicator status of vegetation. Data sheets are located in Appendix B.

Two potential wetlands were evaluated in the field. Paired plots were evaluated at Wetland 1 – one plot met wetland criteria, and one did not meet criteria (see data sheets W1 SP1 and W1 SP2 in Appendix B). The wetland boundary was mapped at the vegetation between the upland and wetland determination sample points. Paired plots were evaluated for Wetland 2 (W2 SP1 and W2 SP2). Wetland criteria were not met at either point. However, a change in vegetation was visible, and this feature was conservatively mapped as a wetland (see Section E.1 for more information).

D.2.2 Nonwetland Waters

Only two NHD-mapped drainage locations in the study area had discernible bed and bank or showed indications of recent water flow. These locations (“Stream 1” and “Stream 2”) are different segments of the same NHD-mapped drainage, Jones Canyon (see Figure 6 in Appendix A and Photos 4 through 6 in Appendix C). For these features, Jacobs completed the Arid West Ephemeral and Intermittent Streams Ordinary High Water Mark (OHWM) data sheet (Curtis and Lichvar 2010), with additional reference to Lichvar and McColley (2008). Jacobs also completed the *Streamflow Duration Assessment Method* (Nadeau 2015) form to determine if the features had ephemeral, intermittent, or perennial flow regimes or showed signs of geomorphology, hydrology, and biology (Appendix B).

E) Description of All Wetlands and Other Nonwetland Waters

Two wetlands and two nonwetland waterways (stream channels) were identified within the study area (Figure 6).

E.1 Delineated Wetlands

Two wetlands were identified in the study area: Wetland 1 and Wetland 2 (see Figure 6 in Appendix A and Photos 1 through 3 in Appendix C). Table 4 summarizes the wetlands. Appendix B contains wetland determination data sheets.

Wetland 1 (Photo 1) is a swale adjacent to Stream 1. Wetland 2 is downstream and appears to be fed by runoff from a livestock watering station (Photo 2). Slow, continuous flow was observed at the tractor tires at the watering station, possibly groundwater fed. The water flows to Wetland 1, which appears to outlet into Stream 1 (no flow was observed in Stream 1 during the field survey).

Wetland 2 was previously mapped as a wetland (CH2M HILL 2009). During the field investigation in June 2023, there was evidence of inundation (cracked soil, change in vegetation), but it is unclear how recent the inundation was or if it was sustained enough to meet support wetland function. A sample point was evaluated within the feature (W2 SP1, Appendix B), but vegetation and soils wetland criteria were not met. One senescent wetland plant was observed (determined to be *Plagiobothrys scouleri* var. *cusickii*, based on best evidence), and one facultative species (*Polygonum aviculare*), but neither was dominant. The upland grass *Hordeum murinum* was dominant, and other upland grasses and forbs were observed in the area.

It is presumed that this area has experienced changes in hydrology due to roads built in the vicinity (to the northwest and northeast) and a generally drying trend (see Appendix A, Figure 6 Overview and Figure 6 Sheet 2; and Appendix D, Additional Information). Although this feature did not meet wetland criteria, it is conservatively identified as a wetland here because the duration of inundation cannot definitively be determined, and it is unknown whether wetland vegetation may have been dominant earlier in the growing season. Because soil refusal was encountered at 6 inches, the presence of hydric soil features also could not be ruled out.

Table 4 summarizes the wetlands identified within the study area.

Table 4. Wetlands Identified within Study Area

Wetland ID	Wetland Type	Area (acre)	Clean Water Act Section 404 Jurisdiction[a]	Oregon Removal-Fill Law Jurisdiction (PJD)[a]
Wetland 1	Palustrine emergent	0.071	No	Yes
Wetland 2	Palustrine emergent	0.095	No	Yes

[a] Preliminary jurisdictional determinations (PJDs) are advisory only. Final jurisdictional determinations are made by the regulatory agencies.

E.2 Nonwetland Waters

Two ephemeral drainages (Stream 1 and Stream 2) were identified during 2023 field surveys. These are different segments of the same NHD-mapped drainage, Jones Canyon (see Figure 6 in Appendix A and Photos 4 through 6 in Appendix C). Both were determined to be discontinuous ephemeral features. Evidence of flow in both features includes limited areas of soil cracking, and discernible bed and bank. The

channel of Stream 1 was better defined, and the channel was sparsely unvegetated in segments. Appendix B contains streamflow duration assessment method data sheets.

Stream 1 is assumed to receive runoff from Wetland 1, though no flow was present at the time of the survey. Indicators of bed and bank dissipate in Stream 1 just upstream of Wetland 1 at the mapped (but barely discernible) Rattlesnake Road. Some areas of cutbank were observed (6 to 12 inches high). Wetland and upland plants were observed in the channel. The sediment was similar between upland and channel areas. Both substrates are silty loam with some gravel and cobble. About 5 percent more cobble was observed in the channel. The channel may be formed from backflow from the wetland in this area. A barbed wire fence crossed the drainage at this location (west end of stream in study area). It is suspected that precipitation-fed flows are uncommon in the channel, and that the channel is primarily influenced by flow from the wetland. Stream 1 continues beyond the study area boundary to the east.

Stream 2 is a downstream segment of the same NHD-mapped feature (Jones Canyon) as Stream 1. The channel was discernible only on the upstream side of an unpaved access road and continues beyond the study area to the southwest. Downstream of the road, the feature flattens into a swale with no clear bed and banks. Upland grasses and shrubs occur in the channel and swale on both sides of the road. No culvert was observed under the road, indicating that the channel may be influenced by water pooling at the road.

Table 5 summarizes the nonwetland waters identified within the study area.

Table 5. Nonwetland Waters Identified within Study Area

Stream ID	Flow Regime	Maximum Width at Ordinary High Water Elevation (feet)	Length within Study Area (Linear feet)	Area within Study Area (acres)	Clean Water Act Section 404 Jurisdiction (PJD)[a]	Oregon Removal-Fill Law Jurisdiction (PJD)[a]
Stream 1	Ephemeral	3	292	0.017	No	No
Stream 2	Ephemeral	6	260	0.030	No	No

[a] Preliminary jurisdictional determinations (PJDs) are advisory only. Final jurisdictional determinations are made by the regulatory agencies.

No other NWI- or NHD-mapped features exhibit signs of recent flow, wetland vegetation, or discernible bed and bank. Photos 7 and 8 in Appendix C show areas of NHD-mapped drainages that did not exhibit these characteristics. Changes in hydrology are presumed to be related to agricultural conversion (Photo 7), the construction of roads, and a generally drying trend in the area.

F) Deviation from Statewide Wetland Inventory

The Statewide Wetland Inventory (SWI) is a screening tool to help identify approximate locations of wetlands and waterways. The SWI consists of wetland inventories and other natural resource mapping that identify approximate locations of wetlands and waters (e.g., streams, ponds), including local wetland inventories and NHD data. There are no SWI-mapped wetlands within the study area. The only wetland deviations from SWI are additions: the two wetland features described in Section E.1. NHD features are mapped in SWI in the study area. These were evaluated as discussed in Sections D above. Only two of the

NHD-mapped features that intersect the study area had observable bed and bank. These two discontinuous ephemeral streams are discussed in Section E.2.

G) Mapping Methods

Wetlands and nonwetland waters boundaries and sample plot and photo point locations were surveyed using an iPhone that had the above-mentioned base maps uploaded and a wireless connection to a Global Positioning System antenna (Geode) with submeter accuracy and real-time correction.

H) Additional Information

Appendix D contains a photo comparison showing changes in hydrologic influences and a change in signature in the vicinity of Wetland 2 between June 2006 and June 2019. These aerials are used for comparison because they were taken at the same time of year. More recent aerials were not available.

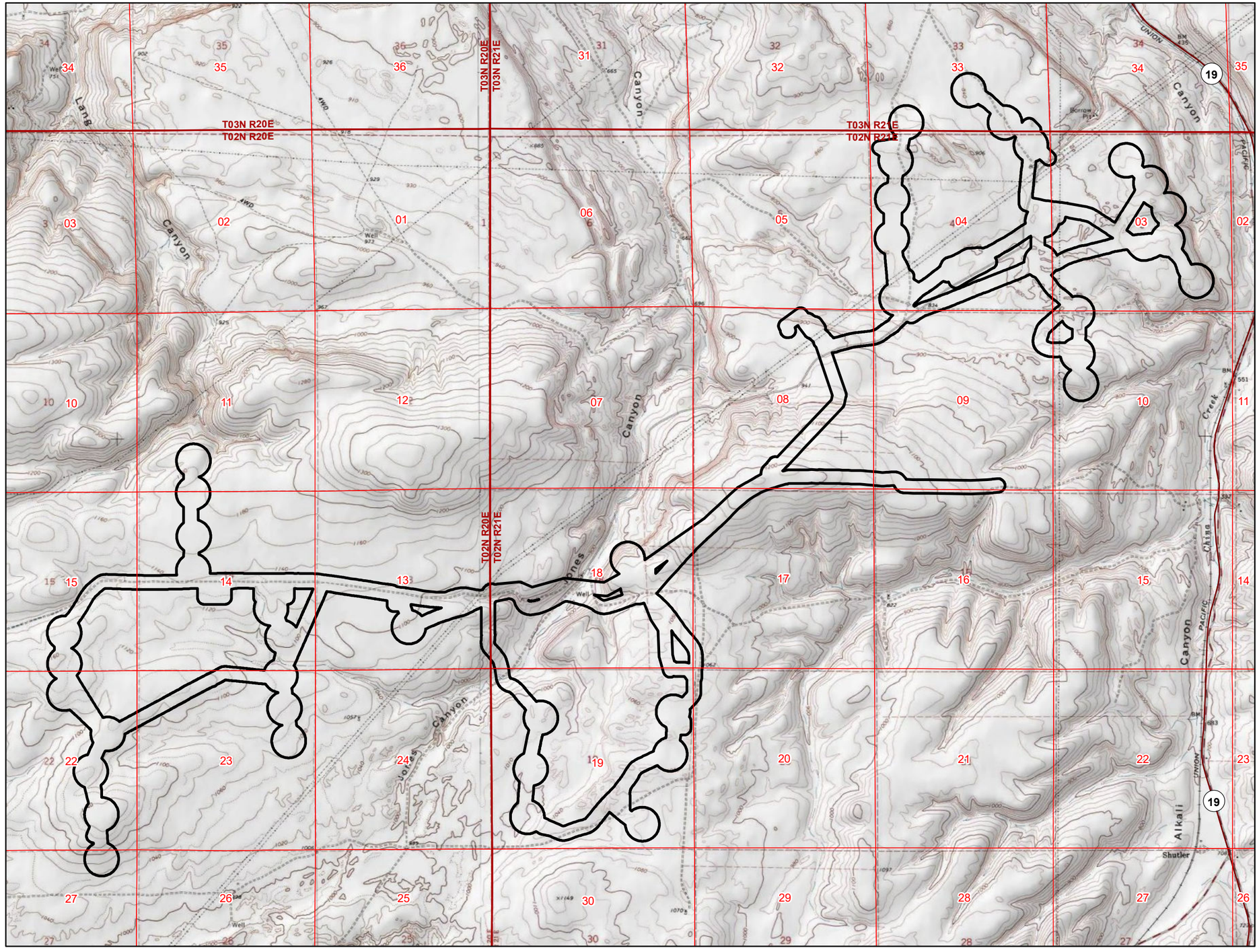
I) Results and Conclusions

Two wetlands and two nonwetland waters (discontinuous ephemeral drainages) were identified in the study area during the wetland field investigation. These features would likely not be considered federally jurisdictional under the recent Sackett v. Environmental Protection Agency ruling (5/25/23) because they are ephemeral and isolated.

J) Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be used at the reader's own risk until it has been approved in writing by the Oregon Department of State Lands in accordance with Oregon Administrative Rule (OAR) 141-090-0005 through 141-090-0055, and the U.S. Army Corps of Engineers in accordance with Section 404 of the Clean Water Act (OAR 141-090-0035 [7][k]).

