BEFORE THE
ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON

In the Matter of the Request for Amendment #1 of the Site Certificate for the Leaning Juniper II Wind Power Facility	))))	FINAL ORDER ON AMENDMENT #1

November 20, 2009

LEANING JUNIPER II WIND POWER FACILITY:
FINAL ORDER ON AMENDMENT #1

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LIST OF ABBREVIATIONS

BLM	Bureau of Land Management
BPA	Bonneville Power Administration
Council	Oregon Energy Facility Siting Council
CRP	Conservation Reserve Program
CUP	Conditional Use Permit
Department	Oregon Department of Energy
DEQ	Oregon Department of Environmental Quality
DOGAMI	Oregon Department of Geology and Mineral Industries
DSL	Oregon Department of State Lands
FAA	Federal Aviation Administration
IBR	Iberdrola Renewables, Inc.
LCDC	Land Conservation and Development Commission
LJF	Leaning Juniper II Wind Power Facility
LJIIA	Leaning Juniper IIA (components previously approved in the Site Certificate)
LJIIB	Leaning Juniper IIB (components that are the subject of this amendment request)
LJWP	Leaning Juniper Wind Power II LLC
MW	megawatt or megawatts
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
NWC	Northwest Wildlife Consultants, Inc.
O&M	Operations and maintenance
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
ONHT	Oregon National Historic Trail
OPRD	Oregon Parks and Recreation Department
OWMP	Oregon Wildlife Monitoring Plan
OWRD	Oregon Water Resources Department
PPI	Producer Price Index published by the U.S. Bureau of Labor Statistics
Response to RAI	Letter from Jeffrey Durocher, with enclosures, September 15, 2009
Response to Additional RAI	Letter from Jeffrey Durocher, with enclosures, October 2, 2009
SCADA	Supervisory, Control and Data Acquisition (the control system for the energy facility)
SHPO	State Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WGS	Washington ground squirrel
WMMP	Wildlife Monitoring and Mitigation Plan
ZVI	Zone of Visual Influence

LEANING JUNIPER II WIND POWER FACILITY:
FINAL ORDER ON AMENDMENT #1

I. INTRODUCTION

The Oregon Energy Facility Siting Council (Council) issues this order in accordance with ORS 469.405 and OAR 345-027-0070. This order addresses a request by the certificate holder, Leaning Juniper Wind Power II LLC (LJWP) for amendment of the site certificate for the Leaning Juniper II Wind Power Facility (LJF).

The Council issued a site certificate to LJWP for the LJF in September 2007.[1] The site certificate authorized construction and operation of up to 133 wind turbines and related facility components. The facility would have a peak generating capacity of up to 279 megawatts. The facility site is entirely on private lands located in Gilliam County south of Arlington, Oregon. The certificate holder has not begun construction of the facility.

The definitions in ORS 469.300 and OAR 345-001-0010 apply to terms used in this order.

II. PROCEDURAL HISTORY AND AMENDMENT PROCESS

On June 19, 2009, the LJWP submitted a "Request for Amendment No. 1 to the Site Certificate for the Leaning Juniper II Wind Power Facility" (Request for Amendment #1). On June 26, 2009, LJWP sent copies of the amendment request to a list of reviewing agencies provided by the Oregon Department of Energy (Department) with a memorandum from the Department requesting agency comments by July 31, 2009. On June 30, the Department sent notice of the amendment request to all persons on the Council's mailing list, to the special list established for the facility and to an updated list of property owners supplied by LJWP, requesting public comments. Due to a typographical error that misstated the public comment deadline in the first notice, the Department sent a second notice on July 7, setting a deadline of August 7, 2009, for public comments on the amendment request.

By letter dated July 2, 2009, the Department notified LJWP that the Proposed Order would be issued no later than August 31, 2009.

In response to the public and agency notices of the amendment request, the Department received written comments from the following reviewing agencies and members of the public:

- Reviewing Agencies
  Jan Houck, Oregon Parks & Recreation Department
  Todd Hesse, Oregon Department of Environmental Quality, Water Quality
- Public Comments
  Shelly Mundy
  Tyson Mundy
  Shelley Fenton, Bonneville Power Administration

[1] *Site Certificate for the Leaning Juniper II Wind Power Facility* (September 21, 2007).

In addition, in teleconferences with the Oregon Department of Fish and Wildlife (ODFW) and the certificate holder on July 15 and 22, the Department heard comments from ODFW concerning the classification of habitat around areas where Washington ground squirrels had been observed during baseline surveys of the area proposed to be added to the LJF by the amendment. As a result of these discussions, the certificate holder agreed to reassess the habitat areas that would be classified as Category 1 habitat according to ODFW guidance and to reconfigure the proposed layout of new facility components in the expansion area to avoid Category 1 habitat. The Department agreed to allow additional time for ODFW to submit written comments after receiving the supplemental information from the certificate holder. On September 25, ODFW submitted comments on the draft revisions to the *Wildlife Monitoring and Mitigation Plan* and *Habitat Mitigation Plan*.[2]

The Department submitted requests for additional information (RAI) to the certificate holder.[3] On September 15, the certificate holder submitted a consolidated response, including revisions of the habitat mapping and proposed layout as well as the additional information that the Department had requested.[4] The Department advised the certificate holder that additional time would be needed to prepare the Proposed Order.[5] On September 18, the Department advised the certificate holder that the Proposed Order would be issued no later than October 19.[6]

The Department considered all of the comments in preparing the Proposed Order. Jan Houck stated that Oregon Parks & Recreation had no comments regarding the proposed amendment.[7] Todd Hesse noted that the Oregon Department of Environmental Quality administers the National Pollutant Discharge Elimination System (NPDES) 1200-C permit for construction activities.[8] He stated that, based on review of the Erosion and Sediment Control Plan (Request for Amendment #1, Attachment 5), the amendment would meet permit conditions and that the existing 1200-C permit for the LJF could be amended to cover the proposed expansion of the facility.

Shelly Mundy urged the Department to deny the amendment request and, instead, require the certificate holder to submit a new site certificate application.[9] She stated her opinion that "the sheer size of the proposed added area of 7,962 acres and addition of up to 90 turbines speaks not of a simple addition, but of a complete new project site, regardless of it being adjacent to an existing site." She felt that the requirements for "new proposed wind project sites" should not be "sidestepped by the application for a mere amendment." Tyson Mundy expressed a similar concern, stating his opinion that "these folks want to circumvent the system put in place to site these projects."

Under ORS 469.405, "a site certificate may be amended with the approval of the Energy Facility Siting Council." The Council has adopted rules for determining when a site certificate amendment is allowed (OAR 345-027-0030 and -0050) and rules setting out the

[2] Email from Rose Owens, Oregon Department of Fish and Wildlife, September 25, 2009.
[3] Email from John White, Oregon Department of Energy, July 22, August 17, 18 and 20, 2009.
[4] Letter from Jeffrey Durocher, with enclosures, September 15, 2009.
[5] Email from John White, Oregon Department of Energy, August 14, 2009.
[6] Email from John White, Oregon Department of Energy, September 18, 2009.
[7] Email from Jan Houck, Oregon Parks & Recreation Department, July 1, 2009.
[8] Email from Todd Hesse, Oregon Department of Environmental Quality, Water Quality Section, July 10, 2009.
[9] Email from Shelly Mundy, July 15, 2009.

procedure for amending a site certificate (OAR 345-027-0060 and -0070). The proposed expansion of the LJF by amendment of the site certificate is allowed under the applicable rules. The Council has previously approved site certificate amendments to authorize expansion of the area within a site boundary or to increase the number of wind turbines in a wind facility.[10] Although the proposed amendment of the LJF would enlarge the area within the site boundary, it would not increase the total number of wind turbines authorized under the site certificate or increase the combined peak generating capacity of the facility.

Shelley Fenton commented that the Bonneville Power Administration (BPA) requires an application for BPA approval if the proposed collector substation would be located within "the easement right-of-way occupied by BPA's McNary Jones Canyon #1, Ashe-Marion #2 and Slatt-Buckley #1 transmission lines."[11] BPA has sent further information and application materials to the certificate holder. Under Condition 5, the certificate holder must have "construction rights" before beginning construction on any part of the site.

The Department analyzed the Request for Amendment #1 for compliance with all applicable Council standards. The Department's recommended findings and conclusions are discussed herein. The Department recommended that the Council approve the amendment request, subject to revisions of the site certificate discussed below at page 92.

After issuing the Proposed Order on October 15, 2009, the Department issued a public notice as required under OAR 345-027-0070(5) and posted the notice on the Department's Internet website. The notice invited public comments and gave a deadline of November 16, 2009, for comments or contested case requests. The Department did not receive any comments or contested case requests by the deadline of November 16.

At a public meeting in The Dalles, Oregon, on November 20, 2009, the Council considered the Department's recommendations and voted to approve the amendment request.

III. DESCRIPTION OF THE PROPOSED AMENDMENT

The amendment request describes an expansion of the site boundary of the LJF. The amendment would not increase the total number of wind turbines authorized under the site certificate or increase the combined peak generating capacity of the facility. LJWP requests the expansion "to minimize wake impacts from existing nearby wind projects and optimize the use of the wind resource."[12] The amendment would add approximately 7,962 acres to the site and would authorize the construction and operation of up to 84 wind turbines and related infrastructure within the new area.[13] The new area lies generally southeast of the current LJF site. LJWP refers to the facility components in the new area as "Leaning Juniper IIB" (LJIIB) and the facility components in the previously-approved area as "Leaning Juniper IIA" (LJIIA). The LJIIB wind turbines would have a maximum combined peak generating capacity of up to 186 megawatts.[14]

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[10] See, for example, *Final Order on Amendment #4 for the Stateline Wind Project* (March 27, 2009) and *Final Order on Amendment #3 for the Klondike III Wind Project* (November 16, 2007).
[11] Fax from Shelley Fenton, Bonneville Power Administration, August 6, 2009.
[12] Request for Amendment #1, Section 1, p. 1.
[13] The certificate holder reduced the maximum number of turbines from 90 to 84 (Response to RAI, Summary of Modifications, p. 1).
[14] The certificate holder proposes to build up to 84 1.5-MW turbines (126 MW), 84 2.1-MW turbines (176.4 MW) or 62 3.0-MW turbines (186 MW) in the LJIIB area (Response to Additional RAI (table) #14, p. 19).

LJWP requests the option to build a new substation in the LJIIB area and a 230-kV aboveground transmission line from the new substation to the LJIIA substation near the Bonneville Power Administration's (BPA) Jones Canyon Switching Station. Alternatively, power generated from the LJIIB turbines would be transmitted to the LJIIA substation on two parallel, double-circuit 34.5-kV aboveground transmission lines.

In addition, LJWP requests an extension of the deadline for completing construction of the LJF. Under the current site certificate, the deadline for completing construction is September 24, 2011 (four years from the effective date of the site certificate). If approved, the amendment would extend the construction completion date to September 24, 2013. LJWP anticipates beginning construction of the LJIIA components in late 2009. LJWP requests the extension "to allow sufficient time to complete construction in the LJIIB area, taking into account the time needed to complete the SC amendment process and prepare the modified design for LJIIB."[15] Although the certificate holder plans to start construction of the LJIIB components immediately following construction of LJIIA, the certificate holder requests the flexibility to build LJIIB in one or more phases, "given that construction could conceivably be delayed by weather or other unforeseen circumstances such as market changes."

1. Amendment Procedure

Under OAR 345-027-0030, a site certificate amendment is needed to extend the deadline for completion of construction. Under the rule, the Council may grant an extension of no more than two years from the current deadline. The rule requires the certificate holder to submit the request "no later than six months before the date of the applicable deadline, or, if the certificate holder demonstrates good cause for the delay in submitting the request, no later than the applicable deadline." Under the current site certificate, the deadline to complete construction of the LJF is "within four years after the effective date of the site certificate," which would be September 24, 2011 (Condition 26). The certificate holder submitted its request to extend the deadline for completing construction more than six months before the deadline. The Council finds that the request to extend the construction deadline was filed in a timely manner.

For the amendment extending the deadline for completing construction, the Council must consider whether the facility complies with all Council standards, whether there has been any change of circumstances that affects a previous Council finding that was required for issuance of the site certificate and whether the Council has previously granted an extension of the deadline. The Council has not previously granted an extension of the deadline.

In addition, under OAR 345-027-0050, a site certificate amendment is needed because the certificate holder proposes to design, construct or operate the LJF in a manner different from the description in the current site certificate. In particular, the certificate holder proposes to expand the site boundary, which could result in significant adverse impacts that the Council has not previously addressed. The proposed amendment requires new conditions and modifications of current conditions in the site certificate. The Department and the Council must follow the procedures of OAR 345-027-0070 in reviewing the amendment request.

[15] Request for Amendment #1, Section 2, p. 1.

In making a decision on this amendment request, the Council applies the applicable substantive criteria, as described in OAR 345-022-0030, in effect on the date the certificate holder submitted the request for amendment. The Council applies all other State statutes, administrative rules and local government ordinances in effect on the date the Council makes its decision. For an amendment that would change the site boundary, the Council must consider whether the facility complies with all Council standards with respect to the area added to the site by the amendment. For any amendment, the Council must consider whether the amount of the bond or letter of credit required under OAR 345-022-0050 is adequate. We address compliance with these requirements in Sections IV and V.

2. Amendments to the Site Certificate as Proposed by the Certificate Holder

As an attachment to the Request for Amendment #1, LJWP proposed specific changes, additions and deletions to the *Site Certificate for the Leaning Juniper II Wind Power Facility* (September 21, 2007).[16] The attachment is incorporated herein by this reference. The Department recommended that the Council approve the substance of the site certificate amendments proposed by LJWP with other modifications consistent with the amendment request. The Department's recommended revisions are discussed herein beginning at page 92.

In addition to the necessary amendments of the Site Certificate, the amendment request would require amendments of the *Wildlife Monitoring and Mitigation Plan*, the *Revegetation Plan* and the *Habitat Mitigation Plan*.[17] The *Wildlife Monitoring and Mitigation Plan* is incorporated in Condition 87 of the Site Certificate. The Department's recommended modifications of the *Wildlife Monitoring and Mitigation Plan* are addressed in Revision 27 and in Attachment A. The *Revegetation Plan* is incorporated in Condition 74 of the Site Certificate, and the Department's recommended modifications are addressed in Revision 20 and in Attachment B. The *Habitat Mitigation Plan* is incorporated in Condition 89 of the Site Certificate, and the Department's recommended modifications are addressed in Revision 29 and in Attachment C.

3. Description of the Facility Authorized by Amendment #1

The *Final Order on the Application* describes the approved LJF facility.[18] If the Council approves Amendment #1, the certificate holder would be authorized to construct and operate up to 84 wind turbines with a combined peak generating capacity of up to 186 MW together with related or supporting facilities within a new micrositing area of approximately 7,962 acres (LJIIB).[19] The Council previously approved a micrositing area of approximately 6,404 acres (LJIIA).[20] The amendment would enlarge the site boundary of the LJF but would not authorize the construction of more turbines or a greater peak generating capacity for the facility as a whole than previously authorized. Facility components as modified by the proposed amendment are described below.

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[16] Request for Amendment #1, Attachment 2.
[17] *Final Order on the Application* (September 21, 2007), Attachments A, B and C.
[18] *Final Order on the Application* (September 21, 2007), pp. 10-13.
[19] Request for Amendment #1, Section 1, p. 1, Response to RAI, Summary of Modifications, p.1, and Response to Additional RAI (table) #1, p. 2, and #14, p. 19, and Attachment 2, "Table 3-Revised: Habitat Types and Categories in the Amended Site Boundary for LJIIB with Area of Impact."
[20] Response to Additional RAI, Attachment 2, "Table 3--Revised October 2, 2009: Habitat Types and Categories in the Existing Site Boundary for Leaning Juniper IIA with Area of Impact."

Turbines

The LJF consists of up to 127 wind turbines, each having a peak generating capacity up to 3.0 MW.[21] The combined peak generating capacity of the facility would not exceed 276.3 MW.[22]

The certificate holder plans to construct 43 2.1-MW turbines (90.3 MW) in the previously-approved LJIIA area. Not more than 84 wind turbines would be constructed within the LJIIB micrositing area.[23] The Council modifies Condition 27 as described in Revision 8. The modification would revise the condition by reducing the maximum number of turbines at the facility from 133 to 127, based on what the certificate holder now proposes to build, and would reduce the maximum generating capacity of the facility from 279 MW to 277 MW. The authorized turbines are otherwise as described in the *Final Order on the Application*.

Power Collection System

A power collection system operating at 34.5 kV would carry the power from each turbine to a project substation. To the extent practicable, the collection system would be installed underground at a depth of at least three feet (Condition 78). Segments of the collector line might be constructed aboveground where necessary to cross streams, wetlands or canyons or because of other geotechnical considerations. The site certificate authorizes up to 33.2 miles of collector lines in the LJIIA area, of which not more than 9.9 miles (30 percent) may be aboveground.

If approved, Amendment #1 would authorize up to 22.3 additional miles of collector lines in the LJIIB area, of which not more than 6.7 miles (30 percent) may be installed aboveground.[24] The collector system is otherwise as described in the *Final Order on the Application*.

Substation and Interconnection

The LJIIA substation will be built near the BPA Jones Canyon Switching Station. Based on a Change Request approved by the Department in March 2009, the LJIIA substation would be moved approximately 200 feet to the northeast from where it is shown on Figure C-4 of the Site Certificate Application as submitted on October 4, 2006.[25] The location of the proposed substation is shown as "Lot 4" in Figure 4 of the amendment request.[26] A short interconnection line from the LJIIA substation carries the power to the BPA switching station and the existing McNary-Santiam 230-kV transmission line.

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[21] Under Condition 27 of the Site Certificate, the certificate holder may make the final turbine selection after a site certificate has been issued but before beginning construction.

[22] The certificate holder plans to build 43 2.1-MW turbines (90.3 MW) in the LJIIA area (email from Jeffrey Durocher, September 8, 2009) and up to 62 3.0-MW turbines (186 MW) in the LJIIB area (Response to Additional RAI (table) #14, p. 19).

[23] Response to RAI, Summary of Modifications, p.1.

[24] Request for Amendment #1, Section 4, p. 3, and Response to RAI, Summary of Modifications, p. 1. The total shown here excludes additional aboveground 34.5-kV lines, approximately 6.1 miles in length that may be built under the 34.5-kV interconnection option described below.

[25] Under OAR 345-027-0050(5), a certificate holder may ask the Department to determine whether a proposed change requires a site certificate amendment (Change Request). The Department may approve a Change Request based on the criteria in OAR 345-027-0050.

[26] Request for Amendment #1, Attachment 1, Figure 4.

In this amendment, LJWP requests the option to transmit the power generated by the LJIIB turbines to the LJIIA substation by either of two methods, described below.

- The energy from the LJIIB turbines would be collected and transferred to the LJIIA substation by a 34.5-kV aboveground collector system. This collector system would consist of two double-circuit 34.5-kV lines running parallel to each other.
- The energy from the LJIIB turbines would be collected and routed to a new substation in the LJIIB area, where the power would be stepped up to 230 kV. The power would be transmitted to the LJIIA substation by a 230-kV aboveground transmission line. The 230-kV line would be carried on monopole or H-frame support structures.[27]

LJWP proposes preferred and alternate routes for the transmission line under either the 34.5-kV option or the 230-kV option. The proposed routes and proposed LJIIB substation location are shown on Figures 2 and 3 of the amendment request.[28] Under either route, the aboveground transmission line would be approximately 6.1 miles long.[29] If the LJIIB substation is built, it would occupy a permanent area of approximately 3 acres.[30]

Meteorological Towers

The current site certificate authorizes the construction and operation of four permanent meteorological (met) towers in the LJIIA area. Under the proposed amendment, the certificate holder would be authorized to construct and operate two met towers in the LJIIB area, but the total number of met towers for the LJF as a whole would be limited to four.[31] The met towers are otherwise as described in the *Final Order on the Application*.

Operations and Maintenance Facilities

LJWP is planning to construct one operations and maintenance (O&M) building in the LJIIA area.[32] The building will be no larger than 4,000 square feet and will be built within a 2-acre area, which will include a graveled parking and storage area.[33] Although the site certificate authorizes the construction of two O&M buildings, the certificate holder is not currently planning to construct a second O&M building and is not requesting any change to the previously-authorized O&M buildings in this amendment request.

Control System

A fiber optic communications network would link the wind turbines to a central computer at the O&M buildings. A Supervisory, Control and Data Acquisition (SCADA) system would collect operating and performance data from each wind turbine and from the project as a whole and allow remote operation of the wind turbines. The length of SCADA system fiber optic lines is generally the same as the length of the collector system, described above (a total of up to 22.3 miles for LJIIB). In addition, the LJIIB SCADA system would

[27] Request for Amendment #1, Attachment 1, Figures 5-7.
[28] Response to RAI, Attachment C, revised Figures 2 and 3.
[29] Response to RAI, Summary of Modifications, p. 1.
[30] Response to RAI, Attachment 1, revised Table 1.
[31] Request for Amendment #1, Section 4, p. 6.
[32] Response to RAI, Attachment G, Table 1.
[33] Response to RAI, Attachment G, Table 1, and email from Jeffrey Durocher, September 21, 2009.

include lightning shield communication wires from the collector substation to the interconnection station along the length of the 230-kV transmission line (an additional 6.1 miles). Alternatively, if 34.5-kV lines are used to carry the power from LJIIB to the LJIIA substation, as described above, then lightning shield communication cables will parallel each of the double-circuit 34.5-kV lines (a total of up to 12.2 miles). The SCADA system is otherwise as described in the *Final Order on the Application*.

Access Roads

The current site certificate authorizes approximately 28 miles of new access roads and 7 miles of improved existing private roads in the LJIIA area.

Up to 20.9 miles of new access roads would be constructed for LJIIB. In addition, approximately 5.4 miles of existing County roads and approximately 0.6 miles of existing private roads would be improved.[34] During construction, new access roads and improved private roads would have a temporary width of up to 80 feet (for use as crane paths). During operation, improved private roads would have a finished width of 20 feet. Up to 16.7 miles of new roads would have a finished width of 20 feet and up to 4.2 miles of new roads would have a finished width of 32 feet. New roads and improved private roads are otherwise as described in the *Final Order on the Application*.

Three existing County roads will be improved by widening, grading and graveling. County roads are typically 16 feet wide, and will need to be widened to up to 60 feet during construction and up to 30 feet during operations.

Construction Disturbance Areas

The current site certificate authorizes a 2-acre laydown and staging area near each turbine string and several centrally-located 5-acre areas. Additional laydown areas were authorized at each tower site and at locations near collector line construction. The total area temporarily disturbed for laydown and staging during construction was estimated to amount to approximately 527 acres within the LJIIA site boundary.

The amendment would authorize a total of eight 2.5-acre staging areas located adjacent to turbine strings and two centrally-located, 10-acre staging areas in the LJIIB area.[35] Additional laydown area would be needed at each tower site.[36] The total area temporarily disturbed for laydown and staging during construction would amount to approximately 345 acres within the LJIIB site boundary.

Site and Site Boundary

ORS 469.300 defines a "site" as "any proposed location of an energy facility and related or supporting facilities." OAR 345-001-0010(53) defines "site boundary" as "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas and all corridors and micrositing corridors proposed by the applicant." The previously-approved LJF site lies southwest of Arlington, in Gilliam County, Oregon. The Arlington city limit boundary is adjacent to the site boundary. The LJIIB area lies to the southeast of the previously-approved site and would add approximately

[34] Request for Amendment #1, Section 4, p. 5, and Response to RAI, Summary of Modifications, p. 1, and Attachment 1, Table 1.
[35] Request for Amendment #1, Section 4, p. 6, and Response to RAI, Summary of Modifications, p. 1.
[36] Response to RAI, Attachment 1, revised Table 2.

7,962 acres to the facility site.[37] The approved LJIIA area and the proposed LJIIB area are shown on Figure 1 of the Request for Amendment #1, which is incorporated herein by reference.[38]

Revised Figures 2 and 3 illustrate possible configurations of the proposed LJIIB components within the site boundary.[39] Approval of Amendment #1 would authorize the certificate holder to construct wind turbines and other facility components within the micrositing area, subject to the conditions of the site certificate. Before beginning construction, the certificate holder must provide to the Department a map showing the final design configuration of the facility.[40] Within 90 days after beginning operation of the facility, the certificate holder must submit a legal description of the facility site to the Department (Condition 2), as required by OAR 345-027-0020(2).

IV. THE COUNCIL'S SITING STANDARDS: FINDINGS AND CONCLUSIONS

The Council must decide whether the amendment complies with the facility siting standards adopted by the Council. In addition, the Council must impose conditions for the protection of the public health and safety, conditions for the time of commencement and completion of construction and conditions to ensure compliance with the standards, statutes and rules addressed in the project order. ORS 469.401(2).

The Council is not authorized to determine compliance with regulatory programs that have been delegated to another state agency by the federal government. ORS 469.503(3). Nevertheless, the Council may consider these programs in the context of its own standards to ensure public health and safety, resource efficiency and protection of the environment.

The Council has no jurisdiction over design or operational issues that do not relate to siting, such as matters relating to employee health and safety, building code compliance, wage and hour or other labor regulations, or local government fees and charges. ORS 469.401(4).

In making its decision on an amendment of a site certificate, the Council applies the applicable state statutes, administrative rules and local government ordinances that are in effect on the date the Council makes its decision, except when applying the Land Use Standard. In making findings on the Land Use Standard, the Council applies the applicable substantive criteria in effect on the date the certificate holder submitted the request for amendment. OAR 345-027-0070(10).

1. General Standard of Review

OAR 345-022-0000

(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:

[37] Request for Amendment #1, Section 3, p. 1.
[38] The certificate holder provided a preliminary legal description of the boundaries of the LJIIB area (Request for Amendment #1, Section 4, pp. 6-12).
[39] Response to RAI, Attachment C, revised Figures 2 and 3.
[40] This requirement is contained in the *Habitat Mitigation Plan*, which is incorporated in the site certificate by Condition 89.

(a) The facility complies with the requirements of the Oregon Energy Facility Siting statutes, ORS 469.300 to ORS 469.570 and 469.590 to 469.619, and the standards adopted by the Council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh the damage to the resources protected by the 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.

* * *

We address the requirements of OAR 345-022-0000 in the findings of fact, reasoning, conditions and conclusions of law discussed in the sections that follow. Upon consideration of all of the evidence in the record, we state our general conclusion regarding the amendment request in Section VII.