Appendix A
Figures



Legend

- Study Area
- Township Range Boundary
- Section Boundary

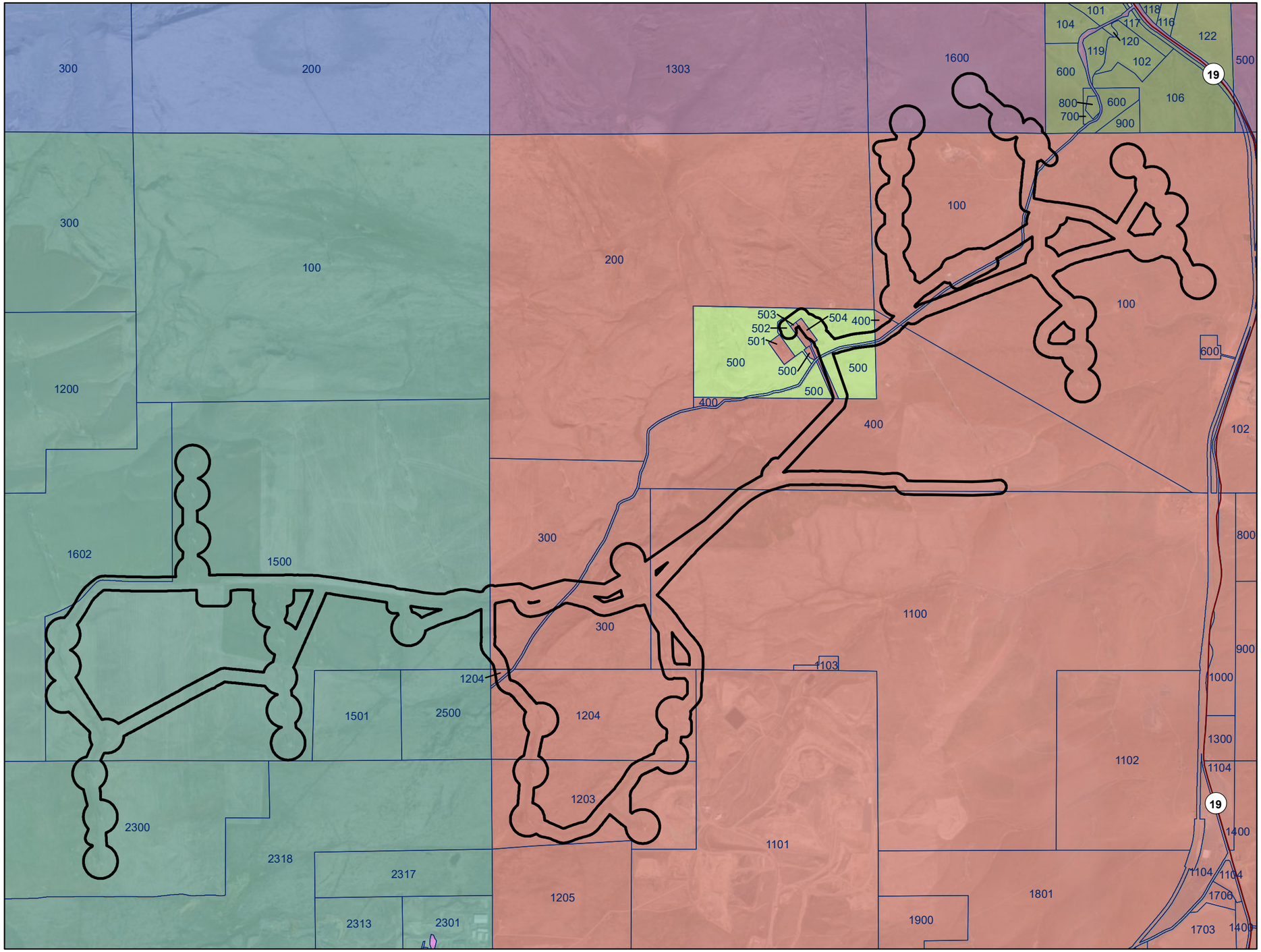
Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: USGS, Esri USA Topo Maps

N

0 0.25 0.5 1
Miles

Figure 1
USGS Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs



Legend

- Study Area
- Tax Lot

Tax Lot Map Number

- 02N20E
- 02N20E25
- 02N21E
- 02N21ED001
- 03N20E
- 03N21E
- 03N21E27CC
- 03N21E34

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery; Gilliam County Assessor

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Miles

Figure 2
Tax Lot Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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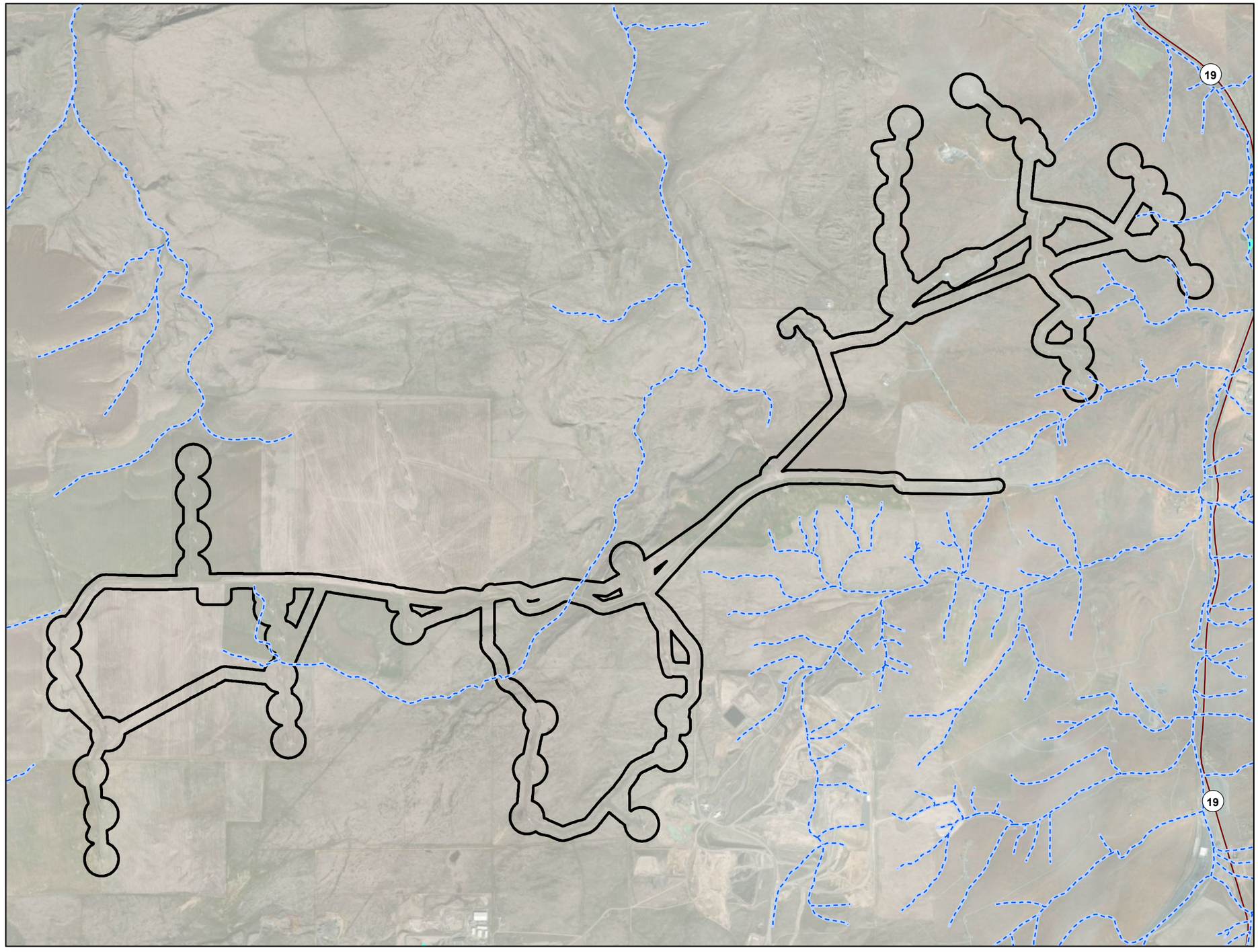

Legend

Study Area

National Hydrography Dataset

Stream or River

National Wetlands Inventory

Freshwater Pond

Riverine

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery; USGS; USFWS

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Miles

Figure 3
National Wetlands Inventory and National Hydrography Dataset
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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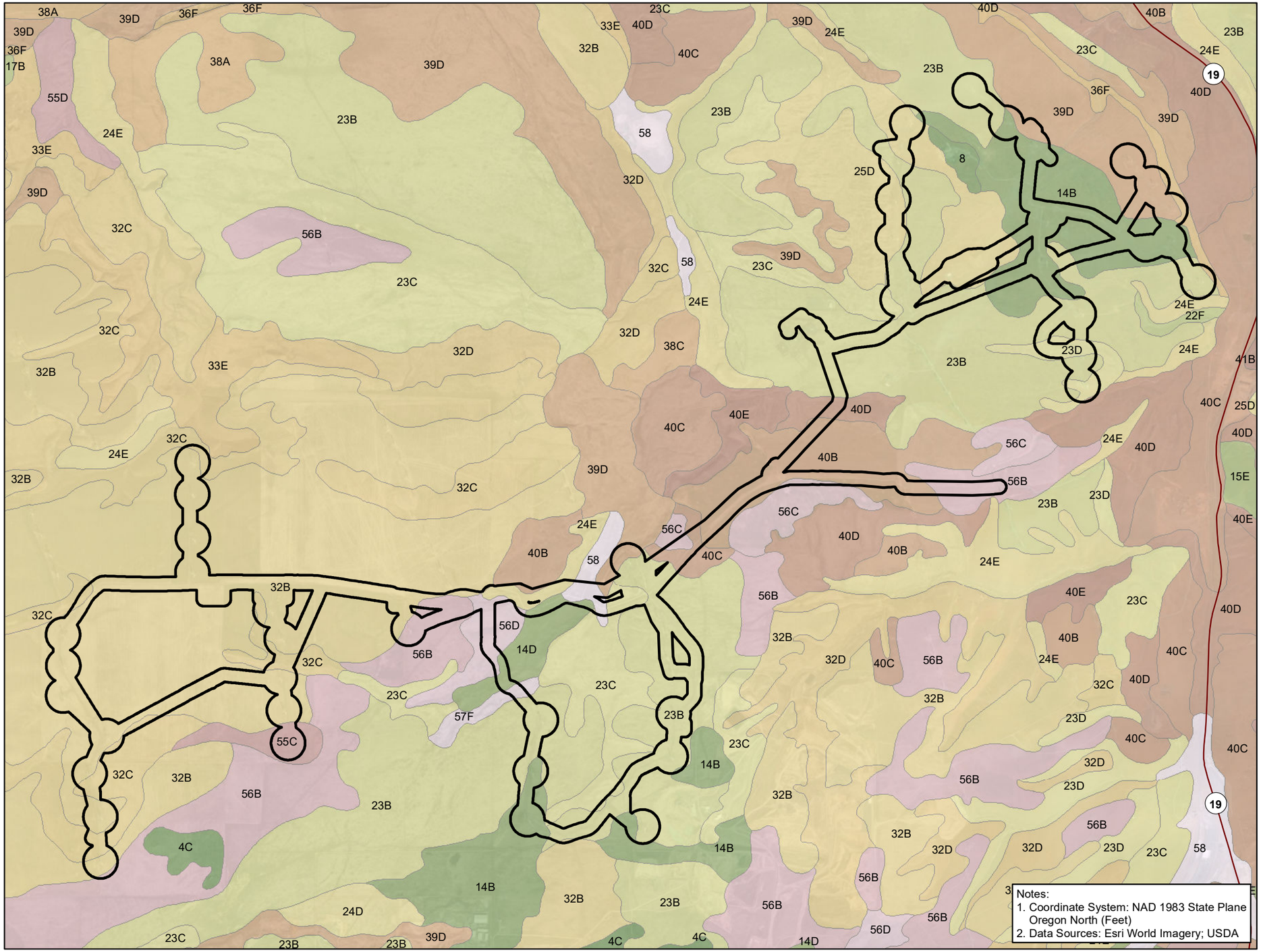


Legend

Study Area

Soils

- 4C: Blalock loam, 2 to 12 percent slopes
- 8: Dune land
- 14B: Krebs silt loam, 2 to 5 percent slopes
- 14D: Krebs silt loam, 5 to 20 percent slopes
- 15E: Lickskillet very stony loam, 7 to 40 percent slopes
- 17B: Mikkalo silt loam, 2 to 7 percent slopes
- 22F: Nansene silt loam, 35 to 70 percent slopes
- 23B: Olex silt loam, 0 to 5 percent slopes
- 23C: Olex silt loam, 5 to 12 percent slopes
- 23D: Olex silt loam, 12 to 20 percent slopes
- 24D: Olex gravelly silt loam, 5 to 20 percent slopes
- 24E: Olex gravelly silt loam, 20 to 40 percent slopes
- 25D: Olex-Roloff complex, 5 to 20 percent slopes
- 32B: Ritzville silt loam, 2 to 7 percent slopes
- 32C: Ritzville silt loam, 7 to 12 percent slopes
- 32D: Ritzville silt loam, 12 to 20 percent slopes
- 33E: Ritzville silt loam, 20 to 40 percent north slopes
- 36F: Rock outcrop-Rubble land complex, very steep
- 38A: Roloff silt loam, 0 to 2 percent slopes
- 38C: Roloff silt loam, 7 to 12 percent slopes
- 39D: Roloff-Rock outcrop complex, 1 to 20 percent slopes
- 40B: Sagehill fine sandy loam, 2 to 5 percent slopes
- 40C: Sagehill fine sandy loam, 5 to 12 percent slopes
- 40D: Sagehill fine sandy loam, 12 to 20 percent slopes
- 40E: Sagehill fine sandy loam, 20 to 40 percent slopes
- 41B: Sagehill fine sandy loam, hummocky, 2 to 5 percent slopes
- 41C: Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes
- 55C: Warden silt loam, 5 to 12 percent slopes
- 55D: Warden silt loam, 12 to 20 percent slopes
- 56B: Willis silt loam, 2 to 5 percent slopes
- 56C: Willis silt loam, 5 to 12 percent slopes
- 56D: Willis silt loam, 12 to 20 percent slopes
- 57F: Wrentham-Rock outcrop complex, 35 to 70 percent slopes
- 58: Xeric Torrifluvents, nearly level