2. Standards about the Applicant

(a) Organizational Expertise

OAR 345-022-0010

(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.

Findings of Fact

A. Organizational Expertise

In the *Final Order on the Application*, the Council found that the certificate holder (LJWP) had the organizational expertise necessary to construct and operate the LJF because of its corporate relationship as a subsidiary of PPM Energy, Inc.[41] The Council found that PPM Energy was ultimately owned by Iberdrola SA, a Spanish electric company. Since the date of the *Final Order*, PPM Energy has changed its name to "Iberdrola Renewables, Inc." (IBR). Although there have been other modifications of the corporate organization above LJWP, the ultimate corporate parent is still Iberdrola Renovables SA.[42]

Although IBR is ultimately owned by Iberdrola Renovables SA, the role of the parent company in the construction and operation of the facility is primarily financial.[43] The certificate holder relies on IBR to support its expertise to construct, operate and retire the facility. IBR's experience in Oregon includes either construction or operational experience with the Leaning Juniper I, Klondike I, II and III, Pebble Springs, Hay Canyon and Star Point wind energy projects. IBR and the former PPM Energy, Inc. have not received any significant regulatory citations in the course of constructing and operating wind energy facilities in the United States.[44] The certificate holder is bound by Condition 32 of the site certificate to hire qualified contractors with direct experience in wind energy facility construction to design and build the proposed facility.

B. Third-Party Permits

LJWP does not rely on any state or local government permit issued to a third party for the construction and operation of the LJIIA or LJIIB components of the LJF.

Conclusions of Law

Based on the findings stated above, the Council concludes that the certificate holder would meet the Council's Organizational Expertise Standard if Amendment #1 were approved.

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[41] Final Order on the Application (September 21, 2007), pp. 17-18.
[42] Request for Amendment #1, Section 4, p. 13.
[43] Response to Additional RAI (table) #18, p. 21.
[44] Since February 2006, IBR has received four letters and minor citations, without any penalties being imposed. Corrective actions were taken (Response to Additional RAI (table) #18, pp. 21-22).

(b) Retirement and Financial Assurance

OAR 345-022-0050

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.

Findings of Fact

A. LJIIA

In the *Final Order on the Application*, the Council found that the LJF site could be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.[45] The Council found that the certificate holder had demonstrated a reasonable likelihood of obtaining a bond or letter of credit, satisfactory to the Council, in an amount adequate to restore the site. The Council found that the value of the financial assurance bond or letter of credit for restoring the site would not exceed $8.847 million in 2006 dollars adjusted annually as described in Condition 30.[46] Condition 30 allows for an adjustment of the financial assurance amount prior to the beginning of construction, based on the final design configuration.

While Department review of the amendment request was pending, the certificate holder requested an adjustment of the financial assurance amount based on the final design configuration of the LJIIA components.[47] Construction of LJIIA was expected to begin in December 2009. The Department requested additional information regarding the final design and prepared a retirement cost estimate based on the following design details provided by the certificate holder:

- 43 Suzlon 2.1-MW wind turbines will be built in the LJIIA area.[48]
- The weight of metals in each turbine tower is 206.5 tons and the weight of metals in each turbine nacelle is 82.7 tons.[49]
- Each turbine tower foundation will have 38 cubic yards of concrete to a depth of three feet below grade.[50]

[45] *Final Order on the Application* (September 21, 2007), p. 25.
[46] The site restoration cost estimate was calculated based on unit costs shown in Table 2 (*Final Order on the Application* (September 21, 2008), p. 21).
[47] Email from Jeffrey Durocher, September 3, 2009.
[48] Email from Jeffrey Durocher, September 8, 2009.
[49] Email from Jeffrey Durocher, September 8, 2009. The Department assumed the weights were given in U.S. tons (short tons).
[50] In the Response to RAI, Attachment G, Table 1, p. 2, the certificate holder provided a calculation of the volume of concrete in the tower foundation from grade to three feet below grade, assuming a pedestal diameter of 18 feet. In response to the Department's follow-up question, the certificate holder stated that the assumed height of the foundation above grade was one foot (email from Jeffrey Durocher, September 21, 2009). The

- There will be 13 cubic yards of concrete for each transformer pad adjacent to each turbine tower.[51]
- Two permanent meteorological towers will be built.[52]
- One O&M building will be built, and it will be a 4,000-square-foot building on a 2-acre permanent site (with a graveled parking and storage area) with an additional 0.5 acres of temporary construction disturbance.[53]
- There will be 2.7 miles of aboveground segments of the 34.5-kV collector system and 0.3 miles of 230-kV transmission line.[54]
- There will be 12 junction boxes for the underground segments of the 34.5-kV collector system.[55]
- There will be 13.7 miles of newly-constructed access roads.[56]
- The area of temporary disturbance during site restoration would be 218 acres.[57]

In accordance with Condition 30 of the site certificate, the Department prepared a site restoration estimate based on the unit costs and general costs illustrated in Table 2 of the *Final Order on the Application*. The Department modified the unit cost for removal of the O&M building to reflect a 4,000-square-foot building on a 2-acre permanent site. The Department adjusted the subtotal to 4th Quarter 2009 dollars.[58] Condition 30 states that the adjustment is to be made to the "gross cost component" before adding 1-percent of the adjusted gross cost for the adjusted performance bond amount. This calculation, however, would result in double-counting the performance bond amount, which is already included in the "gross cost component" of Table 2. To avoid this unintended result, the Department added 1-percent of the adjusted subtotal for the performance bond to determine the proper adjusted gross cost and then calculated the administration and contingency amounts based on the adjusted gross cost. The Department's financial assurance calculation for LJIIA is shown in Table 1.

Department calculated the volume of concrete using the formula of πr^2 (3.12159 x 81), multiplying by the height (4 ft), converting the result to cubic yards and rounding up to the nearest whole cubic yard.

[51] Leaning Juniper II Site Certificate Application Supplement (May 2007), response to RAI B2.

[52] Response to Additional RAI (table) #7 and #8, pp. 6-7.

[53] Response to RAI, Attachment G, Table 1, p. 1, email from Jeffrey Durocher, September 21, 2009, and email from Linnea Eng, CH2M HILL, September 22, 2009.

[54] Email from Jeffrey Durocher, September 8, 2009.

[55] Email from Jeffrey Durocher, September 18, 2009.

[56] Response to RAI, Attachment G, Table 2, and email from Linnea Eng, CH2M HILL, September 22, 2009.

[57] The Department assumes that the area of temporary disturbance during site restoration would equal the area of temporary disturbance during construction, excluding the temporary disturbance areas associated with improvement of existing roads and installation of the underground segments of the collector system. The Department calculated the area of temporary disturbance that would have to be restored based on Response to Additional RAI, Attachment 4, revised Table 3, adding 0.5 acres of temporary disturbance around the O&M building and rounding the total to the nearest acre.

[58] The Department converted 2006 dollars to 4th Quarter 2009 dollars using an adjustment factor derived from current index values for the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast." The adjustment factor was the ratio of the 4th Quarter index value (124.7361) and the Annual average index value for 2006 (116.676).

Table 1: Site Restoration Cost for LJIIA (4th Quarter 2009 Dollars)

Cost Estimate Component	Quantity	Unit Cost	Extension
Turbines			
Disconnect electrical, ready for disassembly (per turbine)	43	$979	$42,097
Remove turbine blades, hubs and nacelles (per turbine)	43	$5,207	$223,901
Remove turbine towers (per net ton of steel)	12,436	$67	$833,212
Remove and load pad transformers (per turbine)	43	$2,250	$96,750
Foundation and transformer pad removal (per cubic yard)	2,193	$32	$70,176
Restore turbine pads and turnouts (per turbine)	43	$1,297	$55,771
Met Towers			
Dismantle and dispose of met towers (per tower)	2	$9,637	$19,274
Substation and O&M Building			
Dismantle and dispose of substation	1	$133,607	$133,607
Dismantle and dispose of O&M building	1	$47,156	$47,156
Transmission Line			
Remove aboveground 34.5-kV collector system (per mile)	2.7	$3,390	$9,153
Remove 230-kV transmission line (per mile)	0.3	$48,520	$14,556
Remove junction boxes to 4' below grade (each)	12	$1,322	$15,864
Access Roads			
Road removal, grading and seeding (per mile)	13.7	$74,486	$1,020,458
Temporary Disturbance Areas			
Restore area disturbed during restoration work (per acre)	218	$2,775	$604,950
General Costs			
Permits, mobilization, engineering, overhead			$444,403
Subtotal			$3,631,328
Subtotal Adjusted to 4th Quarter 2009 Dollars			$3,882,184
Performance Bond		1%	$38,882
Adjusted Gross Cost			**$3,921,006**
Administration and Project Management Costs		10%	$392,101
Future Developments Contingency		10%	$392,101
Total Site Restoration Cost			**$4,705,207**
Total Site Restoration Cost (rounded to nearest $1,000)			**$4,705,000**

The Council modifies Condition 30 to correct the adjustment calculation as described in Revision 9 at page 95. The current adjustment language would result in a double-counting of the performance bond cost. The revision conforms the adjustment language to the language used in Condition 31 of the *Site Certificate for the Helix Wind Power Facility* (July 31, 2009). The certificate holder concurs with this modification.[59]

[59] Response to Additional RAI (table) #8, p. 7.

B. LJIIB

The actions necessary to restore the LJIIA site to a useful, non-hazardous condition are described in the *Final Order on the Application*.[60] The same types of actions would be necessary to restore the LJIIB area. The Council finds that the LJF site (including both LJIIA and LJIIB), taking mitigation into account, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

The certificate holder estimated the site restoration cost for the LJIIB area would be $7.567 million in 2nd Quarter 2009 dollars.[61] The Department calculated an independent cost estimate for LJIIB, following the estimating procedure outlined in its draft "Facility Retirement Cost Estimating Guide" and adjusting unit costs to 4th Quarter 2009 dollars. The estimate assumed a configuration of the LJIIB components that would result in the highest site restoration cost consistent with the maximum design flexibility requested by the certificate holder.

The assumptions underlying the LJIIB cost estimate are as follows:

- 84 2.1-MW turbines would be built in the LJIIB area.[62]
- The weight of metals in each turbine tower is 206.5 tons and the weight of metals in each turbine nacelle is 82.7 tons.[63]
- Each turbine tower foundation will have 38 cubic yards of concrete to a depth of three feet below grade.[64]
- There would be 13 cubic yards of concrete for each transformer pad adjacent to each turbine tower.[65]
- Two permanent meteorological towers would be built.[66]
- No O&M building would be built in the LJIIB area.[67]
- One collector substation would be built in the LJIIB area.[68]
- 6.1 miles of 230-kV transmission line would be built.[69]

[60] *Final Order on the Application* (September 21, 2008), pp. 18-19.
[61] Response to RAI, Attachment 3.
[62] The certificate holder would have the option to build up to 84 2.1-MW turbines (Response to Additional RAI (table) #14, p. 19).
[63] Email from Jeffrey Durocher, September 8, 2009. The Department assumed the weights were given in U.S. tons (short tons).
[64] In the Response to RAI, Attachment G, Table 1, p. 2, the certificate holder provided a calculation of the volume of concrete in the tower foundation from grade to three feet below grade, assuming a pedestal diameter of 18 feet. In response to the Department's follow-up question, the certificate holder stated that the assumed height of the foundation above grade was one foot (email from Jeffrey Durocher, September 21, 2009). The Department calculated the volume of concrete using the formula of πr^2 (3.12159 x 81), multiplying by the height (4 ft), converting the result to cubic yards and rounding up to the nearest whole cubic yard.
[65] Leaning Juniper II Site Certificate Application Supplement (May 2007), response to RAI B2.
[66] Request for Amendment #1, Section 4, p. 6.
[67] Request for Amendment #1, Section 4, p. 6.
[68] For the purposes of a "highest-cost estimate," the Department assumes that the certificate holder would select the 230-kV interconnection option, which includes construction of a substation in the LJIIB area.

- 6.7 miles of aboveground segments of the 34.5-kV collector system would be built.[70]
- There would be 20 junction boxes for the underground segments of the 34.5-kV collector system.[71]
- 16.7 miles of newly-constructed access roads would be built to a finished width of 20 feet, and 4.2 miles of newly-constructed access roads would be built to a finished width of 32 feet.[72]
- Areas of temporary disturbance during site restoration would include 160 acres to be graded and seeded and 377 acres to be seeded only.[73]
- General costs are included to show the full cost estimate for LJIIB if it were operated separately or sold as a separate facility. If the LJF were constructed, operated and retired as a whole, including all LJIIA and LJIIB components, the general costs (permits, mobilization, engineering, overhead) would be accounted for in the financial assurance amount for LJIIA (as shown in Table 1). In that case, the general costs could be omitted in calculating financial assurance for LJIIB.

Using these highest-cost assumptions, the Department estimated the site restoration cost for LJIIB as shown in Table 2.[74]

Table 2: Site Restoration Cost for LJIIB (4th Quarter 2009 Dollars)

Cost Estimate Component	Quantity	Unit Cost	Extension
Turbines			
Disconnect electrical, ready for disassembly (per turbine)	84	$1,050	$88,200
Remove turbine blades, hubs and nacelles (per turbine)	84	$5,594	$469,896
Remove turbine towers (per net ton of steel)	24,293	$72.01	$1,749,339
Remove and load pad transformers (per turbine)	84	$2,417	$203,028
Foundation and transformer pad removal (per cubic yard)	4,284	$47.34	$202,805

[69] Request for Amendment #1, Section 4, p. 4, Response to RAI, Summary of Modifications, p. 1, and email from Linnea Eng, CH2M HILL, October 7, 2009.
[70] Response to RAI, Summary of Modifications, p. 1, and email from Linnea Eng, CH2M HILL, October 7, 2009.
[71] Response to Additional RAI (table) #14, pp. 19-20.
[72] Response to RAI, Attachment 1, Table 1.
[73] The Department calculated the area of temporary disturbance that would have to be restored based on Response to RAI, Attachment 1, Table 2, excluding areas associated with improvement of existing roads and installation of underground collector lines and assuming the 230-kV interconnection option would be built. The Department corrected the area of temporary disturbance associated with aboveground collector lines, based on a maximum of 6.7 miles (35,376 linear feet) of aboveground collector with up to 177 support poles (spaced 200 feet apart). Areas where grading and seeding would be needed include areas around dismantled met towers and removed access roads.
[74] The Facility Retirement Cost Estimating Guide computes site restoration costs in mid-2004 dollars. In Table 2, the Department adjusted the unit costs to 4th Quarter 2009 dollars using an adjustment factor derived from current index values for the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast." The adjustment factor was the ratio of the 4th Quarter index value (124.7361) and the average of the 2nd Quarter 2004 (109.185) and 3rd Quarter 2004 (109.807) index values.

Met Towers			
Dismantle and dispose of met towers (per tower)	2	$8,921	$17,842
Substation			
Dismantle and dispose of substation	1	$84,602	$84,602
Transmission line			
Remove aboveground 34.5-kV collector system (per mile)	6.7	$5,241	$35,115
Remove 230-kV transmission line (per mile)	6.1	$22,593	$137,817
Remove junction boxes to 4' below grade (each)	20	$1,420	$28,400
Access Roads			
20-foot road removal, grading and seeding (per mile)	16.7	$21,887	$365,513
32-foot road removal, grading and seeding (per mile)	4.2	$35,019	$147,080
Temporary Disturbance Areas			
Access roads and met towers (per acre)	146	$6,001	$876,146
Transmission lines, laydown areas, crane paths (per acre)	377	$2,985	$1,125,345
General Costs			
Permits, mobilization, engineering, overhead			$476,172
Subtotal			**$6,007,300**
Performance Bond		1%	$60,073
Gross Cost			**$6,067,373**
Administration and Project Management Costs		10%	$606,737
Future Developments Contingency		10%	$606,737
Total Site Restoration Cost			$7,280,848
Total Site Restoration Cost (rounded to nearest $1,000)			**$7,281,000**

Based on Table 2, the Council finds that $7.281 million in 4th Quarter 2009 dollars is a conservative estimate of the cost to restore the LJIIB site to a useful, non-hazardous condition. Because this estimate is based on highest-cost assumptions, it may overstate the restoration costs for LJIIB under its final design configuration. In Revision 33, the Council adopts Condition 101, which would allow the certificate holder to adjust the amount of the initial bond or letter of credit for LJIIB based on the final design configuration of the facility based on the costs shown in Table 2, subject to Department approval.

C. Ability of the Certificate Holder to Obtain a Bond or Letter of Credit

OAR 345-022-0050(2) requires the Council to decide whether the certificate holder has a reasonable likelihood of obtaining a bond or letter of credit, in a form and amount satisfactory to the Council, to restore the LJF site. The combined site restoration estimates for LJIIA and LJIIB amount to $11.986 million (4th Quarter, 2009 dollars).

In the *Final Order on the Application*, the Council found that LJWP had demonstrated a reasonable likelihood of obtaining a bond or letter or credit sufficient to restore the LJIIA site based on a letter from Royal Bank of Scotland (Bank).[75] The letter stated that PPM Energy had "sufficient available letter of credit capacity" to support a letter of credit of $9 million "under its existing uncommitted financing arrangements with the Bank."[76] The letter acknowledged that the credit could be adjusted on an annual basis for inflation "subject to a

[75] *Final Order on the Application* (September 21, 2007), p. 24.
[76] The certificate holder is a subsidiary of IBR, formerly known as PPM Energy.

cap" of $17 million. The letter supports a finding that the certificate holder could obtain a bond or letter of credit in a sufficient amount to provide financial assurance for the LJF if Amendment #1 were granted. In addition, IBR has successfully obtained financial assurance necessary for other facilities that are subject to Oregon site certificates, including the Klondike III Wind Project, the Klamath Cogeneration Project and the Klamath Generation Peakers facility.

The Council finds that LJWP has demonstrated a reasonable likelihood of obtaining bonds or letters or credit, satisfactory to the Council, in combined amounts adequate to restore the site to a useful, non-hazardous condition.

In the amendment request, LJWP asks the Council to consider the cost of "decommissioning security" and to take into account the following when establishing the amount and timing the "security" (financial assurance):[77]

- The risk of the LJIIB facility ceasing operations in the first 10 years is extremely low.
- The wind turbines will have a significant resale value in the early years of facility life.
- The salvage value of the turbines and towers warrants consideration.
- The landowner leases require LJWP to decommission the facility.

Specifically, LJWP requests the following:[78]

> LJWP prefers that the decommissioning security requirement become effective in the later years of the LJIIB facility's life (e.g., in year 15). At that point, the facility will still have substantial commercial value, but decommissioning could be expected after another 15 to 20 years.

OAR 345-027-0020(8) requires the certificate holder to submit a financial assurance instrument to the State of Oregon "before beginning construction of the facility." The form and amount must be "satisfactory to the Council to restore the site to a useful, non-hazardous condition." The Council finds that LJWP's request to delay the effective date of the financial assurance requirement until "the later years of the LJIIB facility's life" conflicts with the requirements of OAR 345-027-0020(8). The Council, therefore, denies the request.

Conclusions of Law

Based on the findings and site certificate conditions discussed above, the Council concludes that LJWP would meet the Council's Retirement and Financial Assurance Standard if Amendment #1 were approved.

3. Standards about the Impacts of Construction and Operation

(a) Land Use

OAR 345-022-0030

(1) 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.

[77] Request for Amendment #1, Section 4, p. 31.
[78] Request for Amendment #1, Section 4, p. 31.

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

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(b) 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;

(B) The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the Council applicable to the siting of the proposed facility; and

(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.

* * *

Findings of Fact

In the *Final Order on the Application*, the Council found that the LJF did not comply with all of the applicable substantive criteria in Gilliam County. Specifically, the Council found that the LJF did not comply with Gilliam County Zoning Ordinance (GCZO) Section 4.020(D)(14), which limits the area that a "commercial utility facility" may occupy in an Exclusive Farm Use (EFU) zone.[79] The Council then considered, under ORS 469.504(1)(b)(B), whether the LJF otherwise complied with the applicable statewide planning goal (Goal 3). The Council found that the proposed principal use and access roads would "preclude more than 20 acres from use as a commercial agricultural enterprise" and that the LJF, therefore, would not comply with OAR 660-033-0130(22), which implements Goal 3.[80] To find compliance under ORS 469.504(1)(b)(B), the Council determined that an exception to Goal 3 was justified under ORS 469.504(2).[81]

In acting on this amendment request, the Council applies the applicable substantive criteria in effect on the date the certificate holder submitted the request for amendment. The Planning Director of Gilliam County has confirmed that the County has not changed its applicable substantive criteria for the evaluation of wind energy facilities since February 1, 2006 (the date the LJF preliminary application was submitted).[82] Accordingly, the local land use criteria that the Council applied in the *Final Order on the Application* are applicable to this amendment request. The applicable substantive criteria are GCZO Sections 4.020(A), 4.020(D)(14), 4.020(J), 7.010(A)(1), 7.010(A)(2), 7.020(Q) and 7.020(T).[83] Because the amendment request includes an extension of the construction completion date as well as an expansion of the site boundary, the Council must consider whether the LJF as a whole would comply with the Land Use Standard.

A. Applicable Local Criteria

GCZO Section 4.020(A): Exclusive Farm Use

In an EFU Zone, the following regulations shall apply:

A. High Value Farmland. Due to the limited amount of High Value Farmland in Gilliam County, the uses for High Value Farmland are not listed in this section. If a use permitted in Subsections 2 and 3 of this section is located on High Value Farmland, the requirements of this section and the requirements of OAR 660, Division 33, shall be used for the review.

[79] *Final Order on the Application* (September 21, 2007), p. 44.
[80] *Final Order on the Application* (September 21, 2007), p. 46.
[81] *Final Order on the Application* (September 21, 2007), p. 51.
[82] Request for Amendment #1, Section 4, p. 17.
[83] Identified by the Special Advisory Group (letter from Judge Laura Pryor, February 27, 2006).

GCZO Section 4.020(A) addresses uses "permitted in Subsections 2 and 3 of this section." Because the subsections of Section 4.020 are labeled as (A), (B), (C) and (D), the Council interprets the ordinance as addressing uses permitted in Subsections (B) and (C).

The types of uses associated with a wind energy facility are uses addressed as conditional uses under Subsection (D). LJIIA and LJIIB involve the same types of uses. The principal use is a "commercial utility facility for the purpose of generating power for public use by sale."[84] In the *Final Order on the Application*, the Council found that the substation and transmission interconnection line are "utility facilities necessary for public service" and the access roads are "accessory transportation improvements."[85]

Accordingly, the Council finds that the LJIIB uses are not uses "permitted in Subsections 2 and 3 of this section" because they are conditional uses permitted under GCZO Section 4.020(D). Nevertheless, the requirements of OAR 660, Division 33, are addressed herein beginning at page 32.

GCZO Section 4.020(D)(14): Conditional Uses Permitted

> *In an EFU Zone, the following regulations shall apply:*
>
> * * *
>
> *D. Conditional Uses Permitted. In the EFU Zone, the following uses and their accessory uses may be permitted if determined by the Planning Commission during a public hearing to satisfy the applicable criteria and procedures set forth in Section 7.040. The appropriate review criteria are identified for each use.*
>
> * * *
>
> *14. Commercial utility facilities for the purpose of generating power for public use by sale. A power generation facility not located on high-value farmland shall not preclude more than 20 acres from use as a commercial agricultural enterprise. A power generation facility located on high-value farmland shall not preclude more than 12 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.*

In the *Final Order on the Application*, the Council found that the LJF would be a commercial utility facility that would not be located on high-value farmland.[86] The Council found that the LJF would occupy land "substantially similar" to land that Gilliam County had previously addressed in issuing a Conditional Use Permit for the Leaning Juniper I.[87] The County had found that the land where the Leaning Juniper I facility would be built was not "high value farmland," and the Council applied the same finding to the LJF. The Council found that the area occupied by the "power generation facility" would preclude more than 20 acres of farmland from use as a commercial agricultural enterprise, as shown in Table 3. The Council found, therefore, that the LJF did not comply with GCZO Section 4.020(D)(14).

[84] *Final Order on the Application* (September 21, 2007), p. 45.
[85] *Final Order on the Application* (September 21, 2007), pp. 45-48.
[86] *Final Order on the Application* (September 21, 2007), p. 29.
[87] *Final Order on the Application* (September 21, 2007), pp. 28-29.

Table 3: Areas Occupied by the LJIIA Components[88]

Structure	LJ-North (acres)	LJ-South (acres)	LJF Total (acres)
Principal use			
Turbine towers, including pad areas and road turnouts	2.42	5.63	8.05
Meteorological towers	0.02	0.06	0.08
Aboveground 34.5-kV collector line			0.04
O&M facilities	2.5	2.5	5
Subtotal	4.94	8.19	13.17
Access roads	17.06	33.05	50.11
Total	22	41.24	63.28

OAR 660-033-0020(1)(a)(A) defines "agricultural land" as land in Natural Resources Conservation Service (NRCS) soil capability classes I-VI in Eastern Oregon. Class VII soils have very severe limitations that make them unsuitable for cultivation; Class VIII soils have limitations that nearly preclude their use for commercial crop production.[89] The definition of "agricultural land" nevertheless provides that land in capability classes other than I-VI "that is adjacent to or intermingled with" lands in classes I-VI "within a farm unit" shall be inventoried as agricultural land.[90] The Council finds that all Class VII and Class VIII soils within the LJF site boundary should be inventoried as agricultural land.

ORS 215.710(1) and OAR 660-033-0020(8) define "high value farmland" as land "in a tract composed predominantly of soils that are… [either irrigated or not irrigated and] classified prime, unique, Class I or II" by the NRCS.[91] "Tract" means one or more contiguous lots or parcels in the same ownership.[92]

The amendment request includes a figure that identifies the location of Class I and Class II soils within the LJF micrositing area.[93] The figure shows that at least some LJF components would be located on Class I or Class II soils. These components are located on "high value farmland" if the underlying "tracts" are composed "predominantly" of Class I or Class II soils. The Council defines "non-high-value farmland" as land that is in a tract that is not composed predominantly of Class I or Class II soils. The Department requested information about the "tracts" underlying the LJF in order to determine the extent of high-value farmland. The certificate holder noted that using "tracts" for purposes of analysis "could reach lands considerably outside the Facility site boundary, as a single landowner may own multiple contiguous parcels, which would then skew the analysis for purposes of determining a facility's potential impact to high-value farmland soils."[94] The certificate holder provided

[88] This table was included as Table 5 in the *Final Order on the Application* (September 21, 2007).
[89] NRCS, "Land Capability Classification," Soil Survey Report of Umatilla County Area (November 1988).
[90] OAR 660-033-0020(1)(b).
[91] ORS 215.710(6) provides that the applicable "soil classes, soil ratings or other soil designations" are those of the NRCS "in its most recent publication for that class, rating or designation before November 4, 1993."
[92] OAR 660-033-0020(10).
[93] Request for Amendment #1, Attachment 1, Figure 12.
[94] Response to Additional RAI (table) #11, p. 10.

estimates of the acres of Class I and Class II soils occupied by the LJIIB components as a conservative estimate of the impact on high-value farmland soils in the LJIIB area.

As shown in Table 4, the LJIIB principal use and access roads would occupy up to 24 acres of high-value farmland and 48 acres of non-high-value farmland.[95] Therefore, these components would occupy more than 12 acres of high-value farmland and more than 20 acres non-high-value farmland.

Table 4: Areas Occupied by the LJIIB Components[96]

Structure	**Total Permanent Impacts** (acres)	**High-Value Farmland** (acres)	**Non-High-Value Farmland** (acres)
Principal Use			
Turbine towers, including pad areas	3.19	1.37	1.82
Meteorological towers	0.04	0.02	0.02
Aboveground 34.5-kV collector segments	0.03	0.01	0.02
Subtotal	3.25	1.39	1.86
Access roads[97]	65.61	22.76	42.85
Interconnection system[98]			
34.5-kV transmission line structures	0.09	0	0.09
230-kV transmission line structures	0.06	0	0.06
LJIIB collector substation	3.00	0	3.00

Based on the data in Table 3 and Table 4, the Council finds that the LJF would not comply with GCZO Section 4.020(D)(14), if the amendment request were approved. The Council must therefore decide, under ORS 469.504(1)(b)(B), whether the LJF would "otherwise comply with the applicable statewide planning goals." We discuss compliance with the applicable statewide planning goal below at page 32.

In addition to the acreage limitation, GCZO Section 4.020(D)(14) provides that approval of a commercial utility facility is subject to the review criteria of Section 4.020.H:

> *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.*
>
> *1. The use may be approved only where the County finds that the use will not:*

[95] The estimation the maximum area of impact assumes construction of a second facility substation in the LJIIB area and a 230-kV transmission line from that substation to the LJIIA substation. Accordingly, the impact on high-value farmland would include the principal use (1.39 acres) and the access roads (22.76 acres) for a total of 24.15 acres. The impact on non-high-value farmland would include the principal use (1.86 acres), access roads (42.85 acres), the 230-kV transmission line (0.06 acres) and the substation (3.0 acres) for a total of 47.78 acres.
[96] Based on revised Table 2 (email from Linnea Eng, CH2M HILL, September 18, 2009).
[97] Area shown for the access roads includes 0.321 acres of impact to Class VII soil. This impact is associated almost entirely with roads (email from Linnea Eng, CH2M HILL, September 18, 2009)
[98] The option to build a 230-kV transmission line with a new substation would occupy the greatest area. The 34.5-kV option is shown for completeness. Only one option would be built.

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.

These criteria are the same as the criteria in GCZO Section 7.020(Q) and are discussed below at page 26.

GCZO Section 4.020(J): Property Development Standards

In an EFU Zone, the following regulations shall apply:
** * **
J. Property Development Standards. In the EFU Zone, the following standards apply to residential and nonresidential development.
1. Building Height. No limitations.
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.

In the *Final Order on the Application*, the Council adopted Condition 39 to incorporate the setback requirements of GCZO Section 4.020(J) and the applicant's proposed 50-foot setback for the O&M buildings and substation from property lines.[99] In the amendment request, LJWP proposes a modification of Condition 39 "to reflect new safety standards being implemented at other facilities."[100] The Department recommended the modifications to Condition 39 discussed in Revision 12 at page 97.[101] The recommended modifications would comply with the setback requirements of GCZO Section 4.020(J).

GCZO Section 7.010(A): General Approval Criteria and Conditions

A conditional use listed in this ordinance shall be permitted, altered or denied in accordance with the standards and procedures of this ordinance and this article by action of the Planning Commission or Planning Director. In the case of a use existing prior to the effective date of this ordinance, and classified in this ordinance as a Conditional Use, a change in use or in lot area or an alteration of a Conditional Use, a change in use or in lot area or an alteration of structure shall conform with the requirements for a Conditional Use.

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.

[99] *Final Order on the Application* (September 21, 2007), pp. 31-32.
[100] Request for Amendment #1, Section 4, p. 50.
[101] The certificate holder agrees with the proposed revision of Condition 39 (Response to Additional RAI (table) #12, p. 12, and Attachment 6.

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.

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.

GCZO Section 7.010(A)(1) contains a list of criteria that must be met "in addition to the criteria, standards and conditions that may be set forth in a specific Zone, this Article, or other regulations applicable to a specific Conditional Use." GCZO Section 7.010(A)(2) describes conditions that "may be imposed…[if] determined necessary to avoid a detrimental impact, and to otherwise protect the best interests of the surrounding area and the County as a whole." In the *Final Order on the Application*, the Council addressed these ordinances and made findings with regard to the LJIIA components, and those findings are incorporated herein by this reference.[102] The Council finds that the previous findings with regard to the LJIIA components apply as well to the proposed LJIIB components. In finding compliance with GCZO Section 7.010(A)(1) and (2), the Council adopted site certificate Conditions 3, 28, 70, 75, 97, 98, 99 and 100, and the Council applies these same conditions to LJIIB.

GCZO Section 7.020(Q): Conditional Uses in Exclusive Farm Use Zones

In addition to the standards of the zone in which the conditional use is located and the general standards of this ordinance, conditional uses shall meet the following standards:

* * *

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.

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.

In the *Final Order on the Application*, the Council found that the uses associated with the LJF include a commercial utility facility (allowable under GZCO 4.020(D)(14)), transportation improvements (allowable under GCZO 4.020(D)(25)) and utility facilities necessary for public service (allowable under GCZO 4.020(D)(29)).[103] Each of these uses is a "Type II" conditional use under the GCZO.

[102] *Final Order on the Application* (September 21, 2007), pp. 32-36.
[103] *Final Order on the Application* (September 21, 2007), p. 37.

The Council found that the lands devoted to farm use within the analysis area surrounding the LJIIA components are used for the cultivation of wheat and barley and for cattle grazing.[104] Similar farm uses occur adjacent to the LJIIB components.[105] The Council made findings regarding the impacts of construction and operation of the LJF on accepted farm practices.[106] Those findings are incorporated herein by this reference and apply as well to describe the impacts of construction and operation of LJIIB. The Council finds that the proposed LJIIB uses would comply with GCZO Section 7.020(Q).

GCZO Section 7.020(T): Wind Power Generation Facility Siting Requirements

In addition to the standards of the zone in which the conditional use is located and the general standards of this ordinance, conditional uses shall meet the following standards:

* * *

T. Wind Power Generation Facility Siting Requirements

1. Purpose. The Gilliam County Facility Siting Requirements are intended to establish a local conditional use permitting process that is clear, timely, and predictable as well as encompasses important local issues such as the health, safety and welfare of citizens in Gilliam County.

2. Definitions

a. "Commercial Wind Power Generation." An activity carried out for monetary gain using one or more wind turbine generators that has a combined generating capacity greater than 1 MW.

b. "Decommissioning Fund." An adequate financial vehicle dedicated and maintained with appropriate yearly adjustments to assure the money to dismantle the Wind Power Generation Facility and to restore the site to a useful, nonhazardous condition.

c. "Wind Power Generation Facility." An energy facility that consists of one or more wind turbines or other such devices and their related or supporting facilities that produce electric power from wind and are:

(1) Connected to a common switching station; or

(2) Constructed, maintained, or operated as a group of devices.

3. Procedure. The procedure for taking action on the siting of a facility is a request for a conditional use. A public hearing pursuant to Article 7 shall be held to determine if the applicant meets the siting requirements for a Wind Power Generation Facility. The requirement for a hearing will not apply to proposed facilities for which EFSC is making the land use decision.

4. Wind Power Generation Facility Siting Requirements. The requirements set out in this section shall apply for the application and review of the siting of a Wind Power Generation Facility and the issuance of a Gilliam County Facility Conditional Use Permit.

[104] *Final Order on the Application* (September 21, 2007), p. 37.
[105] Response to RAI (table), p. 14 (response to Request #8).
[106] *Final Order on the Application* (September 21, 2007), pp. 37-38.

a. The following information shall be provided as part of the application:[107]

* * *

In the *Final Order on the Application*, the Council found that subsections 1, 2, 3 and 4(a) of GCZO 7.020(T) are definitional and procedural ordinances that do not contain substantive land use standards applicable to the proposed use.[108]

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.

The site certificate contains conditions that were reviewed by the Gilliam County Planning Department. The Gilliam County Planning Department has not recommended any new or different conditions with regard to LJIIB.[109]

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 Public Works Department, and from the Oregon Department of Transportation.

Condition 28 requires the certificate holder to obtain all necessary state and local permits or approvals required for construction.

d. The following requirements and restrictions apply to the siting of a facility:

(1) 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.)

The proposed LJIIB components would be located entirely on land zoned EFU. Condition 39 incorporates the setback of 3,520 feet required by GCZO Section 7.020(T)(4)(d)(1).

(2) 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.

In the *Final Order on the Application*, the Council found that the LJF would comply with this ordinance requirement to make "reasonable efforts" to "blend the wind facility's towers with the natural surroundings."[110] The Council's previous findings apply as well to the

[107] The omitted subsections of GCZO Section 7.020(T)(4)(a) describe the contents of a CUP application for a wind power generating facility.
[108] Final Order on the Application (September 21, 2007), p. 39.
[109] Email from Susie Anderson, Gilliam County Planning Director, September 21, 2009.
[110] *Final Order on the Application* (September 21, 2007), p. 40.

LJIIB components. The Council adopted Conditions 90 and 92 to address turbine tower colors and aviation warning lights.

> *(3) Reasonable efforts shall be taken to protect and to preserve existing trees, vegetation, water resources, wildlife habitat or other significant natural resources.*
>
> *(4) The turbine towers shall be designed and constructed to discourage bird nesting and wildlife attraction.*

In the *Final Order on the Application*, the Council found that the LJF would comply with GCZO Section 7.020(T)(4)(d)(3) and (4).[111] Compliance with these requirements is addressed in the discussion of the Council's Threatened and Endangered Species Standard below at page 61 and Fish and Wildlife Habitat Standard below at page 63. The potential impact on water resources is addressed in the discussion of the Ground Water Act below at page 87. The effect of the facility on wetlands and other waters of the state protected by the Removal/Fill Law is addressed below at page 86. For the reasons discussed in those sections, the Council finds that the LJIIB components would comply with GCZO Section 7.020(T)(4)(d)(3) and (4).

> *(5) The turbine towers shall be of a size and design to help reduce noise or other detrimental effects.*

In the *Final Order on the Application*, the Council found that the LJF would comply with the state's Noise Control Regulations.[112] Compliance of the LJIIB components with the noise regulations is discussed below at page 79. Measures to reduce other "detrimental effects" from the LJIIB components are addressed in the discussion of the Council's Public Health and Safety Standards for Wind Energy Facilities below at page 55 and in the discussion of public safety issues beginning on page 89. Transmission line and electrical safety is discussed below at page 59. For the reasons discussed in the referenced sections, the Council finds that the LJIIB would comply with GCZO Section 7.020(T)(4)(d)(5).

> *(6) Private access roads shall be gated to protect the facility and property owners from illegal or unwarranted trespass, and illegal dumping and hunting.*

Condition 43 incorporates the requirements of GCZO Section 7.020(T)(4)(d)(6).

> *(7) 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.*

Condition 78 requires the certificate holder to install the collector system underground to the extent practicable. The Council modifies Condition 78 to limit the aboveground collector line to no more than 30 percent of the collector system and to specify that underground collector line be installed at least three feet below grade. The certificate holder stated that the underground collector lines would be buried "approximately 3 feet below the

[111] *Final Order on the Application* (September 21, 2007), p. 40.
[112] *Final Order on the Application* (September 21, 2007), pp. 40-41.

ground surface."[113] Condition 40 requires the certificate holder to consult with area landowners and lessees during construction and to implement measures to avoid adverse impact to farming practices. Based on these conditions, the Council finds that the LJIIB components would comply with GCZO Section 7.020(T)(4)(d)(7).

> *(8) 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:*
>
> *(a) The building is designed and constructed generally consistent with the character of similar buildings used by commercial farmers or ranchers; and*
>
> *(b) 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.*

The site certificate authorizes the construction of up to two O&M buildings within the LJIIA area. The certificate holder does not propose to build any additional O&M buildings within the LJIIB area. In the *Final Order on the Application*, the Council found that the O&M buildings proposed for the LJIIA area would comply with GCZO Section 7.020(T)(4)(d)(8).[114]

> *(9) A Wind Power Generation Facility shall comply with the Specific Safety Standards for Wind Facilities delineated in OAR 345-024-0010 (as adopted at time of application).*

Compliance with the Council's Public Health and Safety Standards for Wind Energy Facilities (OAR 345-024-0010) is discussed below at page 55.

> *(10) 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.*

This requirement is a procedural provision in the County ordinance. It is not a substantive land use standard applicable to the proposed facility.

> *5. Decommissioning/Dismantling Process. The applicant's dismantling of incomplete construction and/or decommissioning plan for the Wind Power Generation Facility shall include the following information*[115]
>
> * * *
>
> *g. For projects sited by EFSC, compliance with EFSC's financial assurance and decommissioning standards shall be deemed to be in compliance with the dismantling and decommissioning requirements of this Section 152.524.*[116]

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[113] Request for Amendment #1, Section 4, p. 3.
[114] *Final Order on the Application* (September 21, 2007), p. 41.
[115] Omitted subsections describe the required content of a decommissioning plan, including site restoration, the County bond requirement and arbitration.
[116] This cross-reference appears in an early draft of the Umatilla County wind ordinance, which Gilliam County apparently used as a model for drafting parts of GCZO Section 7.020(T). In context, this cross-reference refers to subsection (5) of GCZO Section 7.020(T).

The Council finds that the proposed LJIIB would comply with the Council's Financial Assurance Standard for the reasons discussed above beginning at page 12. Conditions 8, 9, 16, 30 and 31 require the certificate holder to restore the site and to provide adequate financial assurance to the State for site restoration.

6. Wind Power Generation Facility Siting Subsequent Requirements

a. A bond or letter of credit shall be established for the dismantling of uncompleted construction and/or decommissioning of the facility. (See §152.524.)[116] *For projects being sited by the State of Oregon's Energy Facility Siting Council (EFSC), the bond or letter of credit required by EFSC will be deemed to meet this requirement.*

Conditions 8 and 30 require the certificate holder to provide financial assurance for site restoration.

b. The actual latitude and longitude location or Stateplane NAD 83(91) coordinates of each turbine tower, connecting lines, and transmission lines shall be provided to Gilliam County once commercial electrical production begins.

c. A summary of as-built changes in the facility from the original plan, if any, shall be provided by the owner/operator.

Condition 44 requires the certificate holder to provide the actual location of turbine towers, connecting lines and transmission lines and a summary of as-built changes as required by this County provision within 90 days after beginning operation of the LJF. The Council modifies Condition 44 to require the certificate holder to provide this locational information within 90 days after beginning operation of any phase of construction.

d.

(1) The Wind Power Generation Facility requirements shall be facility-specific, but can be amended as long as the facility does not exceed the boundaries of the Gilliam County Conditional Use Permit where the original facility was constructed.

(2) An amendment to the conditional use permit shall be required if proposed facility changes would:

(a) Increase the land area taken out of agricultural production by an additional 20 acres or more;

(b) Increase the land area taken out of agricultural production sufficiently to trigger taking a Goal 3 exception;

(c) Require an expansion of the established facility boundaries;

(d) Increase the number of towers;

(e) Increase generator output by more than 25 percent relative to the generation capacity authorized by the initial permit due to the repowering or upgrading of power generation capacity.

No amendment would be required if an expansion of power-generating capacity is due to technology upgrades installed within the existing boundaries of the established Wind Power Generation Facility. Notification by the facility owner/operator to the Gilliam County Planning Department of nonsignificant changes is encouraged, but not

required. An amendment to a Site Certificate issued by EFSC will be governed by the rules for amendments established by EFSC.

GCZO Section 7.020(T)(6)(d) describes the County's procedure for amendment of a CUP. The provisions do not describe substantive land use criteria applicable to siting the proposed facility.

> *e. Within 120 days after the end of each calendar year, the facility owner/operator shall provide Gilliam County an annual report including the following information:*
>
> *(1) Energy production by month and year.*
> *(2) Nonproprietary information about wind conditions (e.g., monthly averages, high wind events, bursts).*
> *(3) A summary of changes to the facility that do not require facility requirement amendments.*
> *(4) A summary of the avian monitoring program – bird injuries, casualties, positive impacts on area wildlife and any recommendations for changes in the monitoring program.*
> *(5) Employment impacts to the community and Gilliam County during and after construction.*
> *(6) Success or failures of weed control practices.*
> *(7) Status of the decommissioning fund.*
> *(8) Summary comments – any problems with the projects, any adjustments needed, or any suggestions.*
>
> *The annual report requirement may be discontinued or required at a less frequent schedule by the County. The reporting requirement and/or reporting schedule shall be reviewed, and possibly altered, at the request of the facility owner/operator. (OPTION: For facilities under EFSC jurisdiction and for which an annual report is required, the annual report to EFSC satisfies this requirement.)*

Condition 21 requires certificate holders to report to the Council every six months during construction and annually after beginning construction. The requirement to submit a semiannual construction report applies to each phase of construction of a facility.

B. Applicable Statewide Planning Goals

For the reasons discussed above, the LJF (including the changes proposed by the amendment request) would comply with the applicable substantive criteria recommended to the Council by Gilliam County except GCZO Section 4.020(D)(14), which limits the area that a "commercial utility facility" may occupy as a conditional use in an EFU zone. Because the facility does not comply with all applicable local land use criteria, the Council must determine, under ORS 469.504(1)(b)(B), whether the facility would "otherwise comply with the applicable statewide planning goals." For a use located within an EFU zone, the "applicable statewide planning goal" is Goal 3, which is the Agricultural Lands goal. As expressed in *Oregon's Statewide Planning Goals and Guidelines*, Goal 3 is:

To preserve and maintain agricultural lands.
Agricultural lands shall be preserved and maintained for farm use, consistent with existing and future needs for agricultural products, forest and open space and with the state's agricultural land use policy expressed in ORS 215.243 and 215.700.

Consistent with Goal 3, Gilliam County has designated the EFU zone to preserve agricultural lands. Under Goal 3, non-farm uses are permitted within a farm use zone as provided under ORS 215.283. To find compliance with ORS 215.283, the Council must determine whether the proposed land uses fit within the scope of the uses permitted on EFU land described in ORS 215.283(1), (2) or (3).

In the *Final Order on the Application*, the Council found that the principal use associated with the LJF is a "commercial utility facility for the purpose of generating power for public use by sale" that is allowable under ORS 215.283(2)(g).[117] The Council found that the substation and transmission interconnection line are "utility facilities necessary for public service" that are allowable under ORS 215.283(1)(d) and that the access roads are allowable under ORS 215.283(3). The LJIIB components proposed by the amendment request involve the same land uses as the LJIIA components. The Council makes the same findings for the LJIIB components with regard to the applicable sections of ORS 215.283.

ORS 215.283(2)(g) authorizes "commercial utility facilities for the purpose of generating power for public use by sale" on land in an EFU zone. OAR Chapter 660, Division 33, contains the Land Conservation and Development Commission (LCDC) administrative rules for implementing the requirements for agricultural land as defined by Goal 3. OAR 660-033-0120 (Table 1) lists the "commercial utility facility" use as a type "R" use ("use may be approved, after required review"). Prior to the effective date of OAR 660-033-0130(37), the standards found in OAR 660-033-0130(5) and (22) applied to a wind power facility proposed to be located on non-high-value farmland and OAR 660-033-0130(5) and (17) applied to such a facility proposed to be located on high-value farmland.

OAR 660-033-0130(37) became effective on January 2, 2009.[118] At the same time, LCDC adopted amendments to OAR 660-033-0120 (Table 1) that added reference to a "wind power generation facility" as a distinct type "R" use. The amendments provided that OAR 660-033-0130(5) and (37) applied to wind power generation facilities. The effect of these amendments was to eliminate the 12-acre and 20-acre restrictions on wind power generation facilities that are contained in OAR 660-033-0130(17) and (22) and to impose, instead, new restrictions on wind power generation facilities contained in OAR 660-033-0130(37).

The applicability of OAR 660-033-0130(5) did not change. OAR 660-033-0130(5) provides that the proposed land use must not force a significant change in accepted farm practices on surrounding farmland and must not significantly increase the cost of accepted farm practices. These provisions are incorporated in GCZO Section 7.020(Q), discussed above at page 26. The Council finds that the LJF, including the LJIIB components proposed in the amendment request, would comply with OAR 660-033-0130(5).

[117] *Final Order on the Application* (September 21, 2007), p. 45. The Council found that the power collection system, meteorological towers, control system and O&M building were part of the principal use.
[118] The provision became effective upon filing (OAR 660-033-0160).

As of the date the certificate holder submitted the amendment request, Gilliam County had not incorporated the changes to OAR 660-033-0120 and OAR 660-033-0130 into the local zoning ordinance, and the acreage restrictions in GCZO Section 4.020(D)(14) therefore apply as discussed above at page 21. Because ORS 469.504(1)(b)(B) authorizes the Council to determine compliance with the statewide planning goals directly, the Department believes that the Council may conclude that the LJF (including the LJIIB components) complies with the statewide planning goals if the Council finds that LJF complies with OAR 660-033-0120 and OAR 660-033-0130, as amended January 2, 2009. Nevertheless, for completeness and in case the Department is later found to be incorrect about the applicability of the amended LCDC rules, an analysis of both the "old" (before the January 2009 amendments) and "new" rules is presented below.

The Old Rules

OAR 660-033-0130(17)

(17) A power generation facility shall not preclude more than 12 acres from use as a commercial agricultural enterprise unless an exception is taken pursuant to OAR chapter 660, division 4.

OAR 660-033-0130(22)

(22) A power generation facility shall not preclude more than 20 acres from use as a commercial agricultural enterprise unless an exception is taken pursuant to ORS 197.732 and OAR chapter 660, division 004.

Under OAR 660-033-0120, the 12-acre limitation described in OAR 660-033-0130(17) applies to components of a power generation facility located on high-value farmland. The 20-acre limitation described in OAR 660-033-0130(22) applies to agricultural land that is not high-value farmland. Definitions of "agricultural land," "high-value farmland" and "non-high-value farmland" are discussed above at page 22.

In the *Final Order on the Application*, the Council found that the LJIIA access roads are "accessory transportation improvements" that are necessary for the operation and maintenance of the facility.[119] The Council found, therefore, that the access roads are subject to the standards and requirements applicable to the principal use. The Council found that the LJIIA substation and interconnection line are within the scope of ORS 215.283(1)(d), which allows "utility facilities necessary for public service" on EFU land subject to the provisions of ORS 215.275.[120] The Council, therefore, analyzed the substation and interconnection line separately. The Council found that the substation and interconnection line would comply with the provisions of ORS 215.275. The Council makes the same findings for the LJIIB access roads, substation and interconnection line for the reasons discussed in the *Final Order on the Application.*[121]

As shown in Table 3 above at page 22, the LJIIA components (principal use and access roads) would occupy more than 20 acres of agricultural land that is not high-value

[119] *Final Order on the Application* (September 21, 2007), pp. 46-47.
[120] *Final Order on the Application* (September 21, 2007), p. 47.
[121] If OAR 660-033-0130(37) is applicable, the LJF access roads, substation and interconnection line would be part of the "wind power generation facility" as defined by that rule and would not require separate analysis.

farmland.[122] As shown in Table 4 (at page 23), the LJIIB principal use and access roads would occupy approximately 24 acres of high-value farmland and approximately 48 acres of non-high-value farmland. Because these components would occupy more than 12 acres of high-value farmland and more than 20 acres of land that is not high-value farmland, the Council finds that the LJF does not comply with OAR 660-033-0130(17) and (22). Based on this finding, the LJF does not comply with the rules implementing Goal 3.

Goal 3 Exception

If the old rules apply, to find compliance with the Land Use Standard under ORS 469.504(1)(b)(B), the Council must determine whether an exception to Goal 3 is justified under ORS 469.504(2).[123] The Council finds that a Goal 3 exception is justified for the reasons discussed below.

ORS 469.504(2)(c) sets out the standards that must be met for the Council to take a "reasons" exception to a statewide planning goal:

> *(A) Reasons justify why the state policy embodied in the applicable goal should not apply;*
>
> *(B) The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the council applicable to the siting of the proposed facility; and*
>
> *(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.*

Reasons Supporting an Exception

The state policy embodied in Goal 3 is the preservation and maintenance of agricultural land for farm use. The energy facility would have limited impact on farm use. In the *Final Order on the Application*, the Council found that the LJIIA components (principal use and access roads) would occupy less than one percent of the EFU land adjacent to the facility (the area within the lease boundary for LJIIA).[124] The Council's finding was based on the maximum area that these components were expected to occupy (approximately 63 acres), but in the final design configuration, the LJIIA components are now expected to occupy approximately 39 acres, as shown in Table 6 herein. As shown in Table 4, the LJIIB principal use and access roads would occupy up to 69 acres of the LJIIB area (less than one percent).[125] The combined area occupied by the LJIIA and LJIIB components would remain less than one percent of the adjacent area within the site boundary, if Amendment #1 were approved. The land that the LJIIA and LJIIB structures would occupy would not be in a single, contiguous area within which no farming activities could occur. Rather, the spacing of turbines and turbine strings would allow farm use to continue on most of the land currently used for

[122] Table 3 shows the maximum area occupied by the principal use and access roads as anticipated in the site certificate application (approximately 63 acres). Based on the final design configuration, the LJIIA facility components are now expected to occupy approximately 39 acres, as shown in Table 6.
[123] If the new rules apply and the LJF were found not to comply with OAR 660-033-0130(37), discussed below at page 38, then the Council must make the same determination regarding a Goal 3 exception.
[124] *Final Order on the Application* (September 21, 2007), p. 49.
[125] The LJIIB area contains approximately 7,962 acres. See Table 7 herein.

farming. In the *Final Order on the Application*, the Council found that only 13 acres would be occupied by the LJIIA turbine towers and O&M buildings and that approximately 79 percent of the occupied LJIIA land would be occupied by new access roads or improvements to existing roads. More than 95 percent of the LJIIB land occupied by the energy facility would be occupied by access roads.