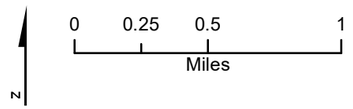
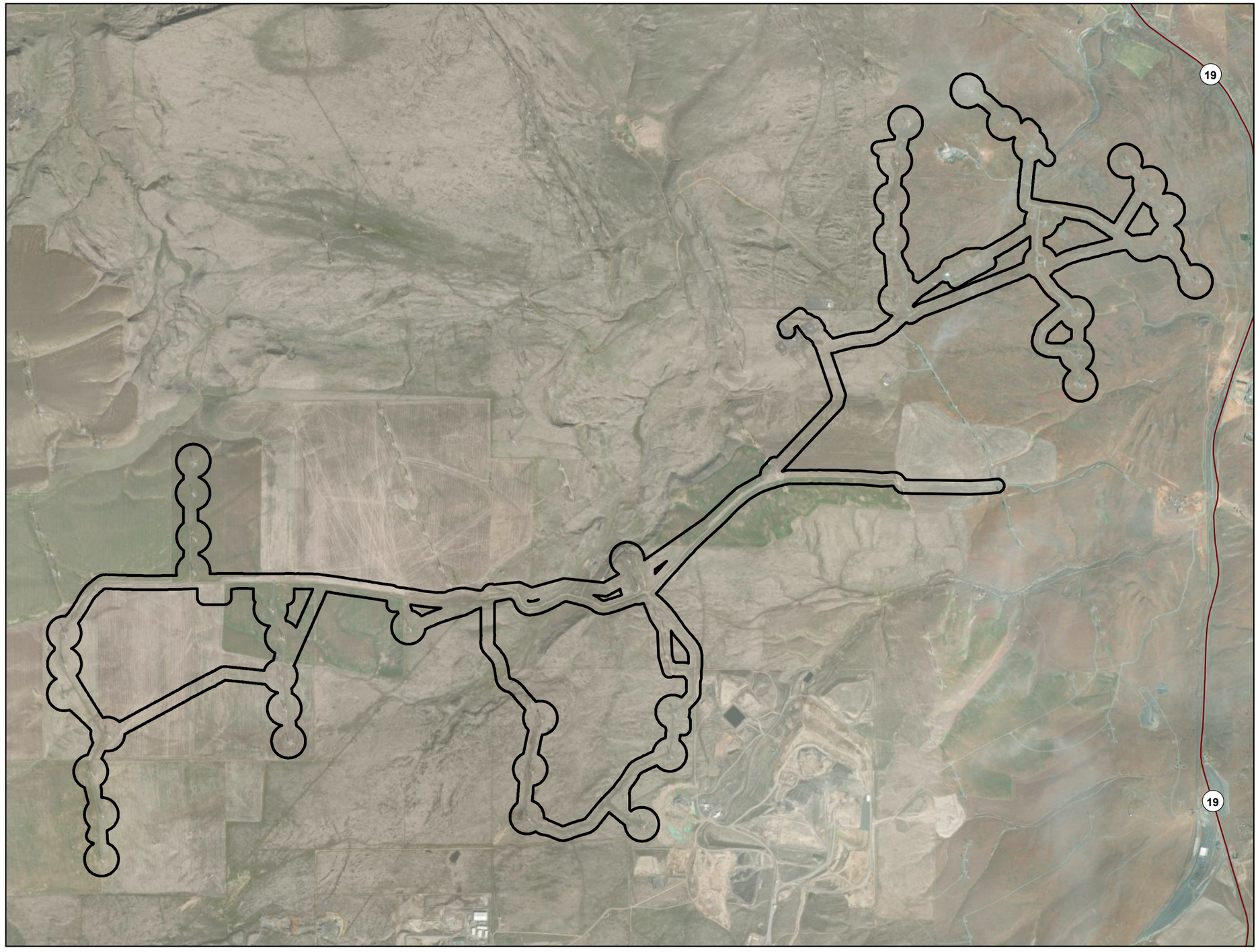


Figure 4
Soils Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs



Legend

Study Area

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery

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Miles

Figure 5
Aerial Photograph
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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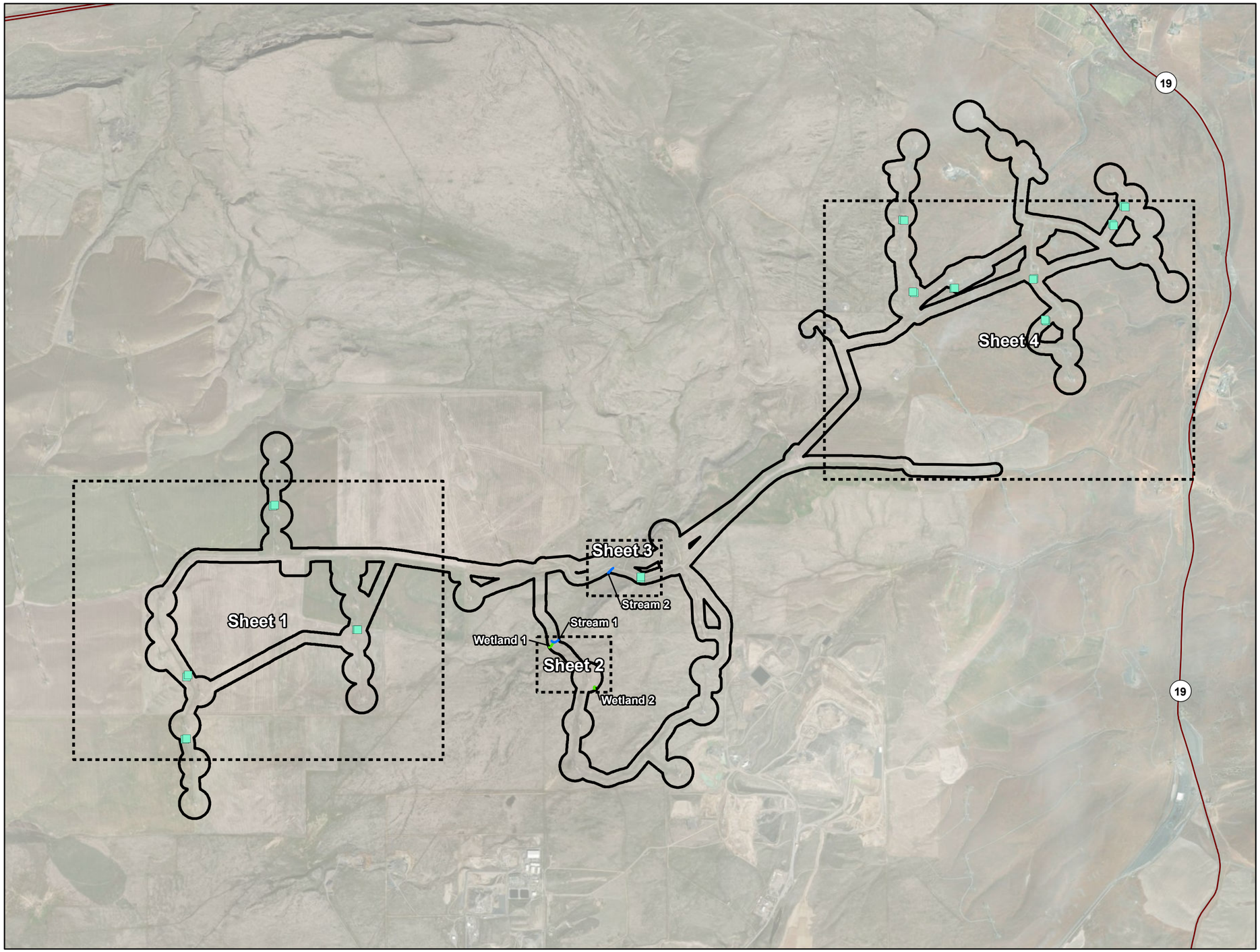

Legend

- Study Area
- Sample Point
- Culvert
- Nonwetland Water (Stream)
- Wetland

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery

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Miles

Figure 6 Overview
Wetland Delineation Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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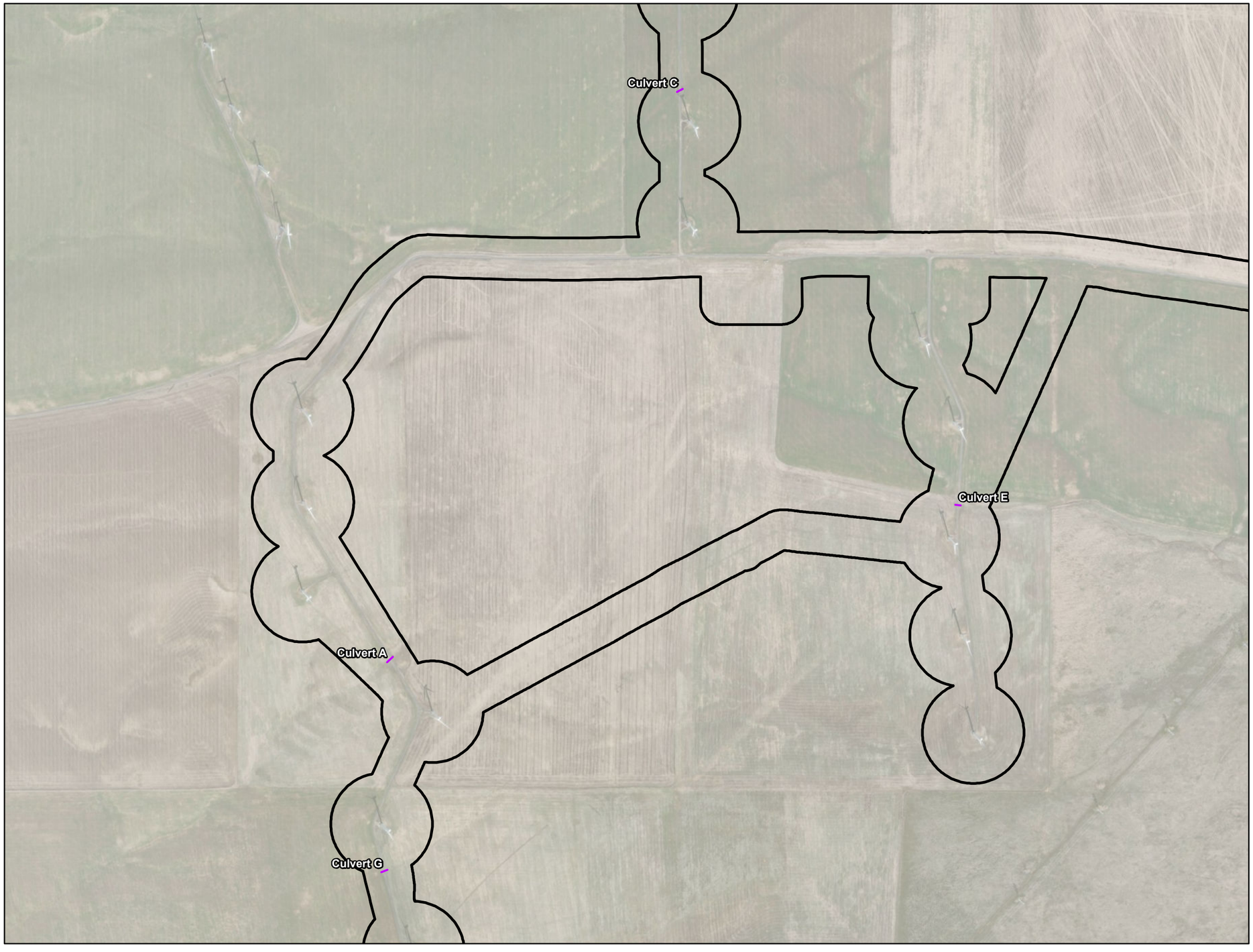

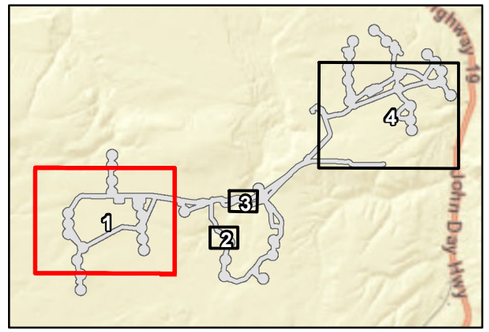

Legend

- Study Area
- Culvert

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery
3. ac = acres
4. lf = linear feet