Condition 41 requires the certificate holder to locate access roads to minimize disturbance of farming practices. The condition also requires the certificate holder to place turbines and transmission interconnection lines along the margins of cultivated areas to reduce the potential for conflict with farm operations wherever feasible. The new access roads and the improved existing roads would be available to the landowner for use in farm operations.

Further reasons that justify the use of agricultural land for the wind energy facility include achieving other state policy objectives and making efficient use of existing transmission infrastructure.

In the *Final Order on the Application*, the Council found that approval of the LJF would further the state policy embodied in Goal 13 (Energy Conservation).[126] This remains true with the addition of the LJIIB components. Expansion of the site boundary as proposed in this amendment request, would allow the certificate holder to restore the overall generating capacity previously approved for the facility. The Guidelines for implementing Goal 13 direct that land use planning utilize renewable energy sources, including wind, "whenever possible." Approval of the amendment would "optimize" the use of the wind resource.[127] The certificate holder plans to use 2.1-MW Suzlon turbines in the LJIIA area. The turbine manufacturer's specifications require that these turbines be spaced a minimum of three rotor diameters apart from each other. This spacing requirement, combined with other setback considerations, reduces the number of turbines that can be placed in the LJIIA area to 43, as further explained by the certificate holder:[128]

> The LJII turbines must not only have sufficient space between each other, but must also be sufficiently distant from the wake of two existing projects (Rattlesnake Road Wind Farm and Leaning Juniper I) that neighbor the site. This distance is greatest in the direction of prevailing winds. Turbine wake effects, combined with County setbacks, environmental constraints, topography, and constructability limitations, reduce the number of turbines that can be optimally placed in the LJIIA area to approximately 43 turbines. The 43 Suzlon turbines are located to generate sufficient energy in order to meet LJWP economic requirements. If all facility turbines were placed in the LJIIA area, the cost per kilowatt-hour would increase significantly, and the project would not be economically viable. Placing facilities in the LJIIB area optimizes the wind resource by producing more energy production for the same amount of nameplate capacity.

In the *Final Order*, the Council found that the proposed location of the LJF provides efficient access to BPA's regional transmission system.[129] This remains true with the addition of the LJIIB components. A 6.1-mile transmission line would be used to interconnect the facility with the regional power grid. The transmission line has been analyzed as a utility facility necessary for public service and is subject to the provisions of ORS 215.275, which

[126] *Final Order on the Application* (September 21, 2007), p. 49.
[127] Request for Amendment #1, Section 1, p. 1.
[128] Response to RAI (table), pp. 15-16 (response to Request #9).
[129] *Final Order on the Application* (September 21, 2007), p. 49.

promote efficient transmission access by requiring conditions "to mitigate and minimize the impacts of the proposed facility, if any, on surrounding lands devoted to farm use."

Environmental, Economic, Social and Energy Consequences

The Council's standards address the environmental consequences of the proposed facility. In our discussion of each of the standards, we identify the potential adverse impacts of the LJF, including the LJIIB components, and explain how those impacts would be mitigated. We discuss impacts to soils at page 45; to protected areas at page 46; to scenic resources at page 49; to threatened and endangered species at page 61; to wildlife habitat at page 63; to ambient noise levels at page 79; to wetlands and other state jurisdictional waters at page 86; and to groundwater at page 87. The facility would have no emissions that would adversely affect air or water quality. Upon retirement of the LJF, the structures would be removed and the land would be restored to a useful, non-hazardous condition (see discussion of the Council's Retirement and Financial Assurance Standard at page 12).

In the *Final Order on the Application*, the Council found that the LJF would have beneficial economic consequences and no significant adverse economic consequences.[130] The Council's findings regarding economic consequences apply as well to the LJIIB components, and those findings are incorporated herein by this reference.

The Council's standards address the potential adverse social consequences of the LJF. In our discussion of the standards herein, we explain how any adverse social consequences of the facility would be mitigated. The proposed facility, including the LJIIB components, would not cause any significant adverse impact on the ability of communities in the local area to provide services such as housing, health care, schools, police and fire protection, water and sewer, solid waste management, transportation and traffic safety (see discussion of the Council's Public Services Standard at page 77). The facility would avoid adverse impact to historic, cultural and archaeological resources (see discussion at page 76). The proposed facility would have no adverse impact on recreational opportunities in the local area (see discussion at page 53). We address public safety issues related to the proposed facility at page 55 (Public Health and Safety Standards for Wind Energy Facilities), page 59 (Siting Standards for Transmission Lines), page 75 (Structural Standard) and page 89 (Public Health and Safety). During construction and operation of the facility, the certificate holder would minimize the generation of solid waste and wastewater and would properly dispose or recycle waste materials (see discussion at page 78).

The proposed amendment would reduce the authorized average electric generating capacity of the facility from 93 MW to 92.1 MW. The energy consequences of the LJF would not otherwise change if Amendment #1 were approved. The Council's previous findings regarding energy consequences apply as well to the facility with the LJIIB components.

Compatibility with Other Adjacent Uses

In the *Final Order on the Application*, the Council found that the land uses adjacent to the LJF include farming and the operation of the region's largest landfill.[131] The Council found that the LJF would have no adverse impact on operation of the landfill and that the LJF would be compatible with farm uses on the adjacent lands. These findings apply as well to the

[130] *Final Order on the Application* (September 21, 2007), p. 50.
[131] *Final Order on the Application* (September 21, 2007), p. 51.

facility with the LJIIB components. Farm uses adjacent to the LJIIB components are cultivation of wheat and barley and cattle grazing.[132] As discussed above at page 26 in reference to GCZO 7.020(Q), the LJF, including the LJIIB components proposed in the amendment request, would be compatible with farm uses on adjacent land.

The New Rules

OAR 660-033-0130(37) defines a "wind power generating facility" and provides criteria for the approval of a wind power generating facility sited on farmland. The Council finds that the LJF components fit entirely within the definition of "wind power generating facility" in OAR 660-033-0130(37). The Council finds that the LJF meets the approval criteria for a wind power generating facility, for the reasons discussed below.

OAR 660-033-0130(37)

(37) For purposes of this rule a wind power generation facility includes, but is not limited to, the following system components: all wind turbine towers and concrete pads, permanent meteorological towers and wind measurement devices, electrical cable collection systems connecting wind turbine towers with the relevant power substation, new or expanded private roads (whether temporary or permanent) constructed to serve the wind power generation facility, office and operation and maintenance buildings, temporary lay-down areas and all other necessary appurtenances. A proposal for a wind power generation facility shall be subject to the following provisions:

(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 OAR 660-033-0130(37)(a)(B).

(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.

[132] Response to RAI (table), p. 14 (response to Request #8).

(C) Costs associated with any of the factors listed in OAR 660-033-0130(37)(a)(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.

(D) The owner of a wind power generation facility approved under OAR 660-033-0130(37)(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.

(E) The criteria of OAR 660-033-0130(37)(b) are satisfied.

(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; and

(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; and

(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

(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.

(c) For nonarable lands, meaning lands that are not suitable for cultivation, the governing body or its designate must find that the requirements of OAR 660-033-0130(37)(b)(D) are satisfied.

(d) In the event that a wind power generation facility is proposed on a combination of arable and nonarable lands as described in OAR 660-033-0130(37)(b) and (c) the approval criteria of OAR 660-033-0130(37)(b) shall apply to the entire project.

OAR 660-033-0130(37)(a) provides criteria for locating a wind power generating facility on high-value farmland soils. The rule references ORS 195.300(10) for the definition of "high-value farmland soils." ORS 195.300(10), in turn, references ORS 215.710, which defines "high value farmland." The definition of "high value farmland" has been discussed above at page 22. In the *Final Order on the Application*, the Council found that the LJIIA components would not occupy high-value farmland.[133] As shown in Table 4 on page 23, the LJIIB components would occupy a maximum of 24.15 acres of high-value farmland.[134]

Reasonable Alternatives

OAR 660-033-0130(37)(a)(A) requires the certificate holder to consider "reasonable alternatives" to locating the facility, or components of the facility, on high-value farmland. The certificate holder must "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." In the case of access roads and turbine strings, the certificate holder must show that these components must be placed on high-value farmland soils "to achieve a reasonably direct route." To demonstrate the necessity of using high-value farmland for the facility to "function properly" or for a road or turbine string to "achieve a reasonably direct route," the certificate holder must consider the factors listed in subsections (i) through (iii).

The rule first requires the certificate holder to determine whether "reasonable alternatives" exist on soils that are not "high-value farmland soils." The certificate holder must then analyze whether the facility could "function properly" and whether turbine string and roads could "achieve a reasonably direct route" in an alternative location. The rule does not, however, contain specific factors to be considered to determine whether a given alternative is "reasonable." The certificate holder addressed these questions in the Request for Amendment #1 and concluded that "siting the proposed LJIIB components partially on high-value farmland soils is necessary for the facility to function properly" and for the road system and turbine strings to achieve a reasonably direct route.[135]

The certificate holder proposes to add the LJIIB area to the LJF because of turbine spacing requirements and potential wake interference from neighboring wind energy facilities

[133] *Final Order on the Application* (September 21, 2007), p. 29.
[134] This total includes the principal use and the access roads. Although the 230-kV transmission line and the LJIIB substation represent the interconnection option with the greatest area of land use, this option would not occupy any high-value farmland.
[135] Request for Amendment #1, Section 4, pp. 22-23.

that make it no longer possible for the facility to achieve its previously-approved generating capacity if it were confined to the LJIIA area. The certificate holder plans to use 2.1-MW Suzlon turbines in the LJIIA area. The certificate holder has determined that "turbine wake effects, combined with County setbacks, environmental constraints, topography, and constructability limitations, reduce the number of turbines that can be optimally placed in the LJIIA area to approximately 43 turbines."[136] Confining the facility to the LJIIA area would, therefore, reduce the peak generating capacity of the facility to 90.3 MW from the previously-approved capacity of up to 279 MW. For this reason, the Council finds that building the facility within the LJIIA area is not a reasonable alternative.

To carry out the state land use policy embodied in Goal 13 (Energy Conservation), the Council finds that a "reasonable alternative" under OAR 660-033-0130(37)(a)(A) must enable the wind facility to make efficient use of a comparable wind resource, compared to the proposed location that affects high-value farmland soils. The Planning Guidelines for Goal 13, provide that "priority consideration in land use planning should be given to methods of analysis and implementation measures that will assure achievement of maximum efficiency in energy utilization" and "the allocation of land and uses permitted on the land should seek to minimize the depletion of non-renewable sources of energy." The Guidelines direct that land conservation and development actions should "utilize renewable energy sources," including wind, "whenever possible." The Council finds an alternative location or configuration of a proposed wind power generation facility on land that does not contain high-value farmland soils is a "reasonable" alternative under OAR 660-033-0130(37)(a)(A) only if the alternative location has a substantially similar wind resource compared to the configuration that would affect high value farmland soils.

The Council finds an alternative location or configuration of a proposed wind power generation facility on land that does not contain high-value farmland soils is not a "reasonable" alternative under OAR 660-033-0130(37)(a)(A) if the location or configuration would significantly increase the area within the site boundary, significantly increase the area permanently occupied by the facility's components or significantly increase the length of aboveground transmission lines that are necessary to connect the wind facility to the regional power grid.

A large area is necessary to enable micrositing of the final configuration of the LJIIB components. The LJIIB site boundary would contain approximately 7,962 acres, although the proposed facility would have a permanent footprint of approximately 72 acres (including approximately 24 acres of high-value farmland soils). Micrositing involves a wide range of considerations, among which are the following:

- Efficient utilization of the wind resource.
- Ensuring that each wind turbine is located a sufficient distance from other wind turbines to make efficient use of the available wind resource while minimizing "wake" effects.
- Ensuring compatibility with farm operations.
- Avoiding impact to valuable wildlife habitat.
- Ensuring adequate wind turbine safety setbacks from residences and public roads.

[136] Response to RAI (table), pp. 15-16 (response to Request #9).

- Locating turbines a sufficient distance from residences to ensure compliance with noise control regulations.
- Reducing the length of the facility's aboveground transmission lines.
- Reducing the area occupied by the facility's access roads.

The Council finds that an alternative location is "reasonable" only if it is available. Because a large area is needed for micrositing, an alternative location is available only where the developer can lease enough contiguous parcels of property to ensure a sufficient area. The commitment of a sufficient number of neighboring property owners is needed before the developer can determine if enough land is available in an alternative location for the project as a whole to be viable, yet without a definite prospect of lease income, landowners may be unwilling to make that commitment. Some landowners may be negotiating simultaneously with more than one wind developer.

In addition, whether an alternative location is "reasonable" may depend on the location of a previous construction phase. In this case, the proposed LJIIB components are an expansion of a wind power facility that received land use approval before the new rules were adopted by LCDC. The proposed LJIIB components would expand the boundaries of that facility. It would be unreasonable to require a certificate holder to locate a facility expansion at a distant location remote from facility components that have already been approved for construction. The Council finds that, for an amendment that enlarges the site of an existing facility, a "reasonable alternative" must be either contiguous with, or sufficiently close to, the previously-approved components to ensure that operation of the entire facility is practicable.

Figures 12 and 13 in the amendment request show a mosaic of soil types in which high-value farmland soils are interspersed with non-high-value farmland. [137] Based on these figures, the certificate holder observes that "there are few areas in which high-value farmland soils will not be affected to some extent and still meet the project needs."[138] The figures also demonstrate that there are no large, contiguous areas of non-high-value farmland that are of sufficient size to locate the proposed LJIIB components close to the previously-approved LJIIA components and close to the BPA transmission facilities.[139] Because the areas of non-high-value farmland are interspersed with high-value farmland soils, proposed turbine strings (including access roads and collector lines) cannot be located to "achieve a reasonably direct route" without affecting high-value-farmland soils. The Council finds that the certificate holder has considered reasonable alternatives and has shown that siting the wind power generation facility or component thereof on high-value farmland soils is necessary as required under OAR 660-033-0130(37)(a)(A).

Environmental, Economic, Social and Energy Consequences

Under OAR 660-033-0130(37)(a)(B), the certificate holder must show that "the long term environmental, economic, social and energy consequences" of the facility or its components, taking mitigation into account, "are not significantly more adverse than would typically result from the same proposal being located on other agricultural lands that do not

[137] Request for Amendment #1, Section 4, p. 22, and Attachment 1, Figures 12 and 13.
[138] Request for Amendment #1, Section 4, p. 22.
[139] Much of the area to the north and east of the LJIIA area is already occupied by existing or approved wind energy facilities, including Leaning Juniper I, Pebble Springs, Rattlesnake Road, Wheatfield and Shepherds Flat Wind Farm.

include high-value farmland soils." The test is similar to that required under ORS 459.504(2)(c)(B) when the Council determines whether to grant a "reasons" exception to a statewide planning goal: "The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the council applicable to the siting of the proposed facility." The environmental, economic, social and energy consequences of the LJF are discussed at page 37 as part of the Goal 3 exception analysis. For the reasons addressed there, the Council finds that the "consequences" of siting the facility on high-value farmland are not significantly more adverse than would typically result from locating the components on non-high-value farmland. Site certificate conditions contain mitigation measures that would minimize any adverse impacts from siting the LJF on high-value farmland. Although the facility components might affect some agricultural routines of the landowner, the wind turbines will provide a significant source of additional, stable income to the landowner.

Rigid avoidance of creating any impact on any high-value farmland in Gilliam County could have the opposite effect; that is, siting wind energy facilities *only* on non-high-value agricultural lands may have "long term environmental, economic, social and energy consequences" that are significantly *more adverse* than would result from allowing some components of a wind energy facility to occupy high-value-farmland soils. To avoid all areas of high-value farmland soil in locations characterized by pockets of high-value soils interspersed with non-high-value soils, the footprint of a wind energy facility would have to stretch over a larger micrositing area to achieve the same overall generating capacity, resulting in greater potential environmental and farm use impact and reduced efficiency.

Costs

OAR 660-033-0130(37)(a)(C) provides that costs may be considered in the analysis but "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." Considerations other than cost have been discussed above.

Restoration

OAR 660-033-0130(37)(a)(D) requires the owner of a wind facility to restore agricultural land damaged by the wind power facility. Condition 74 requires the certificate holder to restore all areas disturbed by construction, including farmland, according to the requirements of the *Revegetation Plan*. The Council finds that the requirements of Condition 74 ensure compliance with OAR 660-033-0130(37)(a)(D).

Additional Criteria

OAR 660-033-0130(37)(a)(E) requires the certificate holder to demonstrate that the criteria of OAR 660-033-0130(37)(b) are satisfied when determining whether a facility may be sited on high-value farmland soils.

Arable and Nonarable Lands

Subsections (b), (c) and (d) of OAR 660-033-0130(37) provide additional criteria for wind power generation facilities located on "arable" or "nonarable" land. Subsection (b) defines "arable land" as "lands that are cultivated or suitable for cultivation, including high-value farmland soils," and provides criteria for locating a facility on arable land. Subsection (c) defines "nonarable land" as land "not suitable for cultivation" and identifies the criteria

applicable on nonarable land. Subsection (d) provides that when a proposed wind power generation facility is located on a combination of arable and nonarable lands, then the criteria in subsection (b) apply to the entire facility. The LJF, including the proposed LJIIB components, would be located on combination of arable and nonarable lands, as shown in Table 7 herein. Accordingly, the criteria in subsection (b) apply to the entire facility.

Impacts on Agricultural Operations

OAR 660-033-0130(37)(b)(A) provides that the proposed wind power facility must not "create unnecessary negative impacts on agricultural operations conducted on the subject property." This requirement is substantially equivalent to the approval standards in the Gilliam County zoning ordinance, GCZO Section 7.020(Q), discussed above at page 26. For the reasons discussed there, the Council finds that the LJF, including the proposed LJIIB components, will not result in unnecessary negative impacts on agricultural operations.

Soil Erosion and Compaction

OAR 660-033-0130(37)(b)(B) provides that the proposed wind power facility must not result in unnecessary soil erosion or loss that could limit agricultural productivity. OAR 660-033-0130(37)(b)(C) provides that facility construction or maintenance activities must not result in unnecessary soil compaction that reduces the productivity of soil for crop production. Potential adverse impacts to soils and measures to avoid or control soil erosion and compaction are addressed by the Council's Soil Protection Standard, discussed below at page 45. For the reasons discussed there, the Council finds that construction and operation of the LJF, including the proposed LJIIB components, would not result in unnecessary soil erosion, soil loss or soil compaction that reduces the productivity of soil for crop production.

Site certificate conditions address soil erosion and compaction. Condition 70 requires that construction be conducted in compliance with an Erosion and Sediment Control Plan. Construction truck traffic would be limited to existing and improved road surfaces to avoid soil compaction (Condition 71). The certificate holder would comply with the requirements of the *Revegetation Plan* incorporated under Condition 74, which includes restoration of cropland in consultation with the landowner or farm operator.

Weed Control

OAR 660-033-0130(37)(b)(D) provides that construction or maintenance activities must not result in the "unabated introduction or spread of noxious weeds and other undesirable weeds species." Condition 74 addresses construction impacts to agricultural land and requires the certificate holder to implement the *Revegetation Plan*, which includes weed control measures. Condition 82 requires the certificate holder to develop a weed control plan in consultation with the Gilliam County Weed Control Board and to implement the plan during construction and operation of the facility. The Council finds that construction and operation of the LJF, including the proposed LJIIB components, would not result in unabated introduction or spread of weeds on farmland.

Conclusions of Law

Based on the findings of fact, reasoning, proposed conditions and conclusions discussed above, the Council finds that the LJF, including the proposed LJIIB components, would comply with all applicable substantive criteria from Gilliam County except GCZO

Section 4.020(D)(14). Accordingly, the Council must proceed with the land use analysis under ORS 469.504(1)(b)(B).

If the new LCDC rules apply, the Council finds that the proposed expansion of the LJF complies with OAR 660-033-0130(37) and otherwise complies with all applicable statewide planning goals.[140] If the old LCDC rules apply, the Council finds that the proposed expansion of the LJF does not comply with OAR 660-033-0130(17) and (22) and therefore does not comply with the applicable statewide planning goal (Goal 3). The Council finds that an exception to Goal 3 is justified under ORS 469.504(2)(c).

Based on these findings and the site certificate conditions described herein, the Council concludes that the LJF would comply with the Land Use Standard if Amendment #1 were approved.

(b) Soil Protection

OAR 345-022-0022

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.

Findings of Fact

In the *Final Order on the Application*, the Council found that the design, construction and operation of the LJF would not likely cause a significant adverse impact to soils.[141] Amendment #1 would enlarge the site boundary of the LJF. The Council must decide whether the design, construction and operation of the proposed LJIIB components would have a significant adverse impact to soils.

Adverse impacts to soils can affect crop production on adjacent agricultural lands, native vegetation, fish and wildlife habitat and water quality. Construction and operation of the LJIIB components could have soil impacts such as erosion, compaction and chemical spills. Because a wind facility does not have a cooling tower or liquid effluent, there is no potential for salt deposition or land application of liquid effluent. Small amounts of lubricant and herbicide for weed control would be used, but due to the quantities used, there is no potential for significant spills.

In the Request for Amendment #1, the certificate holder discussed the potential soil impacts and provided information about the soil types in the LJIIB area.[142] In the *Final Order on the Application*, the Council made findings about the potential soil impacts resulting from construction and operation of the LJF and adopted Conditions 60, 70, 71, 74, 75 and 77 to mitigate potential impacts. The construction and operation of the LJIIB components would involve the same types of potential soil impacts, and the findings in the *Final Order* apply as well to the LJIIB components. The Council finds that the design, construction and operation

[140] If the new rules apply and the LJF were found not to comply with OAR 660-033-0130(37), then an exception to Goal 3 would be justified for the reasons discussed herein.
[141] *Final Order on the Application* (September 21, 2007), p. 53.
[142] Request for Amendment #1, Section 4, pp. 15-16, and Attachment 4.

of the LJF including the proposed LJIIB components would not likely result in significant adverse impact to soils, taking into account the mitigation required by the site certificate conditions.

Conclusions of Law

For the reasons discussed above, the Council concludes that the LJF would comply with the Council's Soil Protection Standard if Amendment #1 were approved.

(c) Protected Areas

OAR 345-022-0040

(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:

(a) National parks, including but not limited to Crater Lake National Park and Fort Clatsop National Memorial;

(b) National monuments, including but not limited to John Day Fossil Bed National Monument, Newberry National Volcanic Monument and Oregon Caves National Monument;

(c) Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C. 1131 et seq. and areas recommended for designation as wilderness areas pursuant to 43 U.S.C. 1782;

(d) National and state wildlife refuges, including but not limited to Ankeny, Bandon Marsh, Baskett Slough, Bear Valley, Cape Meares, Cold Springs, Deer Flat, Hart Mountain, Julia Butler Hansen, Klamath Forest, Lewis and Clark, Lower Klamath, Malheur, McKay Creek, Oregon Islands, Sheldon, Three Arch Rocks, Umatilla, Upper Klamath, and William L. Finley;

(e) National coordination areas, including but not limited to Government Island, Ochoco and Summer Lake;

(f) National and state fish hatcheries, including but not limited to Eagle Creek and Warm Springs;

(g) National recreation and scenic areas, including but not limited to Oregon Dunes National Recreation Area, Hell's Canyon National Recreation Area, and the Oregon Cascades Recreation Area, and Columbia River Gorge National Scenic Area;

(h) State parks and waysides as listed by the Oregon Department of Parks and Recreation and the Willamette River Greenway;

(i) State natural heritage areas listed in the Oregon Register of Natural Heritage Areas pursuant to ORS 273.581;

(j) State estuarine sanctuaries, including but not limited to South Slough Estuarine Sanctuary, OAR Chapter 142;

(k) Scenic waterways designated pursuant to ORS 390.826, wild or scenic rivers designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and rivers listed as potentials for designation;

(L) Experimental areas established by the Rangeland Resources Program, College of Agriculture, Oregon State University: the Prineville site, the Burns (Squaw Butte) site, the Starkey site and the Union site;

(m) Agricultural experimental stations established by the College of Agriculture, Oregon State University, including but not limited to:

Coastal Oregon Marine Experiment Station, Astoria

Mid-Columbia Agriculture Research and Extension Center, Hood River

Agriculture Research and Extension Center, Hermiston

Columbia Basin Agriculture Research Center, Pendleton

Columbia Basin Agriculture Research Center, Moro

North Willamette Research and Extension Center, Aurora

East Oregon Agriculture Research Center, Union

Malheur Experiment Station, Ontario

Eastern Oregon Agriculture Research Center, Burns

Eastern Oregon Agriculture Research Center, Squaw Butte

Central Oregon Experiment Station, Madras

Central Oregon Experiment Station, Powell Butte

Central Oregon Experiment Station, Redmond

Central Station, Corvallis

Coastal Oregon Marine Experiment Station, Newport

Southern Oregon Experiment Station, Medford

Klamath Experiment Station, Klamath Falls;

(n) Research forests established by the College of Forestry, Oregon State University, including but not limited to McDonald Forest, Paul M. Dunn Forest, the Blodgett Tract in Columbia County, the Spaulding Tract in the Mary's Peak area and the Marchel Tract;

(o) Bureau of Land Management areas of critical environmental concern, outstanding natural areas and research natural areas;

(p) State wildlife areas and management areas identified in OAR chapter 635, Division 8.

* * *

Findings of Fact

In the *Final Order on the Application*, the Council found that the design, construction and operation of the LJF would not likely result in significant adverse impact to protected areas.[143] The Council identified the John Day River Wildlife Refuge, the John Day Federal Wild and Scenic River, the John Day State Scenic Waterway and the Horn Butte Area of Critical Environmental Concern (ACEC) as the protected areas within the analysis area for the LJF. Amendment #1 would change the site boundary of the LJF and authorize the construction of wind turbines, transmission lines and other visible structures in the LJIIB area. The Council must decide whether the design, construction and operation of the proposed LJIIB components would have a significant adverse impact to protected areas.

The certificate holder conducted an analysis within the expanded analysis area extending 20 miles from the proposed amended site boundary for LJIIA and LJIIB. No protected areas lie within the proposed LJIIB area, and there are no protected areas within the expanded analysis area other than the four areas identified by the Council in the *Final Order*. The amendment request includes Zone of Visual Influence (ZVI) maps for the analysis area.[144] Figure 14 (based on the maximum turbine layout) and Figure 15 (based on the minimum turbine layout) show the areas from which LJIIA and LJIIB wind turbines could be visible. The maps show the identified protected areas within the analysis area.

The nearest LJIIA or LJIIB turbines would be approximately six miles away from the segments of the John Day River that have been designated as Federal Wild and Scenic River and State Scenic Waterway. The ZVI maps show that the LJF turbines would not be visible from viewpoints on the river. Portions of the John Day Wildlife Refuge are approximately 6 miles from the nearest LJIIA or LJIIB turbine. The refuge is protected for wildlife habitat and is not managed for scenic views. In the *Final Order on the Application*, the Council found that some LJF turbines might be visible from a small and relatively inaccessible area within the wildlife refuge approximately ¼-mile from the river bank.[145]

The ZVI maps show that LJIIA and LJIIB turbines would be visible from the Horn Butte ACEC at a distance of at least three miles. This protected area is managed for wildlife and wildlife habitat and not for scenic quality. In addition, the certificate holder noted that views from the majority of the Horn Butte ACEC currently include wind turbines, various transmission lines, highways, roads and other structures.[146]

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[143] *Final Order on the Application* (September 21, 2007), p. 57.
[144] Request for Amendment #1, Attachment 1, Figures 14 and 15. ZVI analysis is a modeling analysis of line-of-sight visibility. The model does not take into account screening from vegetation or structures that might be present between a viewpoint and the site or factors such as weather conditions, haze or background landscape that might obscure the visual effect. The analysis considers a turbine or other structure to be "visible" if any part of a turbine is within a line-of-sight, based on the maximum blade tip height.
[145] *Final Order on the Application* (September 21, 2007), p. 57.
[146] Request for Amendment #1, Section 4, p. 29.

In the *Final Order on the Application*, the Council made findings regarding the potential noise generated by construction and operation of the LJF.[147] These findings apply as well to the noise that would be generated by the construction and operation of the LJIIB components. Analysis of the potential noise generated by operation of the LJIIB components is discussed herein at page 79.

In the *Final Order on the Application*, the Council made findings regarding the potential impacts of traffic, water use and wastewater disposal.[148] Approval of the amendment request would not significantly increase traffic volume on affected roads during construction or operation of the facility.[149] The greatest use of water occurs during construction. The need for water is directly related to the number of turbine foundations being built (water used for mixing concrete) and to the duration of construction activities (water used for dust suppression). The proposed expansion of the LJF would reduce the maximum number of wind turbines at the facility from 133 to 127, reducing the number of turbine foundations to be built and possibly reducing the duration of construction activities compared to what would have occurred during construction of the facility without the LJIIB components.[150]

The Council finds the previous findings in the *Final Order on the Application* regarding potential impacts on protected areas apply as well to the LJIIB components. The Council finds that no part of the LJF, including the proposed LJIIB components, is located in any protected area listed in OAR 345-022-0040 and that the design, construction and operation of the LJF are not likely to result in significant adverse impact to any protected area.

Conclusions of Law

For the reasons discussed above, the Council concludes that the LJF would comply with the Council's Protected Areas Standard if Amendment #1 were approved.

(d) Scenic Resources

OAR 345-022-0080

(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.

* * *

Findings of Fact

In the *Final Order on the Application*, the Council found that the design, construction and operation of the LJF were not likely to result in a significant adverse impact to scenic and aesthetic values identified as significant or important in applicable federal land management plans or in local land use plans in the analysis area.[151] In making these findings, the Council

[147] *Final Order on the Application* (September 21, 2007), p. 55.
[148] *Final Order on the Application* (September 21, 2007), pp. 55-56.
[149] Request for Amendment #1, Section 4, p. 48.
[150] Water use during construction is addressed in the Request for Amendment #1 at pages 46-47, and in Response to RAI, Summary of Modifications, p. 2, and Attachment 4.
[151] *Final Order on the Application* (September 21, 2007), p. 64.

addressed an analysis area that included the area within the LJIIA site boundary and within 30 miles from the site boundary. Amendment #1 would change the site boundary of the LJF and authorize the construction of wind turbines and other visible structures in the LJIIB area. The Council must decide whether the design, construction and operation of the proposed LJIIB components would have a significant adverse impact to significant or important scenic resources.

In the amendment request, the certificate holder analyzed the area within the site boundary and 10 miles from the site boundary.[152] The Council finds that the analysis area for the purposes of this amendment request is the area within the site boundary and 10 miles from the site boundary, in conformance with the current "study area" definition in OAR 345-001-0010 and the requirement stated in OAR 345-027-0070(10) that the Council apply administrative rules in effect on the date the Council makes its decision.[153]

The Council has previously found that the significant visual features of the LJIIA components included up to 133 turbines, 22 miles of new access roads, one or two O&M buildings, a substation, four meteorological towers, up to 9.9 miles of aboveground collector lines and a 400-foot 230-kV transmission interconnection line.[154] The proposed amendment would reduce the maximum number of turbines to 127, but would reconfigure the location of the turbines such that up to 84 turbines would be located in the LJIIB area. The certificate holder plans to build 43 turbines in the LJIIA area (compared to 133 turbines previously authorized in the same area). The proposed amendment would authorize construction of up to 20.9 miles of new access roads in the LJIIB area. The proposed amendment would not increase the number of O&M buildings but would authorize the option of building an additional substation in the LJIIB area. The proposed amendment would increase the maximum length of aboveground collector line from 9.9 miles to 16.6 miles and would authorize the construction of an aboveground 34.5-kV or 230-kV interconnection line approximately 6.1 miles long running between the LJIIB area and the LJIIA substation.

The certificate holder identified federally-managed and locally-managed areas within the analysis area from which one or more LJF wind turbines would be visible.[155] These management areas are listed in Table 5. The amendment request includes ZVI maps that illustrate the visibility of LJF wind turbines and the LJIIB interconnection line (assuming a 230-kV line is built), based on the ZVI analysis.[156] Figure 16 depicts the visibility of the maximum turbine layout, and Figure 17 depicts visibility of the minimum turbine layout. Figure 18 depicts the visibility of LJIIB transmission line structures if the preferred transmission line route is used, and Figure 19 depicts the visibility of LJIIB transmission line structures if the alternative transmission line route is used.

[152] Request for Amendment #1, Section 4, pp. 35-41.
[153] Under OAR 345-001-0010(2), the analysis area is the "study area" unless modified by the Project Order. At the time the First Amended Project Order was issued (November 21, 2006), the "study area" for scenic resources as defined under OAR 345-001-0010 included the area within 30 miles from the site boundary. The project order did not modify this definition in describing the analysis area for the LJF application. There has been no subsequent amendment of the project order.
[154] *Final Order on the Application* (September 21, 2007), p. 58.
[155] Request for Amendment #1, Section 4, p. 38.
[156] Request for Amendment #1, Attachment 1, Figures 16-19.

Table 5: Land Management Areas

Area	Management	Location	Distance to nearest LJF turbine (miles)
John Day River	Federal/State	Oregon	6
Oregon National Historic Trail	Federal	Oregon	< 0.1
Gilliam County	County	Oregon	0
Sherman County	County	Oregon	6
Morrow County	County	Oregon	6
Klickitat County	County	Washington	2
City of Arlington	City	Oregon	1

John Day River

In the *Final Order on the Application*, the Council made findings regarding the identified scenic resources associated with the federal and state managed segments of the John Day River.[157] The Council found that, although portions of the facility might be visible from vantage points at higher elevation along the canyon walls of the John Day, the nearest wind turbines would be at least six miles away and the presence of wind turbines six miles or more away from the river would not interfere with views of the protected scenic values. Approval of Amendment #1 would not change the facts or circumstances upon which the Council relied in making these findings.

Oregon National Historic Trail

Under the National Trails System Act, "high potential historic sites" are historic sites that provide an opportunity to interpret the historic significance of the trail. Criteria for selection of a high potential historic site include "historic significance, presence of visible historic remnants, scenic quality, and relative freedom from intrusion." The Act defines "high potential route segments" as segments of a trail that "afford high quality recreation experience in a portion of the route having greater than average scenic values or affording an opportunity to vicariously share the experience of the original users of a historic route."[158] The certificate holder identified two "high potential historic sites" in the analysis area that are associated with the Oregon National Historic Trail (ONHT): Fourmile Canyon and the John Day River Crossing (McDonald Ford).[159] Based on the ZVI analysis, LJF turbines and LJIIB transmission line structures would not be visible from the John Day River Crossing historic site.

The Fourmile Canyon historic site is located approximately three miles from the nearest proposed LJIIB turbine location (the LJIIA turbine locations are farther away). In the *Final Order on the Application*, the Council found that the Fourmile Canyon site is protected primarily for the historic significance of deep wagon ruts visible where the trail crossed Fourmile Canyon.[160] An interpretive wayside is located within the canyon itself where the

[157] *Final Order on the Application* (September 21, 2007), pp. 60-61.
[158] 16 USC 1251.
[159] Request for Amendment #1, Section 4, p. 39.
[160] *Final Order on the Application* (September 21, 2007), p. 61.

topography would likely block the line-of-sight to LJF turbines. The Council made additional findings about the Oregon National Historic Trail and the Fourmile Canyon historic site in the *Final Order on the Application for the Shepherds Flat Wind Farm*, and those findings are incorporated herein by this reference.[161] The management plan prepared for the site by the BLM Prineville District describes "visible, well defined ruts representing a segment of the Trail where immigrants were 'passing through' on their way to the next campsite."[162] The BLM has erected an ONHT interpretive wayside on Fourmile Canyon Road. Visitors to the BLM interpretive wayside look in a southwest direction to observe the visible ruts of the ONHT on the hillside approximately 100 meters away. The Council found that the important scenic value associated with the ONHT at the Fourmile Canyon site is the view of the visible remnants of the Oregon Trail and the immediate surroundings on public land.[163] Based on the ZVI analysis in the amendment request, it is unlikely that LJF turbines or other structures would be visible from the BLM wayside in Fourmile Canyon. The Council finds that LJF, including the LJIIB components, is not likely to result in significant adverse impact to the scenic values associated with the Fourmile Canyon historic site.

Gilliam County

In the *Final Order on the Application*, the Council found that the scenic resources identified in the Gilliam County Comprehensive Plan are "rock outcroppings" and the John Day River scenic corridor.[164] The Council found that the LJF would not have a significant adverse effect on these scenic resources. Approval of Amendment #1 would not change the facts or circumstances upon which the Council relied in making these findings.

Sherman County

The LJF, including the proposed LJIIB components, is at least six miles from the nearest locations in Sherman County. In the *Final Order on the Application*, the Council found that the scenic resources identified in the Sherman County Comprehensive Plan are trees, rock outcroppings, the John Day River Canyon, the Deschutes River Canyon and the Journey Through Time Tour Route (a Scenic Byway managed by the Oregon Department of Transportation (ODOT)).[165] The potential impacts of the LJF on the John Day River scenic areas have been described above. The LJF would not require removal of any trees in Sherman County and would not interfere with views of rock outcroppings. The nearest parts of Deschutes River Canyon and the Journey Through Time Tour Route (U.S. Highway 97) are more than 18 miles from the LJF. Although there are scenic areas along Highway 97, the Journey Through Time Tour Route Management Plan does not identify any significant or important scenic resources in the segments of the highway closest to the LJF site boundary.[166] The Council finds that the LJF, including the LJIIB components, would not result in a significant adverse impact to the scenic resources identified in the Sherman County land use plan.

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[161] *Final Order on the Application for the Shepherds Flat Wind Farm* (July 25, 2008), pp. 71-74.
[162] *Oregon Trail Management Plan*, Bureau of Land Management, Prineville District, September 1993, p. 3.
[163] *Final Order on the Application for the Shepherds Flat Wind Farm* (July 25, 2008), p. 74.
[164] *Final Order on the Application* (September 21, 2007), pp. 66-67.
[165] *Final Order on the Application* (September 21, 2007), pp. 62-63.
[166] *Journey Through Time Tour Route Management Plan* (April 1996).

Morrow County

The LJF, including the proposed LJIIB components, is at least six miles from the nearest locations in Morrow County. The Morrow County Comprehensive Plan (MCCP) is the applicable local land use plan for the County. The "Natural Resources Element" of the MCCP addresses scenic resources and states that the County has not designated any significant scenic resources.[167]

Klickitat County

The LJF, including the proposed LJIIB components, is at least two miles from the nearest locations in Klickitat County. The applicable local land use plan is the Klickitat County Comprehensive Plan. The comprehensive plan does not identify any scenic resources.[168]

City of Arlington

The City of Arlington Comprehensive Plan includes only one reference to scenic resources or values.[169] The reference is as follows:

> *Goal 5. Open Space, Scenic and Historic Areas, and Natural Resources*
>
> *F. Outstanding Scenic View and Sites*
> *The views outside the City to the east, west, and north are considered scenic views and the topography of the City tends to protect those views as development occurs.*

The identified scenic resources are the views to the east, west and north of the city (views toward the Columbia River). The LJF is located south of the City of Arlington. The Council finds that the LJF, including the LJIIB components, would not result in a significant adverse impact to the scenic resources identified in the Arlington land use plan.

Conclusions of Law

For the reasons discussed above, the Council finds that the design, construction and operation of the LJF, including the proposed LJIIB components, 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. Based on these findings and subject to the site certificate conditions, the Council concludes that the LJF would comply with the Council's Scenic Resources Standard if Amendment #1 were approved.

(e) Recreation

> **OAR 345-022-0100**
> *(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*

[167] MCCP, p. 120.
[168] Email from Curt Dreyer, Klickitat County Planning Director, December 19, 2007 (in the record of the site certificate application for the Shepherds Flat Wind Farm).
[169] Request for Amendment #1, Section 4, p. 41.

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.

* * *

Findings of Fact

In the *Final Order on the Application*, the Council found that the design, construction and operation of the LJF, taking mitigation into account and subject to the conditions stated in the order, were not likely to result in significant adverse impacts to recreational opportunities in the analysis area.[170] Amendment #1 would change the site boundary of the LJF and authorize the construction of the LJIIB components. The Council must decide whether the design, construction and operation of the LJF would have a significant adverse impact to important recreational opportunities in the analysis area if Amendment #1 were approved.

The area within the site boundary is privately owned (except for public road rights-of-way), and it contains no County, State or federal recreational facilities. In the *Final Order on the Application*, the Council found that the recreational opportunities in the analysis area include camping, hiking, upland bird and big game hunting, boating, fishing, sightseeing, nature and wildlife photography, wind surfing and bicycling.[171] The Council found that opportunities for the public to view the ONHT alignment is an important recreational opportunity but that the other recreational opportunities in the analysis area are not important recreational opportunities according to the factors listed in the Recreation Standard. In the *Final Order*, the Council found that the LJF would not interfere significantly with public viewing of the ONHT alignment.[172]

The presumed alignment of the ONHT crosses the LJIIB area.[173] The Council has found that the opportunity to view developed areas of the alignment is common and replaceable, although views of intact segments are rare and irreplaceable.[174] No intact portions of the ONHT are visible from county roads or public viewing areas in the analysis area.[175] The Council finds that the design, construction and operation of the LJF, with the LJIIB components, are not likely to result in significant adverse impacts to recreational opportunities in the analysis area.

[170] *Final Order on the Application* (September 21, 2007), p. 65.
[171] *Final Order on the Application* (September 21, 2007), p. 64.
[172] *Final Order on the Application* (September 21, 2007), p. 65.
[173] Request for Amendment #1, Section 4, p. 45, and Attachment 1, Figure 24.
[174] *Final Order on the Application* (September 21, 2007), p. 65.
[175] Request for Amendment #1, Section 4, p. 45.

Conclusions of Law

Based on the findings discussed above and subject to the site certificate conditions, the Council concludes that the LJF would comply with the Council's Recreation Standard if Amendment #1 were approved.

(f) Public Health and Safety Standards for Wind Energy Facilities

OAR 345-024-0010

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.

Findings of Fact

In the *Final Order on the Application*, the Council found that the certificate holder could design, construct and operate the LJF to exclude members of the public from close proximity to the turbine blades and electrical equipment, to preclude structural failure of the tower or blades that could endanger the public safety and to have adequate safety devices and testing procedures.[176] Those findings are incorporated herein by this reference. To ensure public safety, the Council included Conditions 12, 27, 39, 50, 51, 53, 54, 55, 56, 57, 58 and 59 in the site certificate.

Similar public safety considerations would apply to the LJIIB components. The certificate holder proposes that the Council revise the setback requirements in Condition 39 to conform to setback distances that the Council has required for other wind energy facilities.[177] The Council modifies Condition 39 as discussed in Revision 12.

Both the Federal Aviation Administration (FAA) and the Oregon Department of Aviation are responsible for determining whether any turbine tower presents a hazard to aviation in Oregon.[178] Condition 53 requires the certificate holder to submit a Notice of Proposed Construction or Alteration to the FAA before construction when the final design location of a turbine or met tower is known. If the FAA finds that a proposed turbine would not present a safety hazard, the FAA issues a "Determination of No Hazard to Air Navigation" letter. The certificate holder must receive the FAA determination before beginning construction of each turbine. In Revision 18, the Department recommended modification of Condition 53 to require the submission of Notices of Proposed Construction or Alteration to the Oregon Department of Aviation, as required under OAR 738-070-0080. In response to a Notice of Proposed Construction or Alteration, the Oregon Department of

[176] *Final Order on the Application* (September 21, 2007), p. 66.
[177] Request for Amendment #1, Section 4, p. 50.
[178] ORS 836.530 authorizes the Oregon Department of Aviation to adopt rules to "define physical hazards to air navigation and determine whether specific types or classes of objects or structures constitute hazards." The agency has adopted rules in OAR Chapter 738, Division 70, regarding physical hazards to air safety.

Aviation makes a determination whether the proposed construction would be a hazard to air navigation and whether further aeronautical study is necessary.[179]

Conclusions of Law

For the reasons discussed above and subject to the site certificate conditions discussed herein, the Council concludes that the LJF would comply with the Council's Public Health and Safety Standards for Wind Energy Facilities if Amendment #1 were approved.

(g) Siting Standards for Wind Energy Facilities

OAR 345-024-0015

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.

Findings of Fact

In the *Final Order on the Application*, the Council found that the certificate holder could design and construct the LJF to reduce visual impact, to restrict public access and to reduce cumulative adverse environmental impacts in the vicinity to the extent practicable in accordance with the requirements of OAR 345-024-0015.[180] Those findings are incorporated herein by this reference.

Approval of Amendment #1 would reduce the number of turbines authorized for construction at the LJF from 133 to 127. The amendment would enlarge the facility site from approximately 6,404 acres to approximately 14,366 acres.[181]

The current site certificate authorizes construction of approximately 21 miles of new access roads in the LJIIA area and improvement of approximately 7 miles of existing roads,

[179] OAR 738-070-0090.
[180] *Final Order on the Application* (July 25, 2008), pp. 79-85.
[181] Based on Table 7 herein.

but the certificate holder is planning to build only 13.7 miles of new access roads and to widen approximately 4.5 miles of existing roads in the LJIIA area.[182] If Amendment #1 were approved, the certificate holder would be authorized to construct up to 20.9 miles of new access roads in the LJIIB area.[183] In addition, the certificate holder would be authorized to improve up to 5.4 miles of County roads and 0.6 miles of existing private roads.

The site certificate authorizes construction of a power collection system of up to 33.2 miles of 34.5-kV collector lines but not more than 9.9 miles of aboveground collector lines in the LJIIA area.[184] The certificate holder is planning to build approximately 20.9 miles of 34.5-kV collector lines in the LJIIA area with only 2.7 miles of aboveground collector lines.[185] The amendment would authorize up to 22.3 miles of collector lines in the LJIIB area but not more than 6.7 miles of aboveground collector lines.[186]

The amendment would add an aboveground transmission interconnection line approximately 6.1 miles in length configured either as a 230-kV transmission line or as two double-circuit 34.5-kV lines running parallel.[187] The amendment would authorize the construction of a substation in the LJIIB area.[188]

A. Access Roads

The Council's standard encourages the use of existing roads to provide access to the facility site, minimizing the amount of land used for new roads and locating new roads in a manner that reduces adverse environmental impacts. The certificate holder considered potential adverse environmental impacts in locating proposed new access roads for LJIIB. New access roads are needed where existing roads do not provide access to the proposed turbine locations. Condition 41 requires the certificate holder to locate access roads to minimize disturbance of farming practices. Condition 84 requires the certificate holder to design and construct access roads (and other facility components) that are the minimum size necessary for safe operation of the facility.

B. Transmission Lines and Substations

The standard encourages the use of underground transmission lines, combining transmission routes and minimizing the number of new substations. The collector system for the LJF, including the collector lines that would be added by Amendment #1, would be built underground to the extent practical (Condition 78). If the 230-kV interconnection line option is built, then the certificate holder would also build a new substation in the LJIIB area. Alternatively, the certificate holder could construct parallel double-circuit 34.5-kV transmission lines for the interconnection and avoid construction of the substation.

C. Wildlife Protection

The standard encourages the certificate holder to design the facility to reduce the risk of injury to raptors or other vulnerable wildlife in areas near turbines or electrical equipment.

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[182] Response to RAI, Attachment G, Table 2.
[183] Response to RAI, Attachment 1, Table 1.
[184] *Final Order on the Application* (September 21, 2007), p. 11.
[185] Response to RAI, Attachment G, Table 1.
[186] Request for Amendment #1, Section 4, p. 3, and Response to RAI, Summary of Modifications.
[187] Request for Amendment #1, Section 4, p. 4, and Response to RAI, Summary of Modifications.
[188] Request for Amendment #1, Section 4, p. 3.

Condition 83 requires the certificate holder to design the transmission lines to minimize raptor injury by conforming to Avian Powerline Interaction Committee (APLIC) suggested practices for raptor protection on power lines. The Council modifies Condition 83 to update the APLIC guidelines to the current guidance issued in 2006.[189] Condition 59 requires that pad-mounted transformers be designed to avoid the creation of artificial habitat for raptor prey. Condition 60 requires turbine pad areas to be graveled to reduce the potential for erosion and weed infestation. Condition 55 requires the use of smooth towers that reduce horizontal perching opportunities. Meteorological towers must be designed without guy wires for support. Condition 84 requires the certificate holder to avoid permanent and temporary disturbance of all Category 1 habitat and to reduce the impact on essential or important habitat (Category 4 and above) to the extent practical. Other conditions to protect wildlife and wildlife habitat are referenced in the discussion of the Council's Fish and Wildlife Habitat Standard at page 63 below.

D. Visual Features

The standard encourages facility design that minimizes adverse visual features but recognizes that it is not "practicable" to make wind turbine towers invisible. The Council adopted Conditions 90, 91 and 92 to reduce the visual impact of the LJIIA components, and these conditions would apply to the LJIIB components as well. The amendment does not increase the number of turbines. The certificate holder intends to reduce the density of turbines, especially in the LJIIA area, where 43 turbines are planned for construction (a reduction from the 133 turbines previously authorized). Overall turbine density, including the LJIIB area, would be a maximum of 127 turbines within a 14,366-acre site, or 1 turbine per 113 acres.

E. Lighting

The standard requires the use of the minimum lighting necessary for safety and security purposes and the use of techniques to prevent casting glare from the site but does not restrict the use of lighting otherwise required by the FAA or the Oregon Department of Aviation.

Condition 92 limits the use of lighting at the facility. During the review of the amendment request, the certificate holder requested modification of Condition 92 to allow the use of lighting for nighttime construction.[190] The Department suggested language similar to that used in Condition 52(d) of the *Third Amended Site Certificate for the Biglow Canyon Wind Farm*. The certificate holder objected to the language in the Biglow condition that requires approval by the owners of the properties on which illuminated nighttime construction work would occur and that requires notification of all residents within one-half mile of the construction site. The certificate holder felt that "requiring additional notification simply interferes with IBR's relationship with landowners" and that requiring property-owner approval "is a matter properly addressed under IBR's leases."[191] The certificate holder proposed instead that Condition 92 be modified to allow "minimum lighting necessary for construction" and to require that such lighting be shielded or downward-directed to reduce

[189] The certificate holder agrees with this change. Response to RAI (table), p. 16 (response to Request #11).
[190] Response to RAI (table), p. 16 (response to request #12).
[191] Email from Elaine Albrich, attorney for IBR, October 8, 2009.

glare." The Council modifies Condition 92, as described in Revision 30, based on the language proposed by the certificate holder.

Conclusions of Law

Based on these findings and subject to site certificate conditions described herein, the Council concludes that the LJF would comply with the Council's Siting Standards for Wind Energy Facilities if Amendment #1 were approved.

(h) Siting Standards for Transmission Lines

OAR 345-024-0090

To issue a site certificate for a facility that includes any transmission line under Council jurisdiction, the Council must find that the applicant:

(1) Can design, construct and operate the proposed transmission line so that alternating current electric fields do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public;

(2) Can design, construct and operate the proposed transmission line so that induced currents resulting from the transmission line and related or supporting facilities will be as low as reasonably achievable.

Findings of Fact

A. Electric Fields

In the *Final Order on the Application*, the Council found that the certificate holder could design and construct the LJF transmission lines so that electric fields would not exceed 9 kV per meter at one meter above ground surface in areas accessible to the public.[192] The Council found that the certificate holder could design, construct and operate the proposed transmission lines so that induced currents resulting from the transmission lines and related or supporting facilities would be as low as reasonably achievable.

The proposed LJIIB components include underground and aboveground 34.5-kV collector lines. The certificate holder would design and construct the collector lines for LJIIB according to the same specifications discussed in the *Final Order* for the LJIIA collector lines.[193] The Council finds the previous findings regarding LJIIA collector line compliance with the electric field standard apply as well to the LJIIB collector lines.