N

0 500 1,000 2,000
Feet

Figure 6 Sheet 1
Wetland Delineation Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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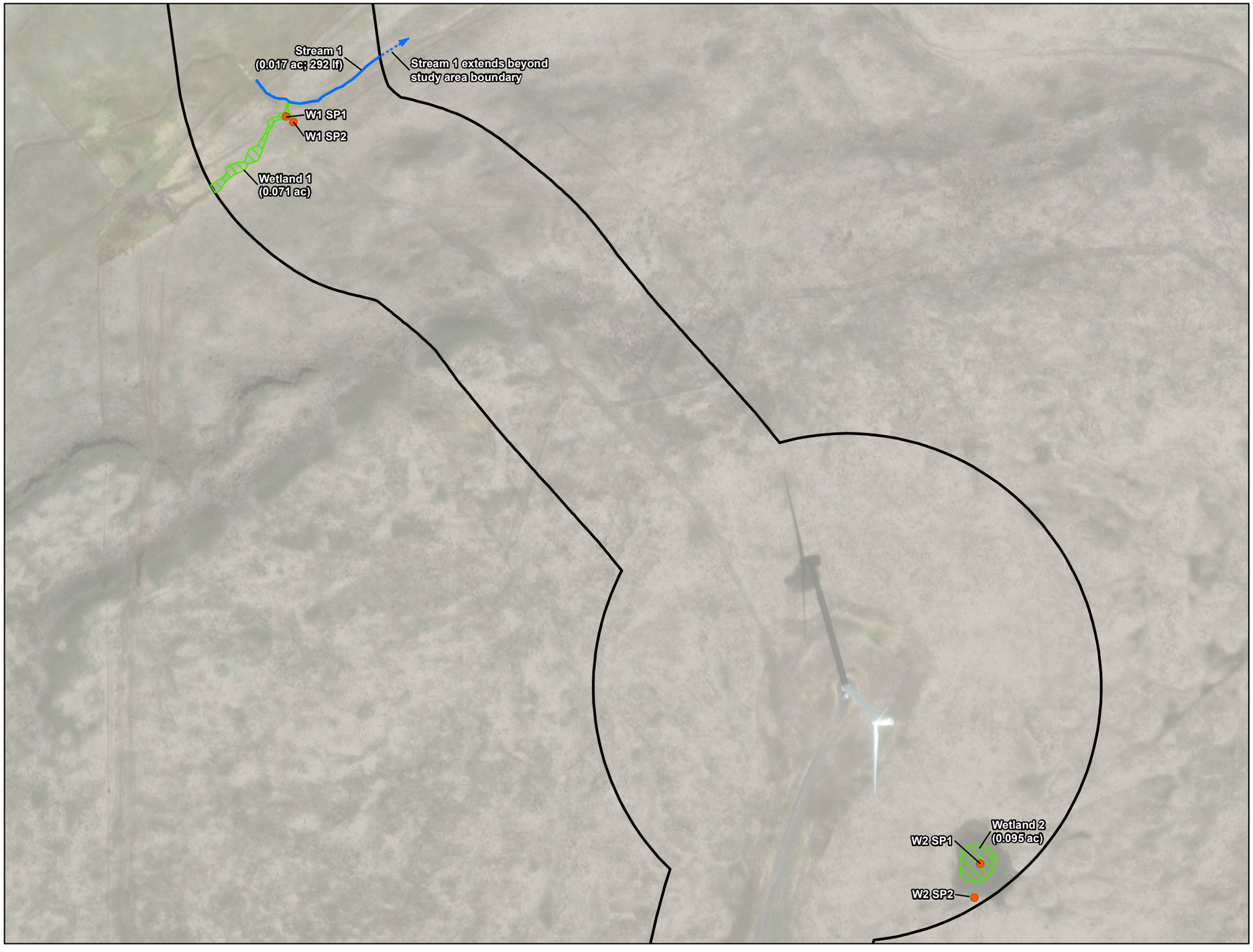

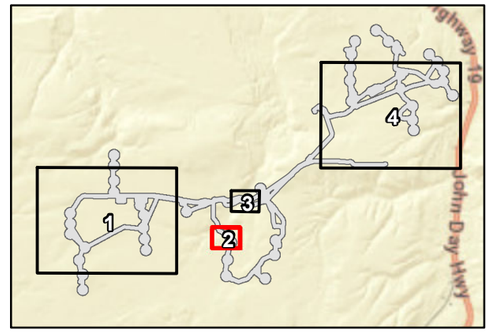

Legend

- Study Area
- Sample Point
- Nonwetland Water (Stream)
- Wetland

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery
3. ac = acres
4. lf = linear feet

N

0 100 200 400
Feet

Figure 6 Sheet 2
Wetland Delineation Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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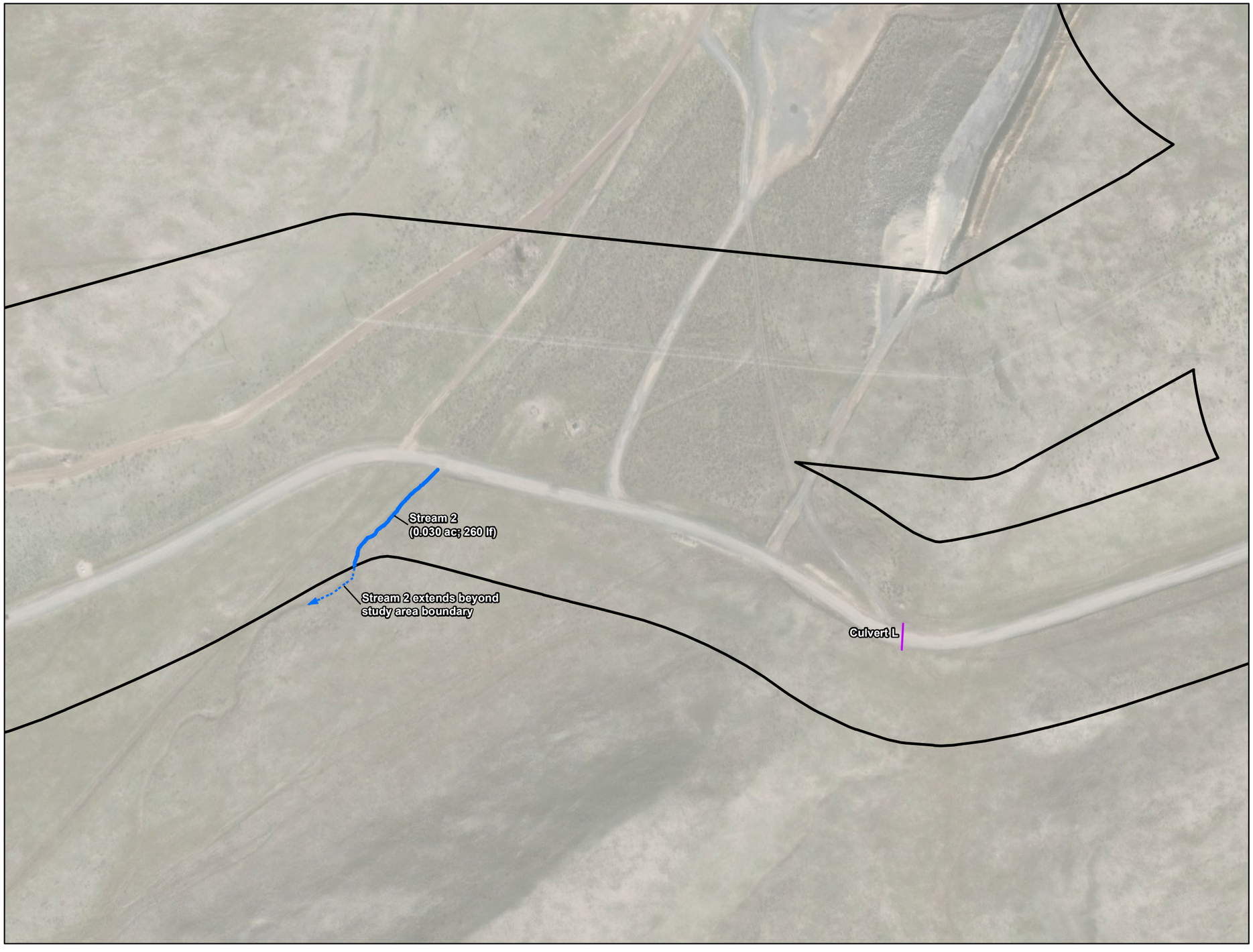

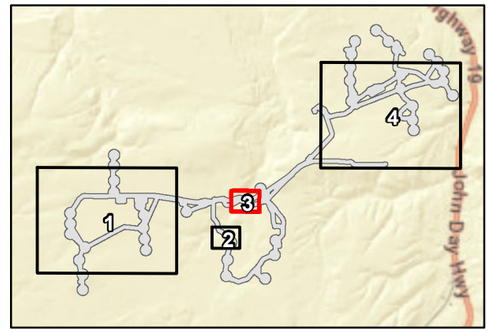

Legend

- Study Area
- Culvert
- Nonwetland Water (Stream)

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery
3. ac = acres
4. lf = linear feet

N

0 100 200 400

Feet

Figure 6 Sheet 3
Wetland Delineation Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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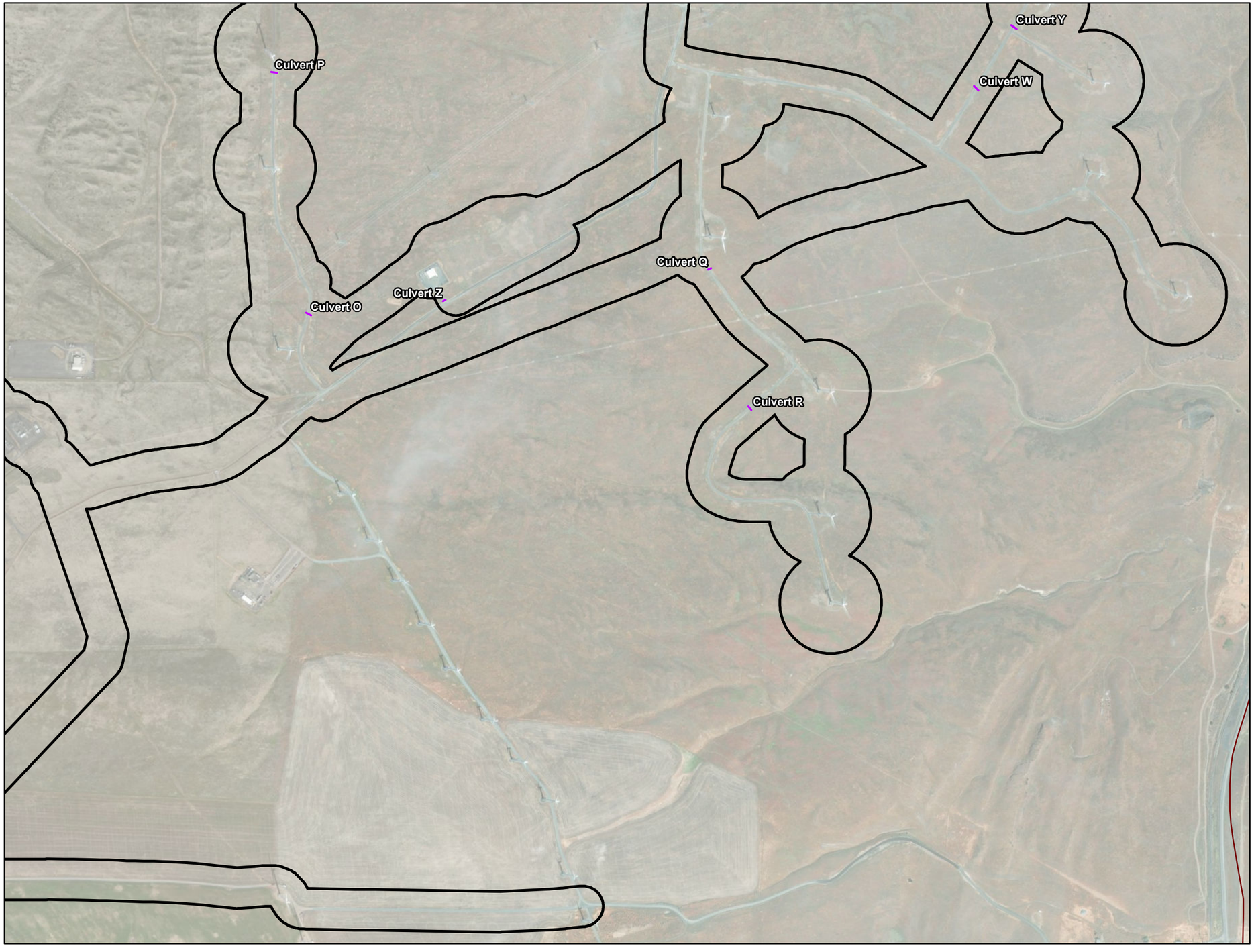

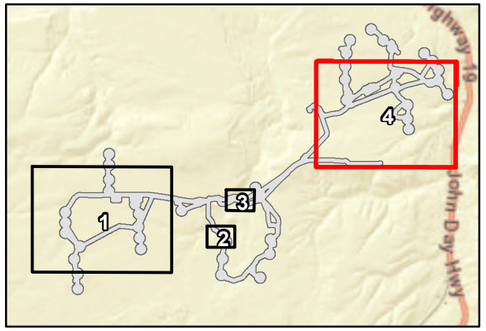

Legend

Study Area

Culvert

Notes:
1. Coordinate System: NAD 1983 State Plane Oregon North (Feet)
2. Data Sources: Esri World Imagery
3. ac = acres
4. lf = linear feet

N

0 500 1,000 2,000
Feet

Figure 6 Sheet 4
Wetland Delineation Map
Leaning Juniper IIA Facility
Gilliam County, Oregon

Jacobs

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Appendix B
Data Forms

Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Leaning Juniper 2 City/County: Gilliam Sampling Date: 6/7/2023

Applicant/Owner: Avangrid State: OR Sampling Point: W1 SP1

Investigator(s): Cynthia Jones, Pim Laulikitnont-Lee Section, Township, Range: S19, T2N, 21E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): B - Columbia/Snake River Plateau Lat: 45.647 Long: -120.248 Datum: WGS84

Soil Map Unit Name: Krebs silt loam, 5 to 20 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (•)	No ( )		
Hydric Soil Present?	Yes (•)	No ( )	**Is the Sampled Area within a Wetland?**	**Yes (•) No ( )**
Wetland Hydrology Present?	Yes (•)	No ( )		

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None*			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *None*			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Echinochloa crus-galli*	50	Yes	FACW
2. *Veronica anagallis-aquatica*	30	Yes	OBL
3. *Ranunculus aquatilis*	20	Yes	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	100%		
Woody Vine Stratum			
1. *None*			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 67 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	50	x 2 =	100
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		150 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (•) No ( )

Remarks:

SOIL

Sampling Point: W1 SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-9	7.5 YR 3/1	85	2.5 YR 4/8	15	C	PL	silt loam	
9-17	5 YR 3/1	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [x] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes (●) No ( )

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [x] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [x] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [x] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (●) No ( ) Depth (inches):

Water Table Present? Yes ( ) No (●) Depth (inches):