In the amendment request, the certificate holder requests the option to transmit the power generated by the LJIIB turbines to the LJIIA substation by either of two methods. One option would be the use of two double-circuit 34.5-kV lines running parallel to each other from the LJIIB area to the LJIIA substation. The other option would be to collect the power from the LJIIB turbines at a new substation where the power would be stepped up to 230 kV. The certificate holder would build a 230-kV aboveground transmission line to carry the power from the LJIIB substation to the LJIIA substation. The 230-kV line would be carried on monopole or H-frame support structures.[194]

[192] *Final Order on the Application* (September 21, 2007), p. 73.
[193] *Final Order on the Application* (September 21, 2007), p. 73.
[194] Request for Amendment #1, Attachment 1, Figures 5-7.

Parallel Double-Circuit 34.5-kV Transmission Lines

The amendment request includes an electric field analysis of the parallel double-circuit 34.5-kV interconnection option.[195] The analysis assumed a distance of 75 feet between the centerlines of each line and a minimum clearance of 25 feet from the ground at mid-span. The results of the modeling analysis predicted a maximum electric field at one meter above ground of 0.208 kV/m.[196] This is well within the Council's standard of not more than 9 kV per meter.

Aboveground 230-kV Transmission Line

The amendment request includes an analysis of the electric field under the proposed 230-kV transmission line option.[197] The analysis considered configurations using monopole supports and using H-type support structures. A minimum clearance of 30 feet above ground at mid-span was assumed for both types of supports. The results of the modeling analysis predicted a maximum electric field at one meter above ground of 2.626 kV/m for the H-type supports and 2.253 kV/m for the monopole supports. Either configuration would result in an electric field within the Council's standard.

Measures to Reduce Electric Field Hazards

There are no residences or buildings occupied by the public within 200 feet of either side of the proposed interconnection transmission lines.[198] The certificate holder would reduce electric fields by configuring conductor placement and separation to result in partial cancellation of the fields. An induced voltage hazard occurs on fences or other structures that parallel overhead transmission lines. This hazard would be reduced by grounding the fence wires along the length of the fence.

Condition 17 requires the certificate holder to design, construct and operate all facility transmission lines in accordance with the requirements of the National Electrical Safety Code. The condition also requires grounding of fences and other structures that could become charged with electricity due to induced voltage from overhead transmission lines. Condition 80 requires the certificate holder to design and maintain facility transmission lines so that electric fields during operation do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public and so that induced voltages during operation are as low as reasonably achievable.

Conclusions of Law

Based on these findings and subject to the site certificate conditions described herein, the Council concludes that the LJF would comply with the Council's Siting Standards for Transmission Lines if Amendment #1 were approved.

[195] Request for Amendment #1, Section 4, pp. 53-54, and Attachment 9 (Addendum to Leaning Juniper II Wind Power Facility Exhibit AA Electromagnetic Field Analysis).
[196] The certificate holder used the EPRI EMF Workstation: ENVIRO program to perform the analysis.
[197] Request for Amendment #1, Section 4, pp. 53-54, and Attachment 9 (Addendum to Leaning Juniper II Wind Power Facility Exhibit AA Electromagnetic Field Analysis).
[198] Request for Amendment #1, Section 4, p. 13.

4. Standards to Protect Wildlife

(a) Threatened and Endangered Species

OAR 345-022-0070

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.

Findings of Fact

In the *Final Order on the Application*, the Council found that the design, construction and operation of the LJF, taking mitigation into account and subject to site certificate conditions, did not have the potential to significantly reduce the likelihood of the survival or recovery of any threatened or endangered plant or wildlife species listed under Oregon law.[199] The Council made findings regarding threatened or endangered plant and wildlife species within the LJIIA analysis area.[200] Those findings are incorporated herein by this reference.

The amendment request includes a supplemental analysis of threatened or endangered plant and wildlife species within an analysis area including the LJIIB area and the surrounding areas within 5 miles.[201]

A. Plant Species

Special-status plant species surveys were conducted in May and June, 2009, within survey corridors around the proposed LJIIB components. One State-listed threatened plant species (Laurent's milk-vetch) was observed within the survey corridor.[202] This species was observed at elevations of 800 to 860 feet.[203] Potential adverse impacts on Laurent's milk-vetch were previously considered unlikely because this species "is generally found at

[199] *Final Order on the Application* (September 21, 2007), p. 80.
[200] *Final Order on the Application* (September 21, 2007), pp. 74-79.
[201] Request for Amendment #1, Attachment 7 (Supplemental 2008-2009 Study to the 2005 Leaning Juniper Wildlife Baseline Study).
[202] The species is identified as "Laurence's milk-vetch" in the *Final Order on the Application* (September 21, 2007), pp. 75-76.
[203] Response to RAI (table), p. 16 (response to Request #10).

elevations between 1,950 and 3,600 feet."[204] One State Candidate plant species (sessile mousetail) was observed just outside the site boundary.

Condition 84 requires the certificate holder to install exclusion fencing around confirmed populations of sessile mousetail as a protective measure during construction. In Revision 24, the Council modifies Condition 84 to provide the same protection of confirmed populations of Laurent's milk-vetch.

During the surveys, three rare plant species that are tracked by the Oregon Natural Heritage Program were observed (stalked-pod milk-vetch, Columbia milk-vetch and Columbia bladderpod). These species are not listed as threatened or endangered; nor are they listed as Candidate species.[205] The survey report concluded that construction of the LJIIB components could result in temporary and permanent impacts to stalked-pod milk-vetch and Columbia milk-vetch but that significant adverse impact to populations of these species would be unlikely.[206]

The Council finds that the design, construction and operation of the proposed LJIIB components, subject to the site certificate conditions discussed herein, are not likely to cause a significant reduction in the likelihood of survival or recovery of any State-listed threatened or endangered plant species.

B. Fish and Wildlife Species

Washington ground squirrel (*Spermophilus washingtoni*) is a mammal species that is State-listed as endangered. Bald eagle (*Haliaeetus leucocephalus*) is a raptor that is State-listed as threatened. The Council has previously found that these two State-listed wildlife species potentially occur within the analysis areas for the LJF.[207] Special status vertebrate wildlife surveys were conducted in April and May, 2009, within survey corridors around the proposed LJIIB components.

Washington Ground Squirrel

In the *Final Order on the Application*, the Council found that active Washington ground squirrel (WGS) sites exist within the LJIIA area.[208] During the wildlife surveys conducted in 2009, WGS were observed at numerous locations within the LJIIB survey corridors.[209] Condition 85 requires preconstruction survey and marking of an exclusion area around WGS areas. The Council modifies Condition 85 to require the preconstruction WGS survey to be done before each phase of construction.

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[204] CH2M HILL, *Rare Plant Survey Addendum Leaning Juniper II Wind Energy Project, Gilliam County, Oregon* (September 1, 2006), Leaning Juniper II Wind Power Facility Application for Site Certificate, Attachment Q-1, p. 2.

[205] A "candidate species" is "any plant species designated for study by the director [of the Oregon Department of Agriculture] whose numbers are believed low or declining, or whose habitat is sufficiently threatened and declining in quantity and quality, so as to potentially qualify for listing as a threatened or endangered species in the foreseeable future." OAR 603-073-0002.

[206] Supplemental 2008-2009 Study to the 2005 Leaning Juniper Wildlife Baseline Study, p. 23 (Request for Amendment #1, Attachment 7).

[207] *Final Order on the Application* (September 21, 2007), pp. 76-77.

[208] *Final Order on the Application* (September 21, 2007), pp. 78-79.

[209] Supplemental 2008-2009 Study to the 2005 Leaning Juniper Wildlife Baseline Study, p. 19 and Table 12 (Request for Amendment #1, Attachment 7).

See page 70 below for a discussion of WGS habitat. ODFW considers the area within 785 feet of identified WGS burrows in the LJIIB area to be "essential and limited" habitat that is "irreplaceable" (Category 1 habitat). Condition 84 requires avoidance of permanent or temporary disturbance of Category 1 habitat.

Because the certificate holder would avoid disturbance of Category 1 WGS habitat, the Council finds that the design, construction and operation of the LJF, including the proposed LJIIB components, are unlikely to cause a significant reduction in the likelihood of survival or recovery of the species.

Bald Eagle

The bald eagle is generally associated with freshwater, estuarine and marine ecosystems that provide abundant prey and suitable habitat. Bald eagles winter along the Columbia River north of the project area. The eagles concentrate their foraging and roosting in areas along or close to the Columbia River, but they might scavenge on carrion and small mammals in the upland areas. Bald eagles might pass through the LJIIB site infrequently during spring and fall migration or during the winter. No bald eagles were observed during the avian use surveys conducted during fall and winter 2008-2009 or during the special status wildlife surveys conducted in April and May of 2009 in and around the LJIIB site.[210] The Council finds that the design, construction, operation and retirement of the proposed LJIIB components are unlikely to have any significant adverse impact on bald eagles.

One golden eagle was observed by surveyors while they were traveling to the winter season avian use survey points outside the LJIIB site boundary. Although the golden eagle is not a State-listed threatened or endangered species, bald eagles and golden eagles are protected under the federal Bald and Golden Eagle Protection Act. If eagle fatalities are discovered during post-construction monitoring required under the *Wildlife Monitoring and Mitigation Plan*, the certificate holder would notify the U.S. Fish and Wildlife Service, ODFW and the Department. If appropriate, additional mitigation measures would then be implemented (Condition 87).

Conclusions of Law

For the reasons discussed above and subject to the site certificate conditions described herein, the Council concludes that the LJF would comply with the Council's Threatened and Endangered Species Standard if Amendment #1 were approved.

(b) Fish and Wildlife Habitat

> **OAR 345-022-0060**
> *To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025 in effect as of September 1, 2000.*

[210] Supplemental 2008-2009 Study to the 2005 Leaning Juniper Wildlife Baseline Study, pp. 16-17, Tables 9 and 10 and Appendix R (Request for Amendment #1, Attachment 7).

Findings of Fact

A. Habitat Impacts

In the *Final Order on the Application*, the Council found that the design, construction and operation of the LJF would be consistent with ODFW's habitat mitigation goals and standards.[211] The Council made findings regarding the characteristics of the habitat types within the site boundary and the State sensitive species observed within or near the lease boundaries during avian point-counts and other wildlife surveys.[212] To estimate the maximum habitat impacts that could result from construction of the LJF, the applicant assumed a layout of turbines and other facility components within the micrositing corridors that would maximize the impact on higher-value habitat. The maximum impact habitat assessment for LJIIA is shown in Table 11 of the *Final Order*.

During the Department's review of the Request for Amendment #1, the certificate holder developed the final design configuration for the LJIIA area. Table 6 below is the final design habitat assessment for LJIIA.[213]

Table 6: LJIIA Final Design Habitat Impacts

Habitat type	Habitat subtype	Area of LJIIA construction impact (acres)	Area of LJIIA permanent impact (acres)
Category 1			
CRP or other planted grassland	DC	0	0
Escarpment	ESC	0	0
Annual grass and weeds with residual native bunchgrass	GA	0	0
Perennial bunchgrass	GB	0	0
Open low shrub	SSA	0	0
Shrub-grass	SSB	0	0
Juniper woodland	WJ	0	0
Subtotal		0	0

[211] *Final Order on the Application* (September 21, 2007), p. 102.
[212] *Final Order on the Application* (September 21, 2007), pp. 82-91.
[213] The *Habitat Mitigation Plan*, which is incorporated in Condition 89, requires the certificate holder to provide a habitat assessment table based on the final design configuration.

Category 2			
Escarpment	ESC	0	0
Annual grass and weeds with residual native bunchgrass	GA	0	0
Perennial bunchgrass	GB	0	0
Shrub-grass	SSA	12.69	1.56
Open low shrub	SSB	32.62	4.52
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	0	0
Bitterbrush/buckwheat, bunchgrass - Annual grass	SSE	5.50	0.20
Juniper woodland	WJ	0	0
Deciduous woodland	WL	0	0
Subtotal		50.80	6.28
Category 3			
Old field	DB	0	0
CRP or other planted grassland	DC	0	0
Annual grass and weeds with residual native bunchgrass	GA	0	0
Shrub-grass	SSA	1.80	0.59
Open low shrub	SSB	107.32	12.77
Open low shrub (buckwheat)/ Sanberg's bluegrass with non-native annual grasses	SSC	0.44	0.12
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	0	0
Subtotal		109.56	13.48
Category 4			
Old field	DB	2.62	0.81
Other disturbed ground	DX	0	0
Exposed basalt	EB	0	0
Annual grass and weeds with residual native bunchgrass	GA	1.92	0.58
Open low shrub	SSB	0	0
Open low shrub (buckwheat)/ Sandberg's bluegrass with non-native annual grasses	SSC	0	0
Subtotal		4.54	1.38
Category 5			
Old field	DB	6.98	1.34
Subtotal		6.98	1.34

Category 6			
Old field	DB	2.18	3.01
Farmyard	DF	0.17	0.11
Quarry	DQ	0	0
Dryland wheat	DW	99.90	13.07
Other disturbed ground	DX	0.35	0.23
Subtotal		102.59	16.42
TOTAL		**274.47**	**38.91**

The amendment request includes a report on field surveys of the LJIIB area conducted by Northwest Wildlife Consultants (NWC) in 2008 and 2009.[214] The NWC study included habitat assessment and mapping for the LJIIB area, special status plant surveys (spring 2009), avian use surveys (fall and winter 2008; spring 2009), raptor nest surveys (2009), Washington ground squirrel surveys (2008 and 2009) and other special status wildlife surveys (2009).

OAR 635-415-0025 defines six categories of habitat in order of their value to wildlife. The rule establishes mitigation goals and corresponding implementation standards for each habitat category.[215] In the amendment request, the certificate holder classified the habitat within the LJIIB area according to ODFW categories.[216] The habitat categories are mapped within the LJIIB area as shown on Figures 2, 2a, 2b and 2c.[217]

To describe the habitat impacts that are likely to occur due to construction of the LJIIB components, the certificate holder estimated the permanent footprint impacts and temporary construction impacts in each habitat type, as shown in Table 7, based on the expected (current) facility layout. The table also shows the total acres of each habitat type within the LJIIA and LJIIB areas.[218]

The Council made findings regarding on-site characteristics of the habitat subtypes within each habitat category in the LJIIA area.[219] Similar characteristics describe the same habitat subtypes in the LJIIB area, and the Council's earlier findings are incorporated herein by this reference. Some of the "open low shrub" (SSB) found within the LJIIB area was rated as Category 4 due to its condition and location.[220] This habitat is located along a public highway and a secondary road, and although it is structurally functional for wildlife, human disturbance from traffic on the roadways limits wildlife use. Habitat subtype "DC" (CRP or other planted grassland) was not identified in the LJIIA area, but is shown in Table 7 in Categories 1 and 3. This disturbed habitat is rated Category 1 where it exists within the 785-foot WGS buffer area, described below at page 70.

[214] Request for Amendment #1, Attachment 7.
[215] The Council discussed the six habitat categories and the mitigation goals in the *Final Order on the Application* (September 21, 2007), pp. 80-81.
[216] Request for Amendment #1, Section 4, p. 33, and Attachments 3 and 7; Response to RAI (table), p.1 (response to email of 7/22/09), and Attachment A, revised Tables 3 and 4.
[217] Response to RAI, Attachment B.
[218] In contrast to Table 11 in the *Final Order on the Application* (September 21, 2007), Table 7 shows the total area within the site boundaries for LJIIA and LJIIB rather than the total area within the certificate holder's lease boundary (LJIIA).
[219] *Final Order on the Application* (September 21, 2007), pp. 86-89.
[220] Request for Amendment #1, Attachment 7, p. 13.

Table 7: LJIIB Current Layout Habitat Impacts[221]

Habitat type	Habitat subtype	Area of LJIIB construction impact (acres)	Area of LJIIB permanent impact (acres)	Total LJIIB area (acres)	Total LJIIA area (acres)
Category 1					
CRP or other planted grassland	DC	0	0	12.56	0
Escarpment	ESC	0	0	0	< 0.01
Annual grass and weeds with residual native bunchgrass	GA	0	0	11.13	6.60
Perennial bunchgrass	GB	0	0	4.18	0
Open low shrub	SSA	0	0	22.29	21.29
Shrub-grass	SSB	0	0	443.45	67.11
Juniper woodland	WJ	0	0	3.01	0.05
Subtotal		0	0	496.61	95.06
Category 2					
Escarpment	ESC	0	0	0	24.52
Annual grass and weeds with residual native bunchgrass	GA	0	0	0.40	0
Perennial bunchgrass	GB	0.09	0	33.48	32.51
Shrub-grass	SSA	2.98	0.03	120.46	296.53
Open low shrub	SSB	60.11	9.37	612.96	884.61
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	0	0	0	6.05
Bitterbrush/buckwheat, bunchgrass - Annual grass	SSE	0	0	0	193.71
Juniper woodland	WJ	6.60	0.30	178.95	69.48
Deciduous woodland	WL	0	0	0	3.37
Subtotal		69.78	9.7	946.26	1,510.79
Category 3					
Old field	DB	0	0	0	2.15
CRP or other planted grassland	DC	66.92	8.39	449.97	0
Annual grass and weeds with residual native bunchgrass	GA	0.63	0.01	13.44	19.36
Shrub-grass	SSA	0.31	< 0.01	2.57	48.65
Open low shrub	SSB	74.55	5.81	1,059.03	1,677.84
Open low shrub (buckwheat)/ Sandberg's bluegrass with non-native annual grasses	SSC	0	0	0	4.94
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	0	0	0	0.18
Subtotal		142.40	14.22	1,525.02	1,753.11

[221] Based on revised Table 3, Response to RAI, Attachment A, and revised Table 3, Response to Additional RAI, Attachment 2.

Category 4					
Old field	DB	0.84	0.01	1.44	83.77
Other disturbed ground	DX	1.01	0.01	0	33.83
Exposed basalt	EB	0	0	0	43.83
Annual grass and weeds with residual native bunchgrass	GA	12.27	1.65	227.53	111.67
Open low shrub	SSB	0.99	0.45	19.65	0
Open low shrub (buckwheat)/ Sandberg's bluegrass with non-native annual grasses	SSC	0	0	0	5.46
Subtotal		15.11	2.12	248.62	278.57
Category 5					
Old field	DB	0	0	0	74.68
Subtotal		0	0	0	74.68
Category 6					
Old field	DB	0.11	< 0.01	3.86	40.52
Farmyard	DF	0.84	0	22.85	25.65
Quarry	DQ	0	0	0	32.64
Dryland wheat	DW	342.21	39.69	4,686.90	2,568.57
Other disturbed ground	DX	4.91	6.62	31.65	24.15
Subtotal		348.07	46.32	4,745.26	2,691.53
TOTAL		**575.36**	**72.36**	**7,961.77**	**6,403.74**

To allow for facility micrositing while ensuring that there would be adequate mitigation for potential impacts on high-value habitat, the certificate holder estimated the maximum impacts that the LJIIB components could have on wildlife habitat. The certificate holder created a "worst-case" habitat impact layout by moving the turbines, other facility components and areas of temporary disturbance to locations within the micrositing areas that have higher-quality habitat, compared to the expected layout, excluding Category 1 habitat.[222] Table 8 shows the acres of construction impacts and permanent impacts, based on the maximum-impact layout. Compared to the current layout shown in Table 7, in which 36 percent of the total area of impact (including construction impacts and permanent impacts) would affect Category 2 and Category 3 habitat, 45 percent of the impacts from the maximum-impact layout would affect such habitat. The current layout would affect 79 acres of Category 2 habitat while the maximum-impact layout would affect 114 acres of Category 2 habitat.

[222] Response to Additional RAI (table) #5, pp. 5-6. The maximum impacts layout is shown in Figures 3, 3a, 3b and 3c (Response to Additional RAI, Attachment 2).

Table 8: LJIIB Maximum Habitat Impacts[223]

Habitat type	Habitat subtype	Area of construction impact (acres)	Area of permanent impact (acres)
Category 1			
CRP or other planted grassland	DC	0	0
Escarpment	ESC	0	0
Annual grass and weeds with residual native bunchgrass	GA	0	0
Perennial bunchgrass	GB	0	0
Open low shrub	SSA	0	0
Shrub-grass	SSB	0	0
Juniper woodland	WJ		
Subtotal		0	0
Category 2			
Escarpment	ESC	0	0
Annual grass and weeds with residual native bunchgrass	GA	0	0
Perennial bunchgrass	GB	0.09	0
Shrub-grass	SSA	6.18	0.21
Open low shrub	SSB	80.37	11.24
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	0	0
Bitterbrush/buckwheat, bunchgrass - Annual grass	SSE	0	0
Juniper woodland	WJ	15.68	0.72
Deciduous woodland	WL	0	0
Subtotal		102.32	12.16
Category 3			
Old field	DB	0	0
CRP or other planted grassland	DC	70.66	9.24
Annual grass and weeds with residual native bunchgrass	GA	0.63	0.01
Shrub-grass	SSA	0.31	<0.01
Open low shrub	SSB	84.97	6.82
Open low shrub (buckwheat)/ Sandberg's bluegrass with non-native annual grasses	SSC	0	0
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	0	0
Subtotal		156.55	16.08

[223] Based on revised Table 4, Response to RAI, Attachment A.

Category 4			
Old field	DB	0.84	0.01
Other disturbed ground	DX	1.01	0.01
Exposed basalt	EB	0	0
Annual grass and weeds with residual native bunchgrass	GA	10.44	0.98
Open low shrub	SSB	0.99	0.45
Open low shrub (buckwheat)/ Sandberg's bluegrass with non-native annual grasses	SSC	0	0
Subtotal		13.28	1.44
Category 5			
Old field	DB	0	0
Subtotal		0	0
Category 6			
Old field	DB	0.11	<0.01
Farmyard	DF	0.84	0
Quarry	DQ	0	0
Dryland wheat	DW	293.25	34.77
Other disturbed ground	DX	4.91	6.62
Subtotal		299.11	41.38
TOTAL		**571.27**	**71.06**

Table 8 provides a basis for determining the maximum size of the habitat mitigation area that would be needed for the permanent and temporal impacts of the LJIIB components on wildlife habitat. Although the actual habitat impacts of the facility would not be determined until the final design layout is known, the estimates of maximum impacts on high-value habitat shape the upper bounds of the quantity and quality of mitigation acres that would be required. To calculate the total maximum area of habitat impacts for the facility as a whole, the acres shown in Table 8 must be added to the acres shown in Table 6 (final design impacts for LJIIA).

Washington Ground Squirrel Habitat

As discussed above at page 62, the Washington ground squirrel (WGS) is a State-listed endangered species. Wildlife surveys have found WGS in several locations in both the LJIIA and LJIIB areas.[224]

In the *Final Order on the Application*, the Council discussed the classification of "patches" of shrub-steppe habitat in the LJIIA area as Category 1, based on the guidance from ODFW that was available at that time.[225] The Council made the following findings:

[224] Northwest Wildlife Consultants, Inc., and WEST, Inc., Wildlife Baseline Study for the Leaning Juniper Wind Power Project (November 3, 2005); Northwest Wildlife Consultants, Inc., Supplemental 2008-2009 Study to the 2005 Leaning Juniper Wildlife Baseline Study (June 18, 2009). The 2009 study is included in the Request for Amendment #1 as Attachment 7.

[225] *Final Order on the Application* (September 21, 2007), p. 87.

> Based on guidance from ODFW, WGS habitat is considered Category 1 if the habitat is irreplaceable when considering the consequences of a proposed development action. Patches of WGS were found in shrub-steppe habitat in the LJ-South are[a], and these locations are considered Category 1, as described above. The WGS might use adjacent habitat (up to 785 feet from the delineated active cluster WGS, a known travel distance for the species) for cover and possibly forage during daily or periodic movements.[226] Because this "squirrel use area" adjacent to the colonies or patches is "replaceable," it is considered Category 2 habitat. The species is also known to travel longer distances. Habitat in areas of unconfirmed use is considered replaceable because grassland and shrub cover could be restored if disturbed and because of the amount of potentially-suitable habitat in the vicinity.

The ODFW guidance described the habitat that should be considered "essential and limited for WGS" as "any habitat that is necessary for WGS colonies including the associated WGS use area for those colonies or habitat that provides necessary movement (connectivity) between existing colonies, previously documented colonies and suitable habitat for future colonies."[227] If an area of "essential and limited" habitat were found to be "irreplaceable when considering the consequences of a proposed development action," then ODFW classified the area as Category 1 habitat.[228] If the habitat were found to be "replaceable," however, then ODFW classified the area as Category 2.

In the site certificate application, the applicant noted that a "potential squirrel use area" exists in areas adjacent to WGS "patches" and that this area can extend "up to 785 feet from the delineated active cluster of concentrated squirrel activity."[229] The applicant reasoned that the "use area" was not "irreplaceable" habitat and therefore rated it as Category 2. In commenting on the application, ODFW did not object to the applicant's rating of the squirrel use area as Category 2.[230] ODFW recommended that the applicant "survey the full extent of the known colony prior to construction on the boundary closest to the construction zone." ODFW was concerned that "the colony could grow substantially in a year or two and could very well be right in the middle of the construction zone." ODFW's recommendation was incorporated in Condition 85 of the site certificate, which requires, in part: "Before construction begins, the certificate holder shall have a qualified biologist place exclusion markers around sensitive wildlife habitat areas, including Category 1 Washington ground squirrel (WGS) areas and an appropriate buffer around these areas."

In September 2008, a year after the Council issued the site certificate for the LJF, ODFW provided new guidance regarding the classification of WGS habitat. Under the new guidance, a "cluster of holes where the squirrels are residing during the time of a survey is considered Category 1 habitat" and must be avoided.[231] In addition, ODFW defined the area

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[226] Site Certificate Application (September 2006), p. P-20.

[227] Letter from Kevin Blakely, ODFW, to Peter Mostow, March 15, 2002.

[228] OAR 635-415-0005(14) defines "irreplaceable" as follows:

> "Irreplaceable" means that successful in-kind habitat mitigation to replace lost habitat quantity and/or quality is not feasible within an acceptable period of time or location, or involves an unacceptable level of risk or uncertainty, depending on the habitat under consideration and the fish and wildlife species or populations that are affected. "Acceptable", for the purpose of this definition, means in a reasonable time frame to benefit the affected fish and wildlife species.

[229] Site Certificate Application, p. P-20.

[230] Letter from Rose Owens, ODFW, June 20, 2007.

[231] Letter from Rose Owens, Oregon Department of Fish and Wildlife, September 15, 2008 (comments on the preliminary application for a site certificate for the Helix Wind Power Facility).

"depicted by a 785-foot ring around the outside of the cluster of holes where the Washington ground squirrels are residing" as "required area for squirrel survival" that is also Category 1 habitat. The ODFW guidance defines a WGS "colony" as "the cluster of holes as well as the required habitat for squirrel survival."[232] Habitat adjacent to a WGS "colony" is considered Category 2 habitat if it is of a similar habitat type and quality as the area occupied by the WGS. This adjacent area is defined as "an area of potential Washington ground squirrel use."

The Council applies the September 2008 ODFW guidance on WGS habitat to the identified WGS locations in the LJIIB area but does not apply the guidance retroactively to the WGS locations identified in the LJIIA area as discussed in the *Final Order on the Application.*[233]

After discussions with the Department and ODFW regarding proper classification of Category 1 WGS habitat, the certificate holder revised the LJIIB layout to avoid disturbance of all Category 1 habitat.[234] The certificate holder submitted revised component layouts, revisions of the habitat mapping and revised habitat impact tables as well as other information requested by the Department regarding the amendment request.[235]

Other Special-Status Species

The *Final Order on the Application* describes special-status species observed within and near the LJIIA area.[236] Special-status species observed in the area include seven bird species as well as white-tailed jackrabbit and Northern sagebrush lizard.[237] The same special-status species were observed in the LJIIB area.[238]

B. Mitigation and Monitoring

In the *Final Order on the Application*, the Council made findings regarding the potential impacts of construction and operation of the LJIIA components on habitat within the site boundary.[239] Those findings are incorporated herein by this reference. Construction and operation of the LJIIB components within the LJIIB area would have the same types of potential habitat impacts on wildlife habitat. The *Final Order on the Application* describes site certificate conditions for mitigation of potential adverse impacts to wildlife and wildlife habitat.[240] These conditions would apply as well to the LJIIB area, subject to modifications discussed herein. Among the conditions that address potential impacts to wildlife and wildlife habitat are Conditions 74, 83, 84, 86, 87 and 89, described below.

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[232] In discussions with the certificate holder and the Department during the review of this amendment request, ODFW stated that it would consider a single identified WGS hole as a "cluster" for the purposes of defining the Category 1 area.
[233] *Final Order on the Application* (September 21, 2007), pp. 78-79.
[234] IBR disputes ODFW's guidance on classification of Category 1 WGS habitat. Although IBR "accepted the setback for purposes of the LJIIB amendment," IBR notified the Department that "we do not want to waive our right/ability to challenge ODFW's interpretation for future projects" (email from Sara Parsons, October 14, 2009).
[235] Response to RAI, September 15, 2009, and Response to Additional RAI, October 2, 2009.
[236] The term "special-status species" refers to State-listed threatened, endangered or sensitive species and to federal threatened or endangered species or species of concern.
[237] *Final Order on the Application* (September 21, 2007), pp. 89-91.
[238] Request for Amendment #1, Attachment 7 (Supplemental 2008-2009 Study to the 2005 Leaning Juniper Wildlife Baseline Study), pp. 16-19.
[239] *Final Order on the Application* (September 21, 2007), pp. 91-94.
[240] *Final Order on the Application* (September 21, 2007), pp. 94-102.

Condition 74 incorporates the *Revegetation Plan* and requires the certificate holder to restore vegetation in areas temporarily disturbed during construction. The Council adopts modifications of the *Revegetation Plan* as described in Revision 20 and in Attachment B.

Condition 83 requires the certificate holder to design the transmission line support structures to conform to the avian protection practices recommended by the Avian Power Line Interaction Committee (APLIC). The Council modifies Condition 83 to apply the current APLIC guidance issued in 2006.

Condition 84 allows construction of facility components within the approved micrositing areas but imposes constraints on the location of components. The certificate holder must avoid causing any temporary or permanent impacts on Category 1 habitat and must design the facility to reduce impacts on essential or important habitat to the extent practical. The condition requires exclusion fencing around identified populations of sessile mousetail, a State Candidate plant species discussed above at page 61. The Council modifies Condition 84 to require exclusion fencing around identified populations of Laurent's milk-vetch, a State-listed threatened plant species. The condition requires the certificate holder to design the facility components so that they occupy the minimum area needed for safe operation. The Condition requires preconstruction surveys for threatened or endangered species in any areas that would be affected by construction, if those areas have not previously been surveyed.

Condition 86 requires the certificate holder to avoid or reduce construction activity that could interfere with raptor nesting in areas close to proposed turbine locations. If construction will take place during the sensitive nesting periods for Swainson's hawks, ferruginous hawks or burrowing owls, potential nesting areas near the proposed turbine strings would be surveyed and high-impact construction activities, such as blasting or other major ground disturbance, would be avoided during the nesting period.

Condition 87 requires the certificate holder to conduct wildlife monitoring during operation of the facility as described in the *Wildlife Monitoring and Mitigation Plan* (WMMP). The Council adopts modifications of the WMMP as described in Revision 27 and Attachment A.

Condition 89 requires the certificate holder to protect and enhance a mitigation area as described in the *Habitat Mitigation Plan*. The Council adopts modifications of the *Habitat Mitigation Plan* as described in Revision 29 and in Attachment C. Attachment C describes a 440-acre parcel where habitat protection and enhancement are feasible and sufficient land area is available to accommodate the mitigation area that would be required for the LJF, including the areas that would be added under Amendment #1. The characteristics of the 440-acre parcel are described in the *Final Order on the Application*.[241] The certificate holder has executed an Option for Conservation Easements with the landowner for 280 acres.[242]

Based on the final habitat assessment for LJIIA, shown in Table 6, a mitigation area of 39 acres is needed to mitigate for the habitat impacts of LJIIA. The mitigation area calculation for LJIIA is shown below.

Category 2

[241] *Final Order on the Application* (September 21, 2007), pp. 97-100.
[242] Request for Amendment #1, Section 4, p. 34.

Footprint impacts: 6.28 acres
Temporal impacts to SSA and SSE: 18.19 acres
Mitigation area: (6.28 acres x 2) + (18.19 acres x 0.5) = 21.66 acres

Category 3
Footprint impacts: 13.48 acres
Temporal impacts to SSA: 1.8 acres
Mitigation area: 13.48 acres + (1.8 acres x 0.5) = 14.38 acres

Category 4
Footprint impacts: 1.38 acres
Mitigation area: 2.1 acres

Category 5
Footprint impacts: 1.34 acres
Mitigation area: 1.34 acres

Total mitigation area for LJIIA (rounded to nearest whole acre): 39 acres

For LJIIB a mitigation area of up to 53 acres would be needed, based on the maximum habitat impacts shown in Table 8 and the following calculation:

Category 2
Footprint impacts: 12.16 acres
Temporal impacts to SSA, SSE and WJ: 21.86 acres
Mitigation area: (12.16 acres x 2) + (21.86 acres x 0.5) = 35.26 acres

Category 3
Footprint impacts: 16.07 acres
Temporal impacts to SSA: 0.31 acres
Mitigation area: 16.07 acres + (0.31 acres x 0.5) = 16.23 acres

Category 4
Footprint impacts: 1.44 acres
Mitigation area: 1.44 acres

Total mitigation area for LJIIB (rounded to nearest whole acre): 53 acres

For the LJF as a whole, including both the LJIIA and LJIIB areas, a mitigation area of up to 92 acres would be needed. The actual size of the mitigation area is expected to be smaller, as determined by the footprint and temporal impacts of the final design configuration of LJIIB. Before beginning construction of any phase of the facility, the certificate holder must determine the final size of the mitigation area needed for that phase. The certificate holder must determine the boundaries of the mitigation area in consultation with ODFW and the affected landowners and subject to the approval of the Department. The final mitigation area must contain suitable habitat to achieve the ODFW mitigation goals through appropriate enhancement actions.

Conclusions of Law

For the reasons discussed above and subject to the site certificate conditions described herein, the Council concludes that the LJF would comply with the Council's Fish and Wildlife Habitat Standard if Amendment #1 were approved.

5. Standards Not Applicable to Site Certificate Eligibility

Under ORS 469.501(4), the Council may issue a site certificate without making the findings required by the standards discussed in this section (Structural Standard, Historic, Cultural and Archaeological Resources Standard, Public Services Standard and Waste Minimization Standard).[243] Nevertheless, the Council may impose site certificate conditions based on the requirements of these standards.

(a) Structural Standard

OAR 345-022-0020

(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 site as to Maximum Considered Earthquake Ground Motion identified at International Building Code (2003 Edition) Section 1615 and maximum probable ground motion, taking into account ground failure and amplification for the site specific soil profile under the maximum credible and maximum probable seismic events; and

(b) The applicant can 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 maximum probable ground motion events. As used in this rule "seismic hazard" includes ground shaking, ground failure, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence;

(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 presented by the hazards identified in subsection (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.

* * *

Related Conditions

[243] This statute provides that the Council may not impose certain standards "to approve or deny an application for an energy facility producing power from wind." ORS 469.300 defines an "application" as "a request for approval of a particular site or sites for the construction and operation of an energy facility or the construction and operation of an additional energy facility upon a site for which a certificate has already been issued, filed in accordance with the procedures established pursuant to ORS 469.300 to 469.563, 469.590 to 469.619, 469.930 and 469.992." Although ORS 469.501(4) does not explicitly refer to a request for a site certificate amendment, we assume that the Legislature intended it to apply.

In the *Final Order on the Application*, the Council made findings regarding the seismic, geological and soil hazards in the area of the LJF.[244] Those findings are incorporated herein by this reference. The site certificate includes conditions addressing structural safety (Conditions 12, 13, 14, 49, 50 and 51).

CH2M HILL conducted a preliminary geotechnical and geological reconnaissance study of the LJIIB area, and the amendment request includes a summary report.[245] According to the report, the LJIIB area is underlain by basalt flows, weakly cemented sedimentary rocks and windblown loess. Loess deposits are shallower in the northern portion of the LJIIB area. The report noted potential geological hazards from slope instability and collapse potential of loess but also noted no evidence of recent slope instability, faulting or ground rupture.

Condition 49 requires the certificate holder to perform appropriate site-specific geotechnical investigation before beginning construction and to report the results to the Oregon Department of Geology & Mineral Industries. The Council modifies Condition 49 to require that a site-specific geotechnical investigation for any phase of the facility be performed before beginning construction of that phase. The Council finds that no other changes to the site certificate conditions related to the Structural Standard are needed.

(b) Historic, Cultural and Archaeological Resources

OAR 345-022-0090

(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 ORS 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.

* * *

Related Conditions

In the *Final Order on the Application*, the Council reviewed cultural resource reports on the areas where the LJIIA components would be located. The Council adopted Conditions 45, 46, 47 and 48 to safeguard cultural resources.[246] These conditions would apply as well to the LJIIB area.

[244] *Final Order on the Application* (September 21, 2007), pp. 103-104.
[245] Request for Amendment #1, Attachment 4 (Addendum to Leaning Juniper II Wind Power Facility Geology Analysis: Preliminary Geotechnical and Geological Reconnaissance Summary).
[246] *Final Order on the Application* (September 21, 2007), pp. 105-106.

The certificate holder's contractor, CH2M HILL, conducted cultural resource investigations in the LJIIB area in February, April and May 2009.[247] The study areas included 1,000-foot-wide corridors centered on preliminary alignments of the proposed LJIIB wind turbines and other components and 60-foot-wide County road rights-of-way. CH2M HILL consulted with the Oregon State Historic Preservation Office (SHPO) and with the Oregon Historic Trail Advisory Council.

Baseline field surveys identified six historic sites, six historic isolates, one prehistoric isolate and two standing structures. Only one historic site was considered potentially eligible for listing on the National Register of Historic Places. The certificate holder proposed a modification of Condition 48 to provide a 50-foot "no entry" buffer around the site during construction of LJIIB. The Council modifies Condition 48 as described in Revision 16 at page 100.

Condition 45 requires pre-construction cultural resource surveys in any areas that would be affected by construction of LJIIA that were not surveyed previously in 2004, 2005 and 2006 as described in the site certificate application. The condition ensures that construction of LJIIA would not have any adverse impact on any newly-discovered cultural resources in the area. The Council modifies Condition 45 as described in Revision 15 to specify that it applies to the LJIIA area. The Council adopts Condition 102 as described in Revision 34 to provide similar preconstruction surveys and protection of cultural resources in the LJIIB area.

One presumed alignment of the Oregon Trail route crosses the northern part of the LJIIB area. No intact, visible remnants of the Oregon Trail were found within the site boundary. Nevertheless, the certificate holder proposed a new site certificate condition to ensure avoidance of any intact physical evidence of the Oregon Trail that is discovered during construction. The Council adopts Condition 103 as described in Revision 35 at page 109.

(c) Public Services

OAR 345-022-0110

(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.

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[247] Request for Amendment #1, Section 4, p. 42, and Attachment 8 (Addendum to the Cultural Resources Survey Report for the Leaning Juniper II Wind Power Facility, Gilliam County, Oregon).

Related Conditions

In the *Final Order on the Application*, the Council addressed the potential impacts of construction and operation of the LJF on the ability of public and private providers within the analysis area to provide public services.[248] The Council's previous findings are incorporated herein by this reference. The Council adopted Conditions 36, 37, 38 and 96, which address impacts to public services.

The analysis area that was addressed by the Council in the *Final Order on the Application* addressed communities within 30 miles of the LJIIA site boundary. In May 2007, the Council revised OAR 345-001-0010(57) and reduced the analysis area for impacts to public services to address communities within 10 miles from the site boundary. Accordingly, the proposed amendment does not increase the analysis area even though it enlarges the area within the site boundary.

The proposed amendment does not increase the number of turbines that would be authorized for construction at the LJF, although it may extend the construction period.[249] If Amendment #1 were approved, there would be no significant changes to the impacts of the facility on sewers, sewage treatment or solid waste management during construction or operation of the LJF. The maximum amount of water used during construction and operation would be unchanged.[250] Approval of Amendment #1 is not expected to have significantly different effects on housing, police and fire protection, health care or schools, compared to the anticipated effects discussed in the *Final Order on the Application*. The amendment request does not significantly increase traffic volumes on nearby roads during construction and operation compared to the anticipated traffic volumes during construction and operation of the LJF as previously approved by the Council.[251]

The certificate holder proposes a modification of Condition 37. Subsection (e) of the condition requires the certificate holder to maintain at least one travel lane at all times so that roads will not be closed to traffic because of construction vehicles. The certificate holder believes that it might not be possible to maintain one open lane of travel at all times and in all locations (especially at turns) when turbine component trucks are traveling to the site.[252] The certificate holder requests that the subsection be modified to add the phrase "to the extent reasonably possible." The Council modifies Condition 37 as described in Revision 11 at page 97. The modified language of the Condition would require the certificate holder to maintain at least one open lane of travel on public roads except in instances where this is impractical due to safety considerations or other reasonable considerations.

(d) Waste Minimization

OAR 345-022-0120

(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:

[248] *Final Order on the Application* (September 21, 2007), pp. 106-109.
[249] Request for Amendment #1, Section 4, p. 48.
[250] Request for Amendment #1, Section 4, p. 46, and Response to RAI, Summary of Modifications, p. 2.
[251] Request for Amendment #1, Section 4, p. 48.
[252] Request for Amendment #1, Section 4, p. 49.

(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.

Related Conditions

In the *Final Order on the Application*, the Council made findings and adopted site certificate conditions regarding management of solid waste and wastewater likely to be generated during the construction and operation of the LJF.[253] The Council's previous findings are incorporated herein by this reference. The Council adopted Conditions 68, 69, 73, 77, 96, 98, 99 and 100 to address waste management concerns. Solid waste and wastewater generated by construction and operation of the LJF including the LJIIB components are likely to be similar to that generated by construction of the LJIIA components alone because the amendment would not increase the number of turbines authorized for construction for the facility as a whole. The Council finds that no changes to the site certificate conditions related to the Waste Minimization Standard are needed.

V. OTHER APPLICABLE REGULATORY REQUIREMENTS: FINDINGS AND CONCLUSIONS

1. Requirements under Council Jurisdiction

Under ORS 469.503(3) and under the Council's General Standard of Review (OAR 345-022-0000), the Council must determine that a 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." Other Oregon statutes and administrative rules that are applicable to the changes requested in Amendment #1 include the Department of Environmental Quality (DEQ) noise control regulations, the regulations adopted by the Department of State Lands (DSL) for removal or fill of material affecting waters of the state, the Water Resources Department's (WRD) regulations for appropriating ground water and the Council's statutory authority to consider protection of public health and safety.

(a) Noise Control Regulations

The applicable noise control regulations are as follows:

[253] *Final Order on the Application* (September 21, 2007), pp. 109-112.

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

(1) Standards and Regulations:

** * **

(b) New Noise Sources:

** * **

(B) New Sources Located on Previously Unused Site:

(i) No person owning or controlling a new industrial or commercial noise source located on a previously unused industrial or commercial site shall cause or permit the operation of that noise source if the noise levels generated or indirectly caused by that noise source increase the ambient statistical noise levels, L10 or L50, by more than 10 dBA in any one hour, or exceed the levels specified in Table 8, as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule, except as specified in subparagraph (1)(b)(B)(iii).

(ii) The ambient statistical noise level of a new industrial or commercial noise source on a previously unused industrial or commercial site shall include all noises generated or indirectly caused by or attributable to that source including all of its related activities. Sources exempted from the requirements of section (1) of this rule, which are identified in subsections (5)(b) - (f), (j), and (k) of this rule, shall not be excluded from this ambient measurement.

(iii) For noise levels generated or caused by a wind energy facility:

(I) The increase in ambient statistical noise levels is based on an assumed background L50 ambient noise level of 26 dBA or the actual ambient background level. The person owning the wind energy facility may conduct measurements to determine the actual ambient L10 and L50 background level.

(II) The "actual ambient background level" is the measured noise level at the appropriate measurement point as specified in subsection (3)(b) of this rule using generally accepted noise engineering measurement practices. Background noise measurements shall be obtained at the appropriate measurement point, synchronized with windspeed measurements of hub height conditions at the nearest wind turbine location. "Actual ambient background level" does not include noise generated or caused by the wind energy facility.

(III) The noise levels from a wind energy facility may increase the ambient statistical noise levels L10 and L50 by more than 10 dBA (but not above the limits specified in Table 8), if the person who owns the noise sensitive property executes a legally effective easement or real covenant that benefits the property on which the wind energy facility is located. The easement or covenant must authorize the wind energy facility to increase the ambient statistical noise levels, L10 or L50 on the sensitive property by more than 10 dBA at the appropriate measurement point.

(IV) For purposes of determining whether a proposed wind energy facility would satisfy the ambient noise standard where a landowner has not waived the standard, noise levels at the appropriate measurement point are predicted assuming that all of the proposed wind facility's turbines are operating between

cut-in speed and the wind speed corresponding to the maximum sound power level established by IEC 61400-11 (version 2002-12). These predictions must be compared to the highest of either the assumed ambient noise level of 26 dBA or to the actual ambient background L10 and L50 noise level, if measured. The facility complies with the noise ambient background standard if this comparison shows that the increase in noise is not more than 10 dBA over this entire range of wind speeds.

(V) For purposes of determining whether an operating wind energy facility complies with the ambient noise standard where a landowner has not waived the standard, noise levels at the appropriate measurement point are measured when the facility's nearest wind turbine is operating over the entire range of wind speeds between cut-in speed and the windspeed corresponding to the maximum sound power level and no turbine that could contribute to the noise level is disabled. The facility complies with the noise ambient background standard if the increase in noise over either the assumed ambient noise level of 26 dBA or to the actual ambient background L10 and L50 noise level, if measured, is not more than 10 dBA over this entire range of wind speeds.

(VI) For purposes of determining whether a proposed wind energy facility would satisfy the Table 8 standards, noise levels at the appropriate measurement point are predicted by using the turbine's maximum sound power level following procedures established by IEC 61400-11 (version 2002-12), and assuming that all of the proposed wind facility's turbines are operating at the maximum sound power level.

(VII) For purposes of determining whether an operating wind energy facility satisfies the Table 8 standards, noise generated by the energy facility is measured at the appropriate measurement point when the facility's nearest wind turbine is operating at the windspeed corresponding to the maximum sound power level and no turbine that could contribute to the noise level is disabled.

* * *

Findings of Fact

In the *Final Order on the Application*, the Council concluded that the LJF would comply with the applicable noise control regulations.[254] Amendment #1 would change the site boundary of the LJF and authorize the construction of wind turbines and related components in the LJIIB area. The amendment request does not seek to change the maximum number of turbines, the maximum generating capacity or the range of turbine types or sizes previously authorized under the site certificate. The Council must decide whether the noise generated by the operation of the LJF within the expanded site boundary would comply with the noise control regulations.[255] In Oregon, noise is subject to regulation "to provide protection of the health, safety and welfare of Oregon citizens from the hazards and deterioration of the quality of life imposed by excessive noise emissions."[256] The regulations impose different limits on

[254] *Final Order on the Application* (September 21, 2007), pp. 112-117.
[255] OAR 340-035-0035(5)(g) exempts noise generated by construction activities.
[256] ORS 467.010.

new noise sources constructed on a "previously unused industrial or commercial site" compared to the limits imposed on new sources constructed on a "previously used industrial or commercial site." A site is considered a "previously unused industrial or commercial site" if the site has not been used by any industrial or commercial noise source at any time during the 20 years preceding the construction of a new source on the site.[257] The Council finds that the LJIIB area is a "previously unused industrial or commercial site." The applicable noise standard is OAR 340-035-0035(1)(b)(B), which applies to a new industrial or commercial noise source located on a previously unused site.[258]

Under the regulations, the noise from the facility must comply with two tests. The noise must not exceed the maximum allowable limit of 50 dBA (the maximum allowable test) and must not increase ambient noise levels by more then 10 dBA at any noise sensitive property (the ambient degradation test).[259] OAR 340-035-0035(1)(b)(B)(iii)(III) relieves the certificate holder from having to show compliance with the ambient degradation test "if the person who owns the noise sensitive property executes a legally effective easement or real covenant that benefits the property on which the wind energy facility is located" (a "noise waiver").

The certificate holder provided information about compliance with the noise regulations in the Request for Amendment #1, Attachment 10, and in response to the Department's requests for additional information.[260] CH2M HILL conducted a noise analysis for the certificate holder based on a proposed layout of 43 Suzlon 2.1-MW wind turbines in the LJIIA area and, for the LJIIB area, both a minimum turbine layout (62 Vestas 3.0-MW wind turbines) and a maximum turbine layout (90 GE 1.5-MW turbines). The certificate holder desires flexibility as to the final turbine selection and turbine locations within the micrositing areas. Without knowing the turbine type, the number of turbines in each string, the spacing between turbines and their precise locations, the analysis necessary to determine whether the facility, as built, will comply with the noise regulations cannot be completed. The procedures for conducting the analysis are described in OAR 340-035-0035(1)(b)(B)(iii)(IV) and (VI).

For the purpose of analyzing whether the LJF could be designed to comply with the noise control regulations if Amendment #1 were approved, CH2M HILL increased the

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[257] OAR 340-035-0015(47) defines "previously unused industrial or commercial site." Agricultural activities are specifically excluded from this definition.

[258] OAR 340-035-0015(33) defines a "new industrial or commercial noise source" as "any industrial or commercial noise source for which installation or construction was commenced after January 1, 1975 on a site not previously occupied by the industrial or commercial noise source in question."

[259] The "maximum allowable" limit is 50 dBA based on Table 8, which is referenced in the DEQ regulations. The Table 8 limits are shown in the *Final Order on the Application* (September 21, 2007), p. 115. In this discussion, "dBA" refers to sound levels in decibels as measured on a sound level meter using the A-weighted filter network, which corresponds closely to the frequency response of the human ear. The regulation applies the test "as measured at an appropriate measurement point." The "appropriate measurement point," as defined by OAR 340-035-0015(3), is "25 feet (7.6 meters) toward the noise source from that point on the noise sensitive building nearest the noise source" or "that point on the noise sensitive property line nearest the noise source," whichever is farther from the source. OAR 340-035-0015(38) defines "noise sensitive property" as "real property normally used for sleeping, or normally used as schools, churches, hospitals, or public libraries." Private residences are the only "noise sensitive properties" potentially affected by the LJF. We refer to these as the "noise sensitive receivers."

[260] Response to RAI (table), pp. 4-5, and Attachment D.

reported maximum sound power levels of the reference turbine types by 2 dBA to account for the manufacturers' typical warranty information, which indicates an uncertainty band of +\- 2 dBA in the stated maximum sound power level.[261] Accordingly, CH2M HILL assumed that the 1.5-MW and 2.1-MW turbines would have a maximum sound power level of 106 dBA and the 3.0-MW turbines would have a maximum sound power level of 112 dBA.[262] For predicting the noise that would be generated by substation transformers, CH2M HILL assumed an overall maximum sound power level of 107 dBA.[263] CH2M HILL predicted noise levels using the CADNA/A computer model by Datakustik GmbH of Munich, Germany. The program uses sound propagation factors adopted from ISO 9613 (ISO 1993) and VDI 2714 (VDI, 1988). The analysis assumed atmospheric absorption for conditions of 10° C and 70 percent relative humidity, and it included ground attenuation predicted using the "Alternative Method" specified in the ISO standard.

To support a Council finding that the facility could be built in a way that complies with the applicable noise regulations, the certificate holder provided two "noise-compliant" layouts. In both layouts, there are 43 2.1-MW turbines in the LJIIA area, but one layout includes 90 1.5-MW turbines in the LJIIB area and the other layout includes 62 3.0-MW turbines in the LJIIB area. CH2M HILL's analysis included noise contour maps based on the two noise-compliant layouts.[264]

The noise contour maps show that there would be no noise-sensitive receivers (residences) inside the 50-dBA contour lines. That is, noise levels would not exceed 50 dBA at any residence under either layout.[265] Therefore, these layouts would comply with the "maximum allowable" test.

The noise contour maps show that there would be some noise-sensitive receivers inside the 36 dBA contour lines and other residences near, but just outside, the lines. In the maximum turbine layout (90 1.5-MW turbines in the LJIIB area), there would be nine receivers where the predicted noise levels would exceed the 36-dBA ambient degradation limit. Table 9 below lists all receivers where the predicted noise level is 35 dBA or above.[266] Receivers where the predicted noise levels would exceed the ambient degradation limit are shown in boldface.