Saturation Present? (includes capillary fringe) Yes ( ) No (●) Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Leaning Juniper 2 City/County: Gilliam Sampling Date: 6/7/2023

Applicant/Owner: Avangrid State: OR Sampling Point: W1 SP2

Investigator(s): Cynthia Jones, Pim Laulikitnont-Lee Section, Township, Range: S19, T2N, 21E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): B - Columbia/Snake River Plateau Lat: 45.647 Long: -120.248 Datum: WGS84

Soil Map Unit Name: Krebs silt loam, 5 to 20 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (•)		
Hydric Soil Present?	Yes ( )	No (•)	**Is the Sampled Area within a Wetland?**	Yes ( ) No (•)
Wetland Hydrology Present?	Yes ( )	No (•)		

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None*			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *None*			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Hordeum murinun*	50	Yes	FACU
2. *Achillea millefolium*	15	No	FACU
3. *Tragopogon dubuis*	5	No	Not Listed
4. *Salsola tragus*	5	No	FACU
5. *Chrysothamnus viscidiflorus*	5	No	Not Listed
6. *Lupinus sp.*	5	No	
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1. *None*			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 67 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	70	x 4 =	280
UPL species	10	x 5 =	50
Column Totals:	80 (A)		330 (B)

Prevalence Index = B/A = 4.12

Hydrophytic Vegetation Indicators:

- (•) Dominance Test is >50%
- (•) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (•)

Remarks:

SOIL

Sampling Point: W1 SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-11	10 YR 3/2	100	-	-			silt loam	very rocky

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Leaning Juniper 2 City/County: Gilliam Sampling Date: 6/7/2023

Applicant/Owner: Avangrid State: OR Sampling Point: W2 SP1

Investigator(s): Cynthia Jones, Pim Laulikitnont-Lee Section, Township, Range: S19, T2N, 21E

Landform (hillslope, terrace, etc.): Isolated depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): B - Columbia/Snake River Plateau Lat: 45.643 Long: -120.243 Datum: WGS84

Soil Map Unit Name: Olex silt loam, 0 to 5 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)		
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?**	Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )		

Remarks: Vegetation is mostly senescent

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None*			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *None*			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Hordeum murinun*	10	Yes	FACU
2. *Polygonum aviculare*	15	Yes	FAC
3. *Plagiobothrys scouleri var. cusickii*	5	No	FACW
4. *Sisymbrium altissimum*	2	No	FACU
5. *Lactuca serriola*	1	No	FACU
6.			
7.			
8.			
Total Cover:	33 %		
Woody Vine Stratum			
1. *None*			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 67 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	13	x 4 =	52
UPL species		x 5 =	0
Column Totals:	33 (A)		107 (B)

Prevalence Index = B/A = 3.24

Hydrophytic Vegetation Indicators:

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: W2 SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	10YR 3/2	100	-	-			silt loam	refusal at 6"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ● Depth (inches):

Water Table Present? Yes ○ No ● Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ● Depth (inches):

Wetland Hydrology Present? Yes ● No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Leaning Juniper 2 City/County: Gilliam Sampling Date: 6/7/2023

Applicant/Owner: Avangrid State: OR Sampling Point: W2 SP2

Investigator(s): Cynthia Jones, Pim Laulikitnont-Lee Section, Township, Range: S19, T2N, 21E

Landform (hillslope, terrace, etc.): level area adjacent to depressior Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): B - Columbia/Snake River Plateau Lat: 45.643 Long: -120.243 Datum: WGS84

Soil Map Unit Name: Olex silt loam, 0 to 5 percent slopes NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)		
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?**	Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)		

Remarks: Vegetation is mostly senescent

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None*			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *None*			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Bromus tectorum*	80	Yes	Not Listed
2. *Erigonum heracleoides*	5	No	Not Listed
3. *Achillea millefolium*	5	No	FACU
4. *Tragopogon dubuis*	2	No	Not Listed
5.			
6.			
7.			
8.			
Total Cover:	92 %		
Woody Vine Stratum			
1. *None*			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 67 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	5	x 4 =	20
UPL species	87	x 5 =	435
Column Totals:	92 (A)		455 (B)

Prevalence Index = B/A = 4.95

Hydrophytic Vegetation Indicators:

- [●] Dominance Test is >50%
- [●] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: W2 SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	10YR 3/2	100	-	-			silt loam	refusal at 6"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ● Depth (inches):

Water Table Present? Yes ○ No ● Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ● Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Updated Ordinary High Water Mark Data Sheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: LEANING JUNIPER 2
Project Number:
Stream: 1
Investigator(s): C. JONES, P. LAULIKITNAUKTLEE

Date: 6/6 **Time:** 14:29
Town: ARLINGTON **State:** OR
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
NEAR WETLAND 1

Projection: NAD 83 **Datum:** WGS
Coordinates: 45° 38' 49.59", -120° 14' 53.53"

Potential anthropogenic influences on the channel system:
ROAD BUILDING, INFLOW FROM LIVESTOCK WATERING STATION

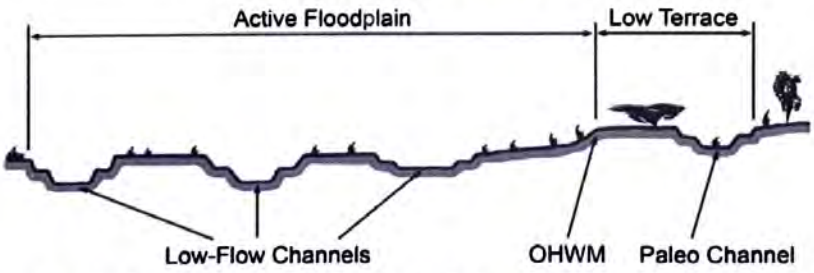
Brief site description:
DRY CHANNEL ADJACENT TO WETLAND. NHD MAPPED DRAINAGE, TRIBUTARY TO JONES CANYON. DISCONTINUOUS EPHEMERAL STREAM — NO FLOODPLAIN OR TERRACE

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☒ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

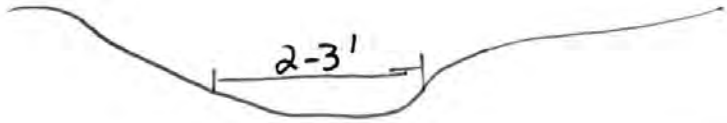


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: **Cross section ID:** S1 **Date:** 6/6/23 **Time:** 14:29

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

SMALL AREAS OF CUTBANK (6-12" TALL), VEGETATION MATTED IN DIRECTION OF FLOW IN SOME AREAS. WATER MARKS ON ROCKS.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: silty loam

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

SIMILAR TO ADJACENT UPLAND AREA, WITH MORE COBBLE UPLAND AND WETLAND VEGETATION

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: LEANING JUNIPER 2
Project Number:
Stream: 2
Investigator(s): C. JONES, P. LAUGHTNANTLEE

Date: 6/7/23 **Time:** 8:32
Town: ARLINGTON **State:** OR
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
JONES CANYON AT ROAD CROSSING

Projection: NAD83 **Datum:** WGS
Coordinates: 45°39'13.54" 120°14'25.57"

Potential anthropogenic influences on the channel system:

ROAD

Brief site description:

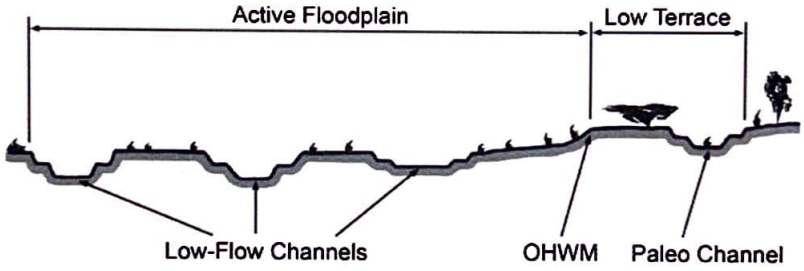
NHD DRAINAGE (JONES CANYON) BISECTED BY UNPAVED ROAD. NO CULVERT OR BED/BANK VISIBLE ON DOWNSTREAM END. DISCONTINUOUS EPHEMERAL STREAM.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☒ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

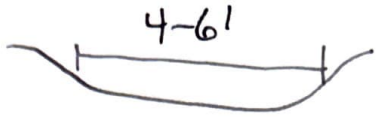


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Project ID: **Cross section ID:** 52 **Date:** 6/7/23 **Time:** 8:32

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

SLIGHT SWALE/BED+BANK. NO CLEAR BREAK IN SLOPE. UPLAND VEGETATION IN SWALE SIMILAR TO VICINITY, NO FLOODPLAIN OR TERRACE.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

CHEATGRASS AND SAGEBRUSH. LIMITED AREAS OF SOIL CRACKING. CHANNEL FLATTENS IN PLACES ON UPSTEAM END. NOT CLEARLY DISCERNABLE DOWNSTREAM OF ROAD.

Streamflow Duration Assessment Method Data Sheets

Streamflow Duration Field Assessment Form

Project # / Name	LEANING JUNIPER 2	Assessor	C. JONES, P. LAWLIKIETINAUNTZEE
Address	ARLINGTON, OR	Date	6/6/23
Waterway Name	STREAM 1 (TRIB TO JONES CNYN)	Coordinates at downstream end (ddd.mm.ss)	Lat. 45°38'49.59" N
Reach Boundaries	MICROSITING CORRIDOR		Long. -120°14'53.53" W
Precipitation w/in 48 hours (cm)	0	Channel Width (m)	~1
☐ Disturbed Site / Difficult Situation (Describe in "Notes")			

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status):

NA

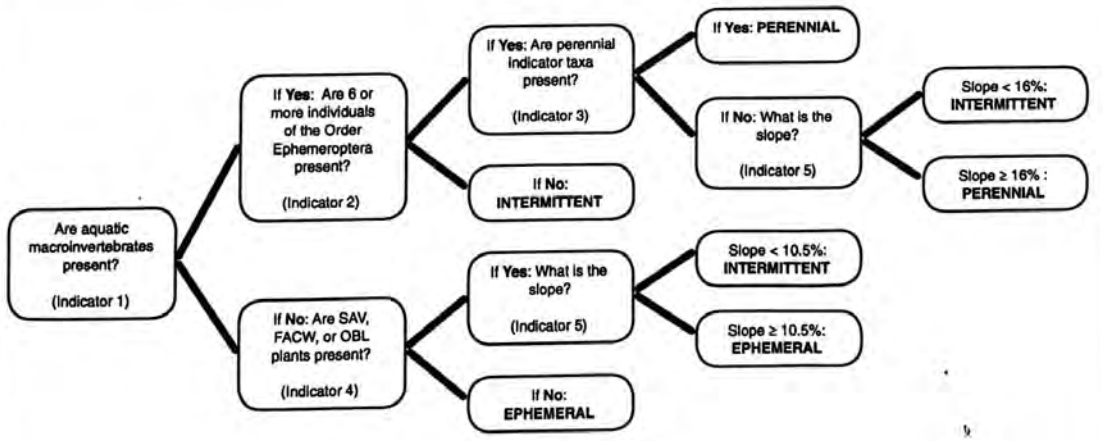
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NA			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	5-10 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

- [x] Prolonged Abnormal Rainfall / Snowpack
  - [x] Below Average
  - [ ] Above Average
- [x] Natural or Anthropogenic Disturbance
- [ ] Other: _____

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

FED BY RUNOFF FROM LIVESTOCK WATERING STATION, DIRT ROAD (LITTLE USED) BISECTS DRAINAGE.

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

SEE OHWM DATASHEET

Ancillary Information:

- [ ] Riparian Corridor
- [x] Erosion and Deposition
- [ ] Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Streamflow Duration Field Assessment Form

Project # / Name	LEANING JUNIPER 2	Assessor	C. JONES, P. LAUCKHARDTEE
Address	ARLINGTON, OR	Date	6/7/23
Waterway Name	STREAM 2 GRIB TO JONES CNYN	Coordinates at downstream end (ddd.mm.ss)	Lat. 45° 39' 13.54" N
Reach Boundaries	MICROSITING CORRIDOR		Long. -120° 14' 25.57" W
Precipitation w/in 48 hours (cm)	0	Channel Width (m)	1–2
☐ Disturbed Site / Difficult Situation (Describe in "Notes")			

Observed Hydrology

% of reach w/observed surface flow 0

% of reach w/any flow (surface or hyporheic) 0

# of pools observed 0

Observations

Observed Wetland Plants (and indicator status):

NA

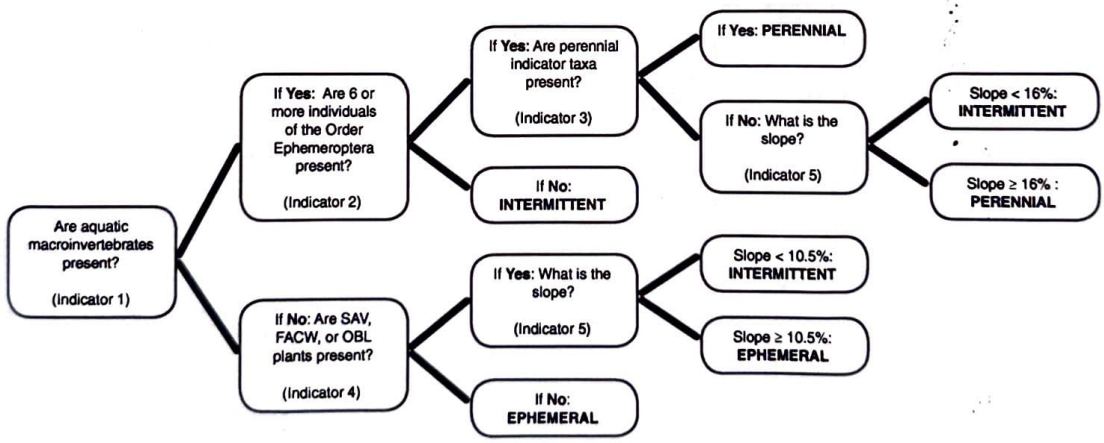
Observed Macroinvertebrates:

Taxon	Indicator Status	Ephemer-optera?	# of Individuals
NA			

Indicators

1. Are aquatic macroinvertebrates present?	☐ Yes	☒ No
2. Are 6 or more individuals of the Order Ephemeroptera present?	☐ Yes	☒ No
3. Are perennial indicator taxa present? (refer to Table 1)	☐ Yes	☒ No
4. Are FACW, OBL, or SAV plants present? (Within ½ channel width)	☐ Yes	☒ No
5. What is the slope? (In percent, measured for the valley, not the stream)	25 %	

Conclusions



Single Indicators:
☐ Fish
☐ Amphibians

Finding:
☒ Ephemeral
☐ Intermittent
☐ Perennial

Streamflow Duration Field Assessment Form

Notes: single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

Difficult Situation:

- [x] Prolonged Abnormal Rainfall / Snowpack
  - [x] Below Average
  - [ ] Above Average
- [x] Natural or Anthropogenic Disturbance
- [ ] Other: _____

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

BISECTED BY ROAD

Additional Notes: (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

SEE OHWM DATASHEET

Ancillary Information:

- [ ] Riparian Corridor
- [ ] Erosion and Deposition
- [ ] Floodplain Connectivity

Observed Amphibians, Snake, and Fish:

Taxa	Life History Stage	Location Observed	Number of Individuals Observed

Appendix C
Ground-level Photographs

Photo 1. Wetland 1, facing west.