Table 9: Predicted Noise Levels (90 1.5-MW LJIIB Turbines)

Receiver	Predicted Maximum Hourly L_{50} Noise Level (dBA)
R001	**37**
R002	35
R003	35

[261] The manufacturers' warranted sound power levels are 104 dBA for the GE 1.5-MW turbines, 104 dBA for the Suzlon 2.1-MW turbines and 110 dBA for the Vestas 3.0-MW turbines.
[262] Leaning Juniper II Wind Power Facility Site Certificate Application, Exhibit X, Table X-10 and Response to RAI, Attachment E.
[263] Leaning Juniper II Wind Power Facility Site Certificate Application, Exhibit X, Table X-10.
[264] Response to RAI, Attachment D, Figures 1 and 2.
[265] Response to RAI, Attachment D, Figures 1 and 2.
[266] Based on the Request for Amendment #1, Attachment 10, Table 2, and additional data provided by the certificate holder.

R004	35
R005	**39**
R006	**43**
R008	**38**
R009	**37**
R011	35
R012	36
R019	35
R021	35
R084	35
R268	35
R269	**42**
R270	35
R274	**50**
R277	**45**
R279	35
R282	36
R283	35
R284	35
R286	**42**

In the minimum turbine layout (62 3.0-MW turbines in the LJIIB area), there would be 18 receivers where the predicted noise levels would exceed 36 dBA. These residences are shown in boldface in Table 10 below.[267] Under either layout, the certificate holder would need to obtain noise waivers from the owners of the residences where the ambient noise degradation limit would be exceeded or would need to redesign the layout to reduce the noise levels at residences where no waiver could be obtained.

Table 10: Predicted Noise Levels (62 3.0-MW LJIIB Turbines)

Receiver	**Predicted Maximum Hourly L_{50} Noise Level** (dBA)
R001	**37**
R002	36
R003	36
R004	36
R005	**43**
R006	**47**
R008	**38**
R009	**37**

[267] Based on the Request for Amendment #1, Attachment 10, Table 3, and additional data provided by the certificate holder.

R011	35
R012	36
R268	**40**
R019	35
R021	35
R084	35
R269	**46**
R270	**40**
R271	**38**
R274	**48**
R277	**47**
R278	36
R279	**39**
R280	**39**
R281	**39**
R282	**41**
R283	**40**
R284	**40**
R286	**46**
R288	35

Condition 94 requires the certificate holder to demonstrate to the satisfaction of the Department that the facility as built according to the final design layout would comply with the applicable noise control regulations. The condition requires the certificate holder to provide information about the turbine type selected for construction and about the final design location for each turbine. The condition requires the certificate holder to provide a noise analysis to demonstrate to the satisfaction of the Department that the final design of the facility would comply with the applicable noise control regulations. The Council modifies Condition 94 to require that a noise analysis applicable to any phase of the facility be performed before beginning construction of that phase.

Condition 93 requires the certificate holder to confine the noisiest construction activities to the daylight hours and to establish a noise complaint response system to address any noise complaints during construction.

Under OAR 340-035-0035(4)(a), DEQ has authority to require the owner of an operating noise source to monitor and record the statistical noise levels upon written notification. In the event of a complaint regarding noise levels during operation of the LJF, the Council has the authority to act in the place of DEQ to enforce this provision to verify that the certificate holder is operating the facility in compliance with the noise control regulations. Under Condition 2, the certificate holder is required to operate the facility in accordance with all applicable state laws and administrative rules. Condition 95 requires the certificate holder to maintain a noise complaint response system during facility operation and to notify the

Department of any complaints received about noise from the facility as well as the actions taken to address them.

Conclusions of Law

For the reasons discussed above and subject to the site certificate conditions described herein, the Council concludes that the LJF would comply with the applicable noise control regulations in OAR 340-035-0035 if Amendment #1 were approved.

(b) Removal-Fill Law

The Oregon Removal-Fill Law (ORS 196.795 through 196.990) and regulations (OAR 141-085-0500 through 141-085-0785) adopted by the Department of State Lands (DSL) require a permit if 50 cubic yards or more of material is removed, filled or altered within any "waters of the state" at the proposed site.[268] The Council must determine whether a permit is needed and should be issued. The U.S. Army Corps of Engineers administers Section 404 of the Clean Water Act, which regulates the discharge of fill into waters of the United States (including wetlands), and Section 10 of the Rivers and Harbors Appropriation Act of 1899, which regulates placement of fill in navigable waters. Federal law may require a Nationwide or Individual fill permit for the proposed facility if waters of the United States are affected. A single application form (a Joint Permit Application Form) is used to apply for both the State and federal permits.

Findings of Fact

In the *Final Order on the Application*, the Council found that a Removal/Fill Permit would be needed for construction of the LJF and approved the issuance of the permit, subject to the requirements of Condition 72.[269] A draft permit, including the permit conditions recommended by DSL, was attached to the *Final Order* as Attachment F.

The applicant's contractor, CH2M HILL, conducted field investigation for wetlands and waters in the LJIIB area in April 2009.[270] The study areas included 1,000-foot-wide corridors centered on preliminary alignments of the proposed LJIIB wind turbines and other components. Additional areas studied included the 60-foot road rights-of-way along Berthold Road, Montague Lane and Weatherford Road and the transmission route easement area through the existing Leaning Juniper I Wind Project owned by PacifiCorp. CH2M HILL prepared a revision to the wetland and waters delineation report, based on the revised configuration of the LJIIB components.[271]

CH2M HILL identified one potentially State jurisdictional wetland (W8) in the study area and six ephemeral stream channels in the LJIIB area.[272] DSL reviewed the delineation

[268] ORS 196.800(14) defines "Waters of this state." The term includes wetlands and certain other water bodies.
[269] *Final Order on the Application* (September 21, 2007), p. 126.
[270] Request for Amendment #1, Attachment 11 ("Addendum to Leaning Juniper II Wind Power Facility Wetlands and Waters Delineation Report, Gilliam County Oregon" (June 8, 2009)).
[271] The revised configuration is shown in revised Figures 2 and 3 (Response to RAI, Attachment C). CH2M HILL's revised delineation report is titled "Addendum to Leaning Juniper II Wind Power Facility Wetlands and Waters Delineation Report, Gilliam County Oregon (September 24, 2009)" and was received by the Department as an attachment to a letter from Joel Shaich, CH2M HILL, September 28, 2009.
[272] Request for Amendment #1, Attachment 11 ("Addendum to Leaning Juniper II Wind Power Facility Wetlands and Waters Delineation Report, Gilliam County Oregon" (June 8, 2009)), p. 8.

report and determined that the identified wetland is jurisdictional and subject to the Removal/Fill law.[273] DSL determined that the six ephemeral streams (waterways) in the LJIIB area are not jurisdictional, because they do not meet the definition of an intermittent stream as defined in OAR 141-085-0510(41). One waterway (S27) previously identified in the LJIIA area is jurisdictional. The Council addressed S27 in the *Final Order on the Application* and determined that a Removal/Fill Permit is required for a proposed culvert and crossing of the waterway.[274]

The certificate holder proposes a modification of Condition 72 to require avoidance of any disturbance of the wetland area identified as W8. The Council adopts this modification as described in Revision 19. Construction of LJIIB access roads and underground collector lines and improvements to Montague Lane could result in impacts to each of the six identified non-jurisdictional stream channels. Some of the potential impacts to ephemeral streams were eliminated under the revised layout, but the remaining impacts include three road crossings and two underground collector line crossings.[275]

Under Condition 72, the certificate holder is required to conduct a pre-construction field investigation based on the final design layout of the facility if construction would occur in any locations not previously investigated. The condition requires that there be no impact on any jurisdictional water identified in the pre-construction investigation.[276]

Conclusions of Law

For the reasons discussed above, the Council concludes that a Removal/Fill Permit would be required for construction of the LJIIA components, as discussed in the *Final Order on the Application*. The Council concludes that a new or amended Removal/Fill permit would not be required for construction of the LJIIB components if Amendment #1 were approved.

(c) Ground Water Act

Through the provisions of the Ground Water Act of 1955, ORS 537.505 to ORS 537.796, and OAR Chapter 690, the Oregon Water Resources Commission administers the rights of appropriation and use of the ground water resources of the state. Under OAR 345-022-0000(1), the Council must determine whether the LJF, including the expansion proposed by Amendment #1, complies with these statutes and administrative rules.

Findings of Fact

In the *Final Order on the Application*, the Council found the total amount of water that would be needed for facility construction (approximately 35 million gallons) could be obtained from the City of Arlington.[277] This finding demonstrates that sufficient water is available from a source for which there is an existing water right under which construction water could be provided to the facility. The finding does not require that the certificate holder

[273] Letter from Peter Ryan, DSL, September 29, 2009 (Response to Additional RAI, Attachment 5).
[274] *Final Order on the Application* (September 21, 2007), p. 126.
[275] Response to RAI, Summary of Modifications, p. 2.
[276] CH2M HILL conducted a pre-construction survey of the LJIIA area and identified one potentially jurisdictional wetland (W7) ("Preconstruction Survey Addendum to the Wetlands and Waters Delineation Report for the Leaning Juniper II Wind Power Facility--LJIIA, Gilliam County, Oregon" (September 24, 2009)). Construction of LJIIA based on the final design configuration would have no impact on the wetland.
[277] *Final Order on the Application* (September 21, 2007), p. 127.

obtain water exclusively from that source.[278] The Council found that, during operation, water would be used at the O&M buildings primarily for incidental uses and, if necessary, for turbine blade washing. Water for operational uses would be supplied from one or more on-site wells and would not exceed 5,000 gallons per day (Condition 76). ORS 537.545(1)(f) provides that a new water right is not required for industrial and commercial uses of up to 5,000 gallons per day.[279]

In the Request for Amendment #1, the certificate holder estimates that the total amount of water needed for construction of LJIIA would be up to 17 million gallons and that the total amount of water needed for construction of LJIIB would be up to 17.7 million gallons.[280] The amendment would not authorize construction of any additional O&M buildings or water wells, and water use during facility operations would not exceed 5,000 gallons per day. The Council finds that approval of the amendment request would not increase the maximum amount of water expected to be used during construction and operation of the LJF.

Conclusions of Law

Based on the findings discussed above and subject to the site certificate conditions discussed herein, the Council concludes that the LJF would comply with applicable regulations pertaining to appropriation and use of water resources if Amendment #1 were approved.

(d) State Highway Access and Crossings

Under OAR Chapter 734, Division 55, the Oregon Department of Transportation (ODOT) regulates the location, installation, construction, maintenance and use of utility structures, including buried cables, within State Highway right-of-way. Under Division 51, ODOT regulates highway approaches and access control.

Findings of Fact

In the Request for Amendment #1, the certificate holder explains that State Highway approach permits might be required by ODOT for Weatherford Road, Montague Lane and two proposed new private access roads.[281] In addition, multiple State Highway utility crossings might be needed for overhead as well as underground transmission line or collector line crossings of State Highway 19.

The Department asked the certificate holder to contact ODOT to obtain written confirmation regarding which permits would be needed, for what purposes and at what locations as well as confirmation that any permits issued by ODOT would be subject only to conditions limited by OAR Chapter 734, Divisions 51 and 55. The certificate holder contacted ODOT and reported to the Department that ODOT staff requested a site visit to confirm specific permit requirements for LJIIB.[282] ODOT staff visited the site on October 7.[283] The

[278] Other sources of water might be used if appropriate water rights exist, consistent with Condition 3.
[279] SB 788 (2009) amended ORS 537.545 to require the owner of land on which an exempt well is drilled to provide a map to WRD showing the exact location of the well and to file the exempt water use with WRD for recording with submittal of a fee.
[280] Request for Amendment #1, Section 4, pp. 46-47, and Response to RAI, Summary of Modifications, p. 2.
[281] Request for Amendment #1, Section 4, p. 57.
[282] Response to RAI (table), p. 18 (response to Request #15).

certificate holder reported that ODOT staff had given verbal confirmation that any permits issued would be subject only to conditions limited by OAR Chapter 734, Divisions 51 and 55. The Department understands, based on experience, that ODOT staff cannot determine specific permit conditions without reviewing detailed design drawings, which the certificate holder cannot provide until final facility design decisions have been made.

The Council finds that ODOT permits for utility crossings and State Highway approaches would be needed for components that would be added to the facility under Amendment #1. The Council finds that the permits should be issued, subject to conditions imposed by ODOT but limited by OAR Chapter 734, Divisions 51 and 55. The Council adopts Condition 104 to address these requirements, as discussed below in Revision 36 at page 110.

Conclusions of Law

Based on the findings discussed above and subject to the site certificate conditions discussed herein, the Council concludes that the LJF would comply with requirements for State Highway access and crossings if Amendment #1 were approved.

(e) Public Health and Safety

Under ORS 469.310, the Council is charged with ensuring that the "siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety...." State law further provides that "the site certificate shall contain conditions for the protection of the public health and safety…." ORS 469.401(2).

Findings of Fact

We discuss the Council's Public Health and Safety Standards for Wind Energy Facilities above at page 55. In this section below, we discuss the issues of fire protection, magnetic fields and coordination with the Oregon Public Utility Commission.

A. Fire Protection

In the *Final Order on the Application*, the Council made findings and adopted conditions regarding fire prevention and response for the LJF.[284] The fire risks for the LJIIB area are similar to the risks previously considered by the Council for the LJIIA area. Applicable conditions include Conditions 58, 60, 61, 62, 63, 64, 65 and 66.

B. Magnetic Fields

Electric transmission lines create both electric and magnetic fields. The electric fields associated with the proposed transmission lines are addressed above at page 59.

In the *Final Order on the Application*, the Council concluded that there would not be a significant risk to public health and safety from the magnetic field generated by the underground or aboveground 34.5-kV collector system.[285] Because the 230-kV interconnection line for LJIIA would be entirely within a fenced area and inaccessible to the

[283] Email from Patrick Smith, ODOT, forwarded by Jeffrey Durocher, October 12, 2009.
[284] *Final Order on the Application* (September 21, 2007), pp. 128-129.
[285] *Final Order on the Application* (September 21, 2007), p. 130.

public (and because the adjacent facility substation and Leaning Juniper I substation would obscure any electromagnetic fields generated by the 230-kV line), the Council found that the magnetic field generated by the interconnection line would not result in any significant risk to public health and safety.[286]

In the Request for Amendment #1, the certificate holder analyzed the electric and magnetic fields associated with the two transmission options proposed to carry power generated by the LJIIB turbines to the LJIIA substation located near the Jones Canyon Switching Station. One option would consist of two aboveground double-circuit 34.5-kV lines running parallel to each other from the LJIIB area to the LJIIA substation. The other option would consist of a 230-kV aboveground transmission line to carry the power from a new LJIIB substation to the LJIIA substation.

The strength of a magnetic field fluctuates hourly and daily with changes in the amount of current in the transmission line caused by the electrical load. Magnetic field strength is measured in units of milligauss (mG). Using a computer-modeling analysis, the certificate holder calculated the magnetic fields produced by the two transmission options. For the parallel 34.5-kV line option, the calculated maximum magnetic field strength is 45.31 mG, and for the 230-kV line option, the calculated maximum magnetic field strength is 94.37 mG.[287] There are no residences within 200 feet of either side of the centerline of the proposed routes for either transmission option.

Due to the absence of scientific consensus regarding the possible health effects of exposure to magnetic fields, there is no Oregon standard limiting the allowable magnetic field strength associated with transmission lines.[288] The Council has encouraged applicants to practice "prudent avoidance" and to implement low-cost ways to reduce or manage public exposure to magnetic fields from transmission lines under the Council's jurisdiction. Condition 81 addresses prudent avoidance measures to reduce human exposure to magnetic fields.

C. Coordination with the PUC

The Oregon Public Utility Commission Safety and Reliability Section (PUC) has requested that the Council ensure that certificate holders coordinate with PUC staff on the design and specifications of electrical transmission lines and natural gas pipelines. The PUC has explained that others in the past have made inadvertent, but costly, mistakes in the design and specifications of power lines and pipelines that could have easily been corrected early if the developer had consulted with the PUC staff responsible for the safety codes and standards. Condition 79 requires the certificate holder to coordinate the design of electric transmission lines with the PUC.

[286] *Final Order on the Application* (September 21, 2007), p. 130.
[287] Request for Amendment #1, Attachment 9 (Addendum to Leaning Juniper II Wind Power Facility Exhibit AA Electromagnetic Field Analysis), p. 6 and p. 9.
[288] A recent discussion of magnetic field effects is included in the *Final Order on the Application for the Shepherds Flat Wind Farm* (July 25, 2008), pp. 139-141.

Conclusions of Law

Based on the findings discussed above and subject to the site certificate conditions discussed herein, the Council concludes that the LJF would comply with requirements to protect public health and safety if Amendment #1 were approved.

2. Requirements That Are Not Under Council Jurisdiction

(a) Federally-Delegated Programs

Under ORS 469.503(3), the Council does not have jurisdiction for determining compliance with statutes and rules for which the federal government has delegated the decision on compliance to a state agency other than the Council. Nevertheless, the Council may rely on the determinations of compliance and the conditions in federally-delegated permits issued by these state agencies in deciding whether the proposed facility meets other standards and requirements under its jurisdiction.

As required under Condition 70, the certificate holder would conduct all construction work in compliance with an Erosion and Sediment Control Plan satisfactory to the Oregon Department of Environmental Quality and as required under the federally-delegated National Pollutant Discharge Elimination System Storm Water Discharge General Permit #1200-C.

(b) Requirements That Do Not Relate to Siting

Under ORS 469.401(4), the Council does not have authority to preempt the jurisdiction of any state agency or local government over matters that are not included in and governed by the site certificate or amended site certificate. Such matters include design-specific construction or operating standards and practices that do not relate to siting. Nevertheless, the Council may rely on the determinations of compliance and the conditions in the permits issued by state agencies and local governments in deciding whether the facility meets other standards and requirements under its jurisdiction.

VI. GENERAL APPLICATION OF CONDITIONS

The conditions referenced in this order include conditions that are specifically required by OAR 345-027-0020 (Mandatory Conditions in Site Certificates), OAR 345-027-0023 (Site Specific Conditions), OAR 345-027-0028 (Monitoring Conditions) or OAR Chapter 345, Division 26 (Construction and Operation Rules for Facilities). The conditions referenced in this order include conditions based on representations in the request for amendment and the supporting record. The Council deems these representations to be binding commitments made by the certificate holder. This order also includes conditions that the Council finds necessary to ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, or to protect public health and safety.

In addition to all other conditions referenced or included in this order, 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 amended site certificate is executed.[289] Under ORS 469.401(2), upon a clear showing of a significant threat to the

[289] With regard to land use, the applicable local criteria are those in effect on the date the certificate holder submitted the request for amendment.

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 that all agents and contractors comply with all provisions of the site certificate.

VII. GENERAL CONCLUSION

The proposed amendment would expand the site boundary of the LJF. The amendment would add approximately 7,962 acres to the site and would authorize the construction and operation of up to 84 wind turbines and related infrastructure within the new area. The amendment would extend the deadline for completion of facility construction to September 24, 2013. The Council adopts revisions to the site certificate as described in the section that follows.

Based on the findings and conclusions discussed above regarding the proposed amendment, the Council makes the following findings:

1. The proposed Amendment #1 complies with the requirements of the Oregon Energy Facility Siting statutes, ORS 469.300 to ORS 469.570 and 469.590 to 469.619.
2. The proposed Amendment #1 complies with the applicable standards adopted by the Council pursuant to ORS 469.501.
3. The proposed Amendment #1 complies with all other Oregon statutes and administrative rules applicable to the amendment of the site certificate for the LJF that are within the Council's jurisdiction.

Accordingly, the Council finds that the facility complies with the General Standard of Review (OAR 345-022-0000). The Council concludes, based on a preponderance of the evidence in the record, that the site certificate may be amended as requested by the certificate holder, subject to the revisions recommended by the Department and set forth below.

1. The Department's Recommended Revisions

New text proposed by the Department is shown with single underline. New text proposed by the certificate holder with concurrence by the Department is shown with double underline. Text proposed by the certificate holder but not recommended by the Department is not shown.[290] Deletions are shown with a strikethrough. The parenthetical references in square brackets follow standard practice and provide a historical reference of when changes were made to the site certificate. Page references are to the *Site Certificate for the Leaning Juniper II Wind Power Facility* (September 21, 2007).

[290] All changes to the site certificate proposed by the certificate holder are shown in a red-line markup of the Site Certificate included in the Request for Amendment #1 as Attachment 2.

Revision 1

Page 1, lines 6-11:

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, and (b) the Council's Final Order on Amendment #1~~incorporated herein by this reference~~. 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 #1, (3) the Final Order on the Application and (~~3~~4) the record of the proceedings that led to the Final Orders on the Application and Amendment #1. [Amendment #1]

Revision 1 Explanation

This revision adds a reference in the site certificate to the findings of fact, reasoning and conclusions in support of the present amendment. The revision establishes the order of priority in which the underlying documents should be considered in resolving any ambiguity.

Revision 2

Page 1, lines 22-28:

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 the facility~~. 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 (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). [Amendment #1]

Revision 2 Explanation

This revision adds the matters addressed in the Final Order on Amendment #1 to the scope of matters addressed in the site certificate.

Revision 3

Page 2, lines 20-25:

The energy facility is an electric power generating plant with an average electric generating capacity of approximately ~~93~~92 megawatts and a peak generating capacity of not more than ~~279~~ 277 megawatts that produces power from wind energy. The facility consists of not more than ~~133~~127 wind turbines. The maximum peak generating capacity of each turbine is not more than 3.0 megawatts. The energy facility is described further in the Final Orders on the Application and Amendment #1~~on the facility~~. [Amendment #1]

Revision 3 Explanation

This revision incorporates the facility description contained in the *Final Order on Amendment #1*. The revision reduces the maximum number of wind turbines from 133 to 127 and reduces the peak generating capacity to "not more than 277 megawatts." As described at page 6, the peak generating capacity of the facility would not exceed 276.3 MW (an average generating capacity of 92.1 MW).

Revision 4

Page 3, lines 7-11:

The facility includes a substation located ~~adjacent to~~near the Bonneville Power Administration (BPA) Jones Canyon Switching Station. An aboveground transmission line less than 400 feet in length 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. The facility may include a second substation located within the area added to the facility by Amendment #1 (LJIIB) and a 230-kV transmission line to carry power from the second substation to the facility substation located near the Jones Canyon Switching Station. Alternatively, the facility may include two parallel double-circuit 34.5-kV lines to carry power from the LJIIB area to the facility substation. [Amendment #1]

Revision 4 Explanation

This revision adds a description of the optional second substation in the LJIIB area and a description of the optional 230-kV transmission line to carry power from the LJIIB area to the previously-approved facility substation located near the Jones Canyon Switching Station. As an alternative to the second substation and 230-kV transmission line, the revision allows for parallel 34.5-kV transmission lines to carry power from the LJIIB area to the previously-approved facility substation.

Revision 5

Page 3, lines 29-31:

The facility is located southwest of Arlington, in Gilliam County, Oregon. The site is in Townships 1, 2 and 3 North and Ranges 20, 21 and ~~21~~22 East. The facility is located on land subject to lease agreements with landowners. [Amendment #1]

Revision 5 Explanation

This revision modifies the location description to include the area added to the facility by Amendment #1.

Revision 6

Page 9, lines 34-38:

25. The certificate holder shall begin construction of the facility ~~within three years after the effective date of the site certificate~~ 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]

Revision 6 Explanation

The original site certificate became effective upon execution by the Council and by the applicant (OAR 345-015-0085(8)), which was September 24, 2007. This revision modifies Condition 25 to specify a date certain as the deadline for beginning construction. The revision does not change the deadline previously adopted by the Council.

Revision 7

Page 9, lines 39-40, and page 10, lines 1-7:

26. The certificate holder shall complete construction of the facility ~~within four years after the effective date of the site certificate~~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]

Revision 7 Explanation

This revision modifies Condition 26 to specify a date certain as the deadline for completing construction of the facility (including LJIIA and LJIIB components). The revision extends the construction completion deadline by two years.

Revision 8

Page 10, lines 8-19:

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 ~~133~~127 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 ~~279~~277 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]

Revision 8 Explanation

This revision modifies Condition 27 according to the certificate holder's statements regarding the total number of turbines planned for construction in the LJIIA area (43 2.1-MW turbines) and the proposed maximum number of turbines (84) and maximum peak generating capacity (186 MW) in the LJIIB area.

Revision 9

Page 10, lines 27-45, and page 11, lines 1-17:

30. Before beginning construction of the LJIIA components as described in the *Final Order on Amendment #1*, 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 ~~facility~~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 ~~gross cost~~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 ~~gross cost~~Subtotal (i) for the adjusted performance bond amount to determine the adjusted Gross Cost.

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

(~~iii~~iv) Add the adjusted ~~g~~Gross ~~c~~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 #1]

Revision 9 Explanation

This revision modifies Condition 30 to address financial assurance only for the LJIIA components of the facility. The amount of $8.847 million that is shown in the first paragraph is the amount shown on Table 2 of the *Final Order on the Application*, which the condition references. The initial bond or letter of credit amount has been adjusted, in accordance with this condition, based on the final design configuration of the LJIIA components, as discussed at page 12. As shown in Table 1 herein, the adjusted financial assurance amount for LJIIA is $4.705 million in 4th Quarter 2009 dollars.

The revision corrects the adjustment calculation to avoid double-counting of the performance bond cost. Financial assurance for the LJIIB components is addressed by new Condition 101, discussed below in Revision 33.

Revision 10

Page 11, lines 18-25:

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]

Revision 10 Explanation

This revision modifies Condition 31 to refer to the financial assurance requirements for LJIIA (Condition 30) and LJIIB (Condition 101).

Revision 11

Page 12, lines 9-23:

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]
    (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.

Revision 11 Explanation

This revision modifies Condition 37 as requested by the certificate holder because it might not be possible to maintain one open lane of travel at all times and in all locations (especially at turns) when turbine component trucks are traveling to the site.

Revision 12

Page 12, lines 26-38:

39. The certificate holder shall construct all facility components in compliance with the following setback requirements:
    (a) ~~Facility~~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.~~The distance from any turbine to the nearest residence or public road (except Rattlesnake Road and Stone Lane) must be no less than the maximum blade tip height of the turbine plus 50 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.

(~~c~~e) ~~Except where (a) or (b) apply, turbines and~~The certificate holder shall maintain a minimum distance of 250 feet measured from the center line of each turbine tower ~~meteorological towers