Photo 2. Watering area feeding Wetland 1, facing south.

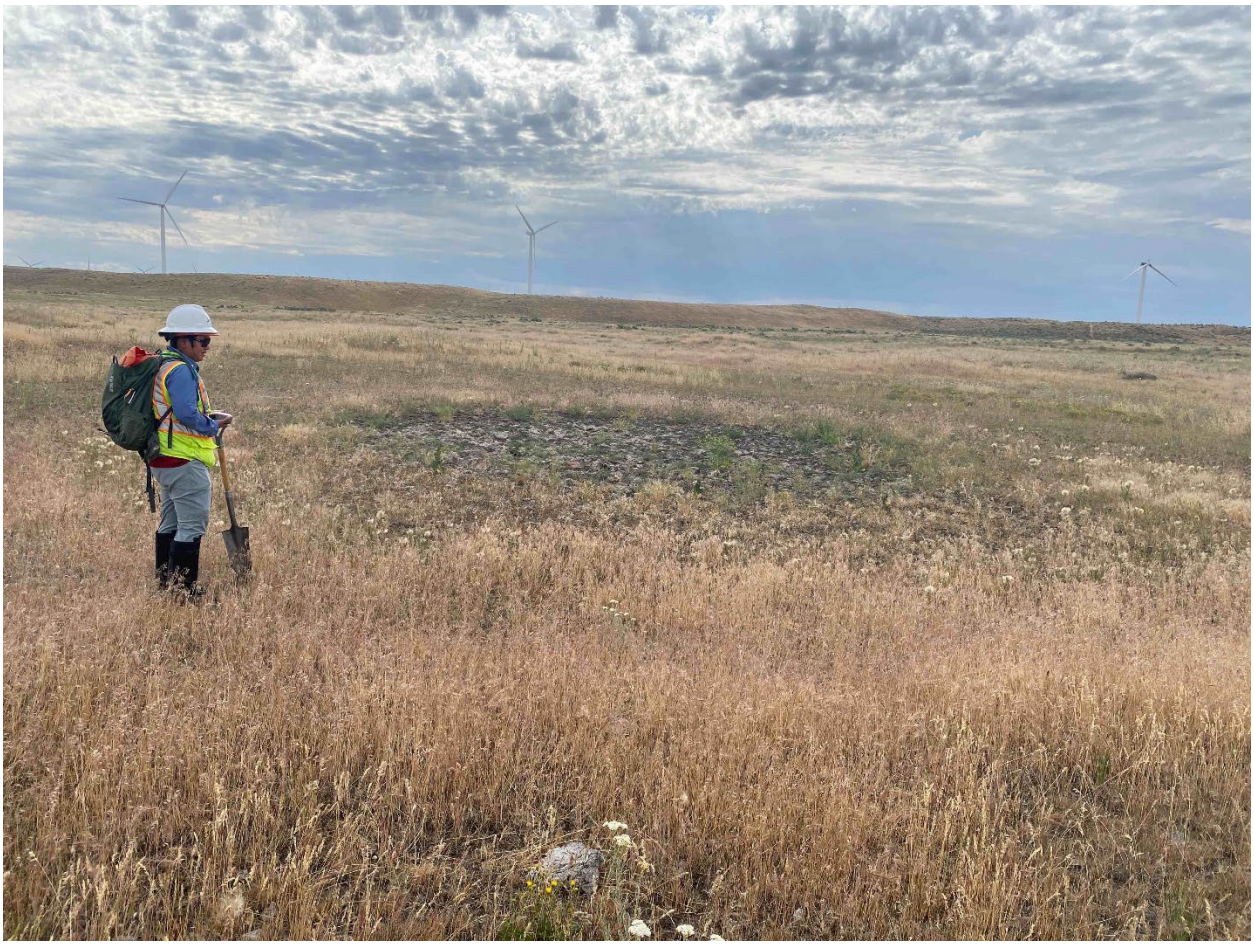


Photo 3. Wetland 2, facing east.

Photo 4. Stream 1, facing northwest.

Photo 5. Stream 2, facing southwest (downstream).

Photo 6. Stream 2, facing northeast (upstream). No bed and bank visible in this direction.

Photo 7. Agricultural land with NHD-mapped drainages in the distance. Near west end of study area, facing south.

Photo 8. NHD-mapped drainage (tributary to China Creek), with no bed and bank or evidence of flow. Near east end of study area, facing east.

Appendix D
Additional Information

Photo comparison showing changes in hydrologic influences and change in signature in vicinity of Wetland 2.

June 2006 photo

June 2019 photo

Appendix E
Literature Cited

Avangrid. Renewables, LLC. 2006. Energy Facility Site Certificate Application for Leaning Juniper Wind Power II. Exhibit J: Wetlands. https://www.oregon.gov/energy/facilities-safety/facilities/Pages/LJA.aspx.

CH2M HILL. 2009. *Preconstruction Survey Addendum to the Wetlands and Waters Delineation Report for the Leaning Juniper II Wind Power Facility—LJIIA. Gilliam County, Oregon.* Prepared for Iberdrola.

Curtis, Katherine E. and Robert W. Lichvar. 2010. *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* ERDC/CRREL TN-10-1. July. https://www.spl.usace.army.mil/Portals/17/docs/regulatory/JD/UpdatedDatasheetforIDOHWM_ERDC_2010.pdf.

Environmental Laboratory for the U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual*. Vicksburg, MS., U.S. Army Engineer Waterways Experiment Station, Technical Report Y-87-1.

ESRI Aerial Imagery. 2023. *National Agricultural Imagery Program, Oregon*. Resolution: 1 meter.

Lichvar, Robert W. and Shawn M. McColley. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. A Delineation Manual.* August. https://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/Ordinary_High_Watermark_Manual_Aug_2008.pdf.

Nadeau, Tracie-Lynn. 2015. *Streamflow Duration Assessment Method for the Pacific Northwest*. EPA 910-K-14-001, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the United States Department of Agriculture and the National Oceanic and Atmospheric Administration. 2023. U.S Drought Monitor: Oregon. https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OR.

National Geographic Society, i-cubed. 2013. USA Topo Maps. Accessed via ESRI ArcGIS. https://www.arcgis.com/home/item.html?id=99cd5fbd98934028802b4f797c4b1732.

Natural Resources Conservation Service (NRCS). 2023a. *Arlington, Oregon, WETS Table, Gilliam County, Oregon*. U.S. Department of Agriculture. http://agacis.rcc-acis.org/.

Natural Resources Conservation Service (NRCS). 2023b. *Web Soil Survey*. U.S. Department of Agriculture. Accessed May 2022. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

Thorson, T. D., S. A. Bryce, D. A. Lammers, A. J. Woods, J. M. Omernik, J. Kagan, D. E. Pater, and J. A. Comstock. 2003. *Ecoregions of Oregon* (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000).

U.S. Army Corps of Engineers (USACE). 2020. *National Wetland Plant List: Arid West Region*. 2020. V.3.5. http://wetland-plants.usace.army.mil/.

U.S. Army Corps of Engineers (USACE). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* Environmental Laboratory. Vicksburg, MS., U.S. Army Engineer Research and Development Center, ERDC/EL TR-08-28. September.

U.S. Geological Survey (USGS). 2023. *Hydrography: NHD-Plus High Resolution National Hydrography Dataset*. https://www.usgs.gov/core-science-systems/ngp/national-hydrography.

U.S. Fish and Wildlife Service (USFWS). 2023. *National Wetlands Inventory*. NWI Mapper. http://www.fws.gov/wetlands/.

Attachment 26
Property Owner List and Tax Lot Map

Gilliam County Tax Lots within 500 feet of Facility Site Boundary
Leaning Juniper IIA Request for Amendment No. 3
Data received from Gilliam County Assessor's Office on January 4, 2024.

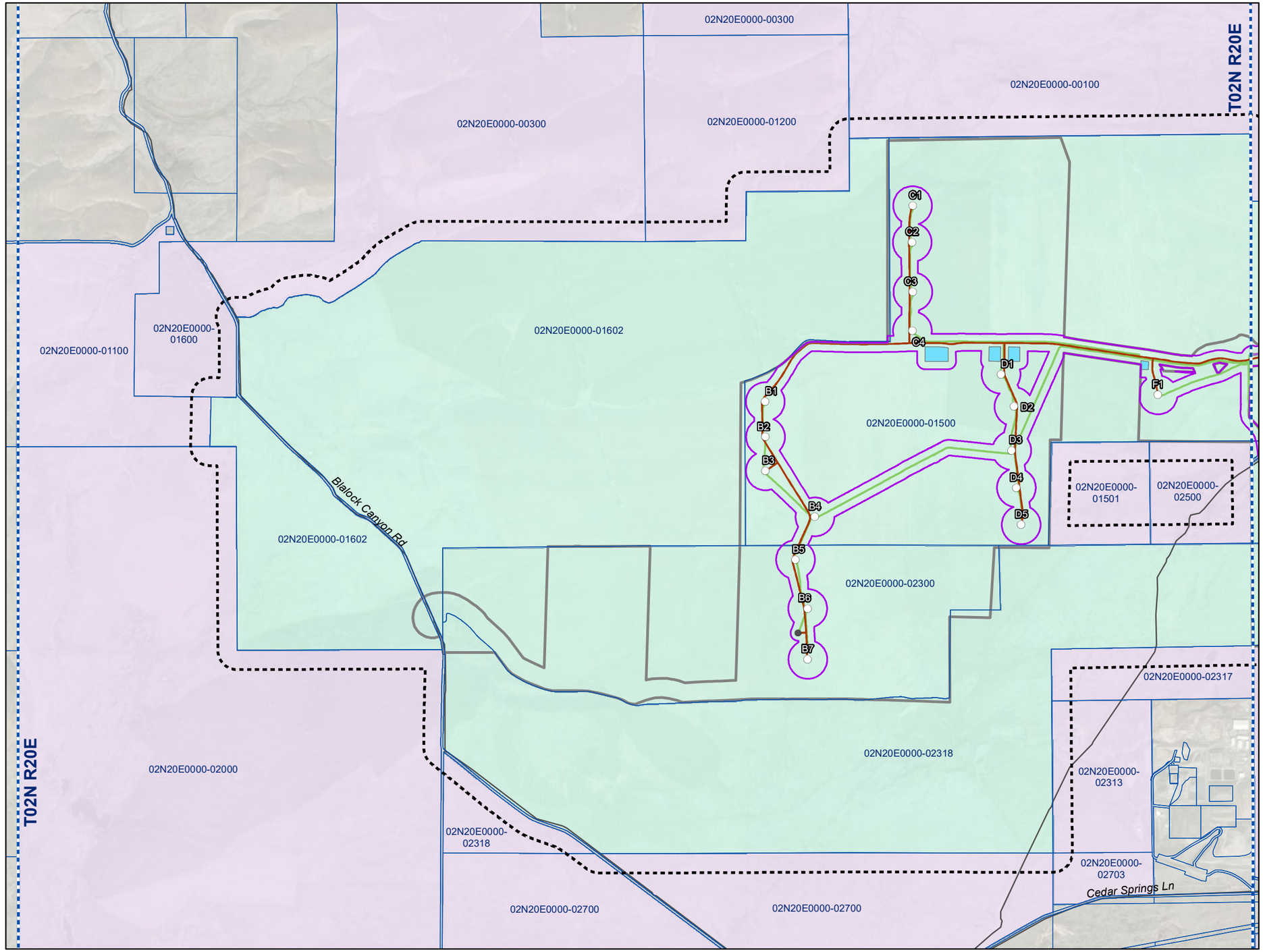
Map Tax Lot	Owner	Address	City	State	Zip Code	Mail Address
02N20E0000-01500	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N20E0000-01602	STEVEN ANDERSON	14100 HERITAGE LN	ARLINGTON	OR	97812	14100 HERITAGE LN, ARLINGTON, OR, 97812
02N20E0000-02300	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N20E0000-02318	HERBERT R ETAL HOLZAPFEL	PO BOX 1027	WILLOWS	CA	95988	PO BOX 1027, WILLOWS, CA, 95988
02N21E0000-00100	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
02N21E0000-00300	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-00400	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-00500	TATONE FARM LLC	PO BOX 576	CONDON	OR	97823	PO BOX 576, CONDON, OR, 97823
02N21E0000-00502	BONNEVILLE POWER ADMINISTRATION	PO BOX 61409	VANCOUVER	WA	98666	PO BOX 61409, VANCOUVER, WA, 98666
02N21E0000-00503	PACIFICORP	825 NE MULTNOMAH ST STE 1900	PORTLAND	OR	97232-2151	825 NE MULTNOMAH ST STE 1900, PORTLAND, OR, 97232-2151
02N21E0000-00504	PEBBLE SPRINGS WIND LLC	2701 NW VAUGHN ST STE 300	PORTLAND	OR	97210	2701 NW VAUGHN ST STE 300, PORTLAND, OR, 97210
02N21E0000-01100	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01102	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01203	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01204	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01800	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01801	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01900	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
03N21E0000-01600	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E0000-01601	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E3400-00101	GUNKEL BARNARD GRIFFIN LLC	89 MARYHILL HWY	GOLDENDALE	WA	98620	89 MARYHILL HWY, GOLDENDALE, WA, 98620
03N21E3400-00102	GUNKEL BARNARD GRIFFIN LLC	89 MARYHILL HWY	GOLDENDALE	WA	98620	89 MARYHILL HWY, GOLDENDALE, WA, 98620
03N21E3400-00104	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E3400-00106	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E3400-00112	WILLIAM D & LYNN A HARRIS	PO BOX 503	ARLINGTON	OR	97812	PO BOX 503, ARLINGTON, OR, 97812
03N21E3400-00117	GILLIAM COUNTY	PO BOX 427	CONDON	OR	97823	PO BOX 427, CONDON, OR, 97823
03N21E3400-00119	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E3400-00120	JESSE JOHN & TESSA CHRISTINE HERRA	73854 RATTLESNAKE RD	ARLINGTON	OR	97812	73854 RATTLESNAKE RD, ARLINGTON, OR, 97812
03N21E3400-00600	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E3400-00700	STATE HIGHWAY COMMISSION	135 TRANSPORTATION BLDG	SALEM	OR	97310	135 TRANSPORTATION BLDG, SALEM, OR, 97310
03N21E3400-00800	STATE OF OREGON HIGHWAY	355 CAPITOL ST NE	SALEM	OR	97310	355 CAPITOL ST NE, SALEM, OR, 97310
03N21E3400-00900	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
02N20E0000-00100	PHILIPPI RANCHES INC	79693 AGNEW RD	HERMISTON	OR	97838	79693 AGNEW RD, HERMISTON, OR, 97838
02N20E0000-00300	CHARLES & MARCIA A ANDERSON	69530 CONDON HWY	HEPPNER	OR	97836	69530 CONDON HWY, HEPPNER, OR, 97836
02N20E0000-01100	TRIANGLE RANCHES A PARTNERSHIP	52965 HWY 207	HEPPNER	OR	97836	52965 HWY 207, HEPPNER, OR, 97836
02N20E0000-01200	CHARLES & MARCIA A ANDERSON	69530 CONDON HWY	HEPPNER	OR	97836	69530 CONDON HWY, HEPPNER, OR, 97836
02N20E0000-01501	HERBERT R ETAL HOLZAPFEL	PO BOX 1027	WILLOWS	CA	95988	PO BOX 1027, WILLOWS, CA, 95988
02N20E0000-01600	DENNIS NEWELL	73364 BLALOCK CANYON RD	ARLINGTON	OR	97812	73364 BLALOCK CANYON RD, ARLINGTON, OR, 97812
02N20E0000-02000	JOHN DAY RIVER CLUB LLC	1430 S MARY FAILING DR	PORTLAND	OR	97219	1430 S MARY FAILING DR, PORTLAND, OR, 97219
02N20E0000-02313	CWM OF THE NORTHWEST INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N20E0000-02317	CWM OF THE NORTHWEST INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N20E0000-02500	USA	3050 NE 3RD ST	PRINEVILLE	OR	97754	3050 NE 3RD ST, PRINEVILLE, OR, 97754
02N20E0000-02700	HERBERT R ETAL HOLZAPFEL	PO BOX 1027	WILLOWS	CA	95988	PO BOX 1027, WILLOWS, CA, 95988

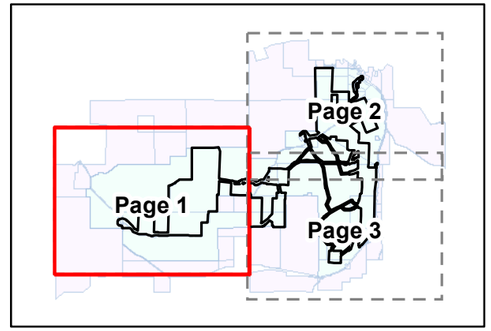
Gilliam County Tax Lots within 500 feet of Facility Site Boundary
Leaning Juniper IIA Request for Amendment No. 3
Data received from Gilliam County Assessor's Office on January 4, 2024.

Map Tax Lot	Owner	Address	City	State	Zip Code	Mail Address
02N20E0000-02703	CWM OF THE NORTHWEST INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-00102	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
02N21E0000-00200	PHILIPPI RANCHES INC	79693 AGNEW RD	HERMISTON	OR	97838	79693 AGNEW RD, HERMISTON, OR, 97838
02N21E0000-00501	EDP RENEWABLES NORTH AMERICA LLC	PO BOX 3827	HOUSTON	TX	77253	PO BOX 3827, HOUSTON, TX, 77253
02N21E0000-00600	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
02N21E0000-01000	QUARTER M RANCH LLC	61835 DART CREEK RD	ST HELENS	OR	97051	61835 DART CREEK RD, ST HELENS, OR, 97051
02N21E0000-01101	WASTE MANAGEMENT DISPOSAL SERVICES OF OR	800 CAPITOL ST STE 3000	HOUSTON	TX	77002	800 CAPITOL ST STE 3000, HOUSTON, TX, 77002
02N21E0000-01103	OREGON WASTE SYSTEMS INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01104	GILLIAM COUNTY-WHEAT QUALITY LAB	PO BOX 427	CONDON	OR	97823	PO BOX 427, CONDON, OR, 97823
02N21E0000-01205	CWM OF THE NORTHWEST INC	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
02N21E0000-01300	FARIN DA SILVA	71983 HWY 19	ARLINGTON	OR	97812	71983 HWY 19, ARLINGTON, OR, 97812
02N21E0000-01700	HAROLD G KLEINBACH	3410 S GREEN LP	KENNEWICK	WA	99337	3410 S GREEN LP, KENNEWICK, WA, 99337
02N21E0000-01701	HERBERT R & VIRGINIA W HOLZAPFEL	PO BOX 1027	WILLOWS	CA	95988	PO BOX 1027, WILLOWS, CA, 95988
02N21E0000-01703	JERRY L & LISA G RIETMANN	PO BOX 224	IONE	OR	97843	PO BOX 224, IONE, OR, 97843
02N21E0000-01802	COLUMBIA BASIN ELEC CO-OP INC	PO BOX 398	HEPPNER	OR	97836	PO BOX 398, HEPPNER, OR, 97836
02N21E0000-02100	HOLZAPFEL LAND & CATTLE LP	PO BOX 1027	WILLOWS	CA	95988	PO BOX 1027, WILLOWS, CA, 95988
02N21E0000-02103	WASTE MANAGEMENT	PO BOX 1450	CHICAGO	IL	60690	PO BOX 1450, CHICAGO, IL, 60690
03N21E0000-00500	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E0000-00900	ITS PROPERTY LLC	34606 SE 20TH ST	WASHOUGAL	WA	98671	34606 SE 20TH ST, WASHOUGAL, WA, 98671
03N21E0000-01300	PHILIPPI RANCHES INC	79693 AGNEW RD	HERMISTON	OR	97838	79693 AGNEW RD, HERMISTON, OR, 97838
03N21E0000-01303	PHILIPPI RANCHES INC	79693 AGNEW RD	HERMISTON	OR	97838	79693 AGNEW RD, HERMISTON, OR, 97838
03N21E27CC-00100	KREBS JR	PO BOX 8	ARLINGTON	OR	97812	PO BOX 8, ARLINGTON, OR, 97812
03N21E27CC-00300	DEVIN OIL COMPANY INC	PO BOX 105	HERMISTON	OR	97838	PO BOX 105, HERMISTON, OR, 97838
03N21E27CC-00400	HATTENHAUER ENERGY LLC	PO BOX 1397	THE DALLES	OR	97058	PO BOX 1397, THE DALLES, OR, 97058
03N21E27CC-01200	ARLINGTON SADDLE CLUB INC	PO BOX 475	ARLINGTON	OR	97812	PO BOX 475, ARLINGTON, OR, 97812
03N21E27CC-01300	ARLINGTON SADDLE CLUB	PO BOX 475	ARLINGTON	OR	97812	PO BOX 475, ARLINGTON, OR, 97812
03N21E27CC-01400	ARLINGTON SADDLE CLUB	PO BOX 475	ARLINGTON	OR	97812	PO BOX 475, ARLINGTON, OR, 97812
03N21E2800-00204	CITY OF ARLINGTON GOLF COURSE	PO BOX 68	ARLINGTON	OR	97812	PO BOX 68, ARLINGTON, OR, 97812
03N21E2800-00209	PORT OF ARLINGTON	PO BOX 279	ARLINGTON	OR	97812	PO BOX 279, ARLINGTON, OR, 97812
03N21E2800-00210	CITY OF ARLINGTON	PO BOX 68	ARLINGTON	OR	97812	PO BOX 68, ARLINGTON, OR, 97812
03N21E28CD-01000	NATHAN L & LESLEE A HAMMER	PO BOX 91	ARLINGTON	OR	97812	PO BOX 91, ARLINGTON, OR, 97812
03N21E28CD-01100	ROBERT A & SALLY J MANN	PO BOX 547	ARLINGTON	OR	97812	PO BOX 547, ARLINGTON, OR, 97812
03N21E28CD-01200	ROBERT A & SALLY J MANN	PO BOX 547	ARLINGTON	OR	97812	PO BOX 547, ARLINGTON, OR, 97812
03N21E28CD-01300	NATHAN L & LESLEE A HAMMER	PO BOX 91	ARLINGTON	OR	97812	PO BOX 91, ARLINGTON, OR, 97812
03N21E28CD-02100	GARTH R NEAL	PO BOX 154	ARLINGTON	OR	97812	PO BOX 154, ARLINGTON, OR, 97812
03N21E28CD-02200	GARTH R NEAL	PO BOX 154	ARLINGTON	OR	97812	PO BOX 154, ARLINGTON, OR, 97812
03N21E28CD-02300	FAHEEM RASHEED	908 LILLIAN WAY	THE DALLES	OR	97058	908 LILLIAN WAY, THE DALLES, OR, 97058
03N21E28CD-02400	TEDDY L & DEBRA A COPHER	PO BOX 543	ARLINGTON	OR	97812	PO BOX 543, ARLINGTON, OR, 97812
03N21E28CD-02500	DANIEL WELLS	1201 MOORE AVE APT 1912	PORTLAND	TX	78374	1201 MOORE AVE APT 1912, PORTLAND, TX, 78374
03N21E28CD-02600	BRADEI KOLBERG	PO BOX 191	TERREBONNE	OR	97760	PO BOX 191, TERREBONNE, OR, 97760
03N21E28CD-02700	MATT A & CARMELA L HUGHES	PO BOX 591	ARLINGTON	OR	97812	PO BOX 591, ARLINGTON, OR, 97812
03N21E28CD-02800	BRANDON SINCLAIR	PO BOX 381	MEDFORD	OR	97501	PO BOX 381, MEDFORD, OR, 97501
03N21E28CD-02900	TERESA VALLE DE ET AL OLAEZ	2302 WELLS DR	HOOD RIVER	OR	97031	2302 WELLS DR, HOOD RIVER, OR, 97031

Gilliam County Tax Lots within 500 feet of Facility Site Boundary
Leaning Juniper IIA Request for Amendment No. 3
Data received from Gilliam County Assessor's Office on January 4, 2024.

Map Tax Lot	Owner	Address	City	State	Zip Code	Mail Address
03N21E28CD-04000	ED IMAN	PO BOX 479	ARLINGTON	OR	97812	PO BOX 479, ARLINGTON, OR, 97812
03N21E28CD-04100	ED IMAN	PO BOX 479	ARLINGTON	OR	97812	PO BOX 479, ARLINGTON, OR, 97812
03N21E28CD-04200	JOHN LATINO	PO BOX 536	ARLINGTON	OR	97812	PO BOX 536, ARLINGTON, OR, 97812
03N21E28CD-04300	JANET K. LONGACRE	PO BOX 87	ARLINGTON	OR	97812	PO BOX 87, ARLINGTON, OR, 97812
03N21E28CD-04400	KARI L & RUSSELL G HAYTER	PO BOX 125	ARLINGTON	OR	97812	PO BOX 125, ARLINGTON, OR, 97812
03N21E28DC-00110	JACK L & KAY F WEST	PO BOX 427	ARLINGTON	OR	97812	PO BOX 427, ARLINGTON, OR, 97812
03N21E28DC-00111	JACK L & KAY F WEST	PO BOX 427	ARLINGTON	OR	97812	PO BOX 427, ARLINGTON, OR, 97812
03N21E28DC-00112	FRANCES L TRUST MORRIS	81379 CRAIG RD	HERMISTON	OR	97838	81379 CRAIG RD, HERMISTON, OR, 97838
03N21E28DC-00113	CHRISTOPHER HAWKINS	PO BOX F	ARLINGTON	OR	97812	PO BOX F, ARLINGTON, OR, 97812
03N21E28DC-00114	TIMOTHY J & DANELLE WETHERELL	PO BOX 280	ARLINGTON	OR	97812	PO BOX 280, ARLINGTON, OR, 97812
03N21E28DC-00600	TIMOTHY & DANELLE WETHERELL	PO BOX 280	ARLINGTON	OR	97812	PO BOX 280, ARLINGTON, OR, 97812
03N21E28DC-00700	ELI CAUDILL	PO BOX 752	CONDON	OR	97823	PO BOX 752, CONDON, OR, 97823
03N21E28DC-00701	ELI CAUDILL	PO BOX 752	CONDON	OR	97823	PO BOX 752, CONDON, OR, 97823
03N21E28DC-00702	ELI CAUDILL	PO BOX 752	CONDON	OR	97823	PO BOX 752, CONDON, OR, 97823
03N21E28DC-00800	JAN K LONGACRE	PO BOX 87	ARLINGTON	OR	97812	PO BOX 87, ARLINGTON, OR, 97812
03N21E28DC-00900	RICK & CARRIE SCHADEWITZ	PO BOX 549	ARLINGTON	OR	97812	PO BOX 549, ARLINGTON, OR, 97812
03N21E28DC-01000	SCOTTY L & MONICA SELLS	1265 WRIGHT RD	ARLINGTON	OR	97812	1265 WRIGHT RD, ARLINGTON, OR, 97812
03N21E28DC-01100	DAVID J GATES	PO BOX 221	ARLINGTON	OR	97812	PO BOX 221, ARLINGTON, OR, 97812
03N21E28DC-01300	MICHAEL J & KARI L KEOWN	PO BOX 255	ARLINGTON	OR	97812	PO BOX 255, ARLINGTON, OR, 97812
03N21E3400-00107	CHRISTINE E BECKTOLD	18122 HULDEN LN	ARLINGTON	OR	97812	18122 HULDEN LN, ARLINGTON, OR, 97812
03N21E3400-00108	DEVIN OIL COMPANY INC	PO BOX 105	HERMISTON	OR	97838	PO BOX 105, HERMISTON, OR, 97838
03N21E3400-00113	ARLINGTON SADDLE CLUB & RODEO ASSOC	PO BOX 475	ARLINGTON	OR	97812	PO BOX 475, ARLINGTON, OR, 97812
03N21E3400-00116	JOHN J & MARTY D GRUBAUGH	18216 HULDEN LN	ARLINGTON	OR	97812	18216 HULDEN LN, ARLINGTON, OR, 97812
03N21E3400-00118	RUSSELL L & ANGELA L TIMMERMAN	18200 HULDEN LN	ARLINGTON	OR	97812	18200 HULDEN LN, ARLINGTON, OR, 97812
03N21E3400-00122	PETE & SHEILA MCFARLANE	PO BOX 216	ARLINGTON	OR	97812	PO BOX 216, ARLINGTON, OR, 97812
03N21E3400-00400	DEVIN OIL COMPANY INC	PO BOX 105	HERMISTON	OR	97838	PO BOX 105, HERMISTON, OR, 97838





Legend

- Site Boundary
- Repower Corridor
- Existing Turbine
- Existing Met Tower
- Existing Substation or O&M Facility
- Existing Fiber Optic Line
- Existing Overhead Electrical Line
- Existing Underground Electrical Line
- Existing Access Road
- Temporary Laydown or Crane Assembly
- 500-foot Buffer of Tax Lots on which Subject Property is Located
- Township Range Boundary
- Tax Lot
- Tax Lot on which Subject Property is Located
- Tax Lot within 500 Feet of a Tax Lot on which Subject Property is Located

Note: Data received from Gilliam County Assessor's Office on January 4, 2024.

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Attachment 11 Page 1 of 3
Gilliam County Tax Lots within 500 Feet of Property Subject to Amendment
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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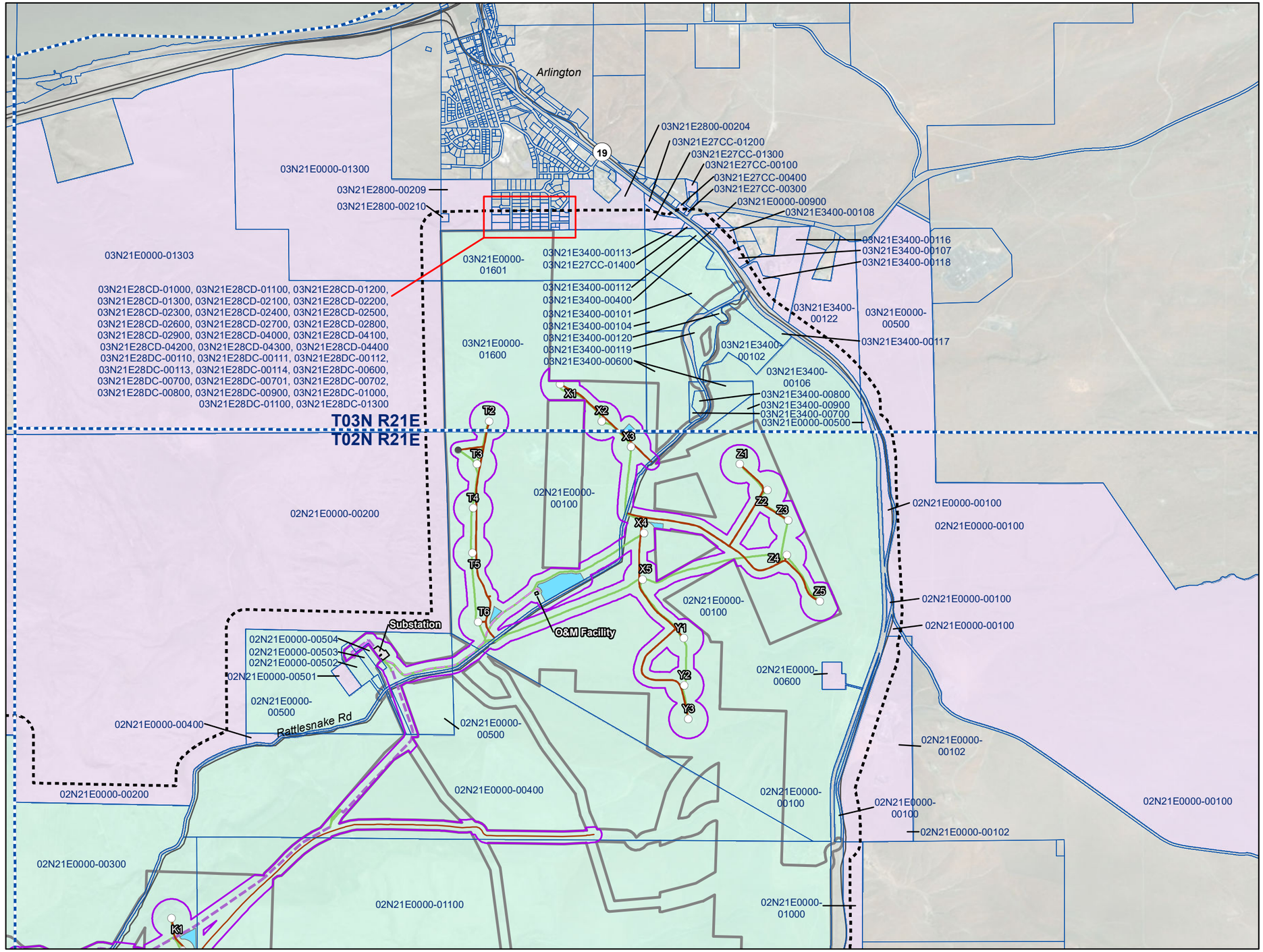

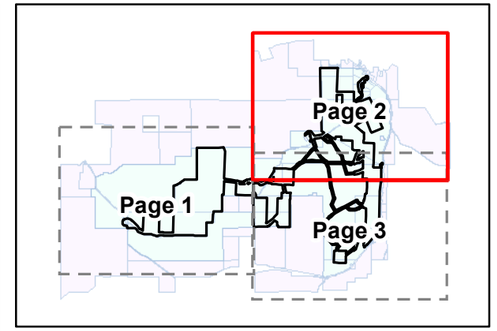

Legend

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Attachment 11 Page 2 of 3
Gilliam County Tax Lots within 500 Feet of Property Subject to Amendment
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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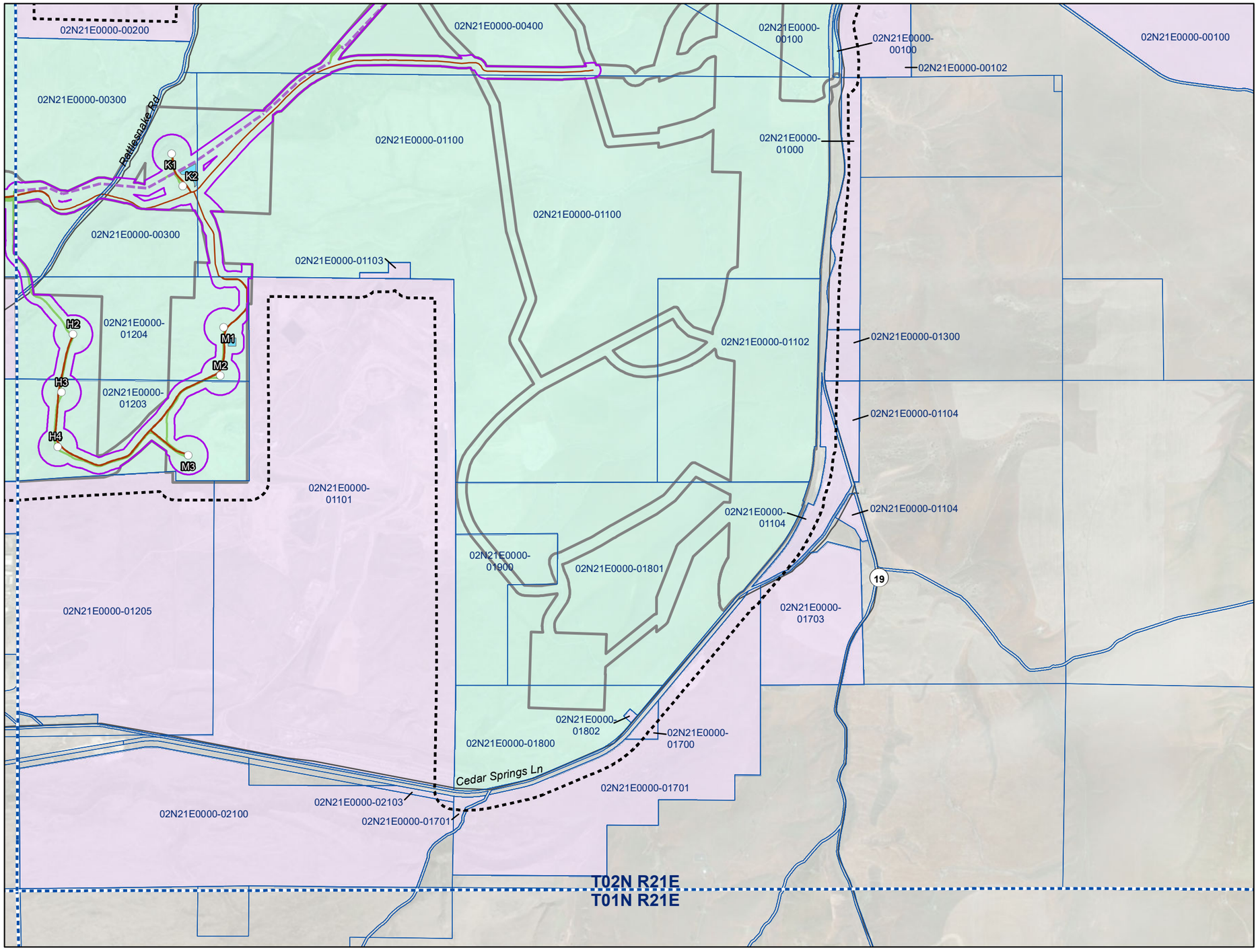

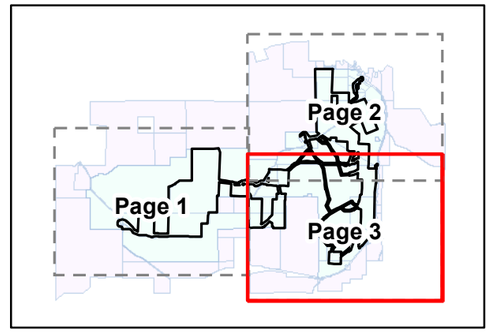

Legend

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Attachment 11 Page 3 of 3
Gilliam County Tax Lots within 500 Feet of Property Subject to Amendment
Request for Amendment No. 3
Leaning Juniper IIA Wind Power Facility
Gilliam County, Oregon

Jacobs

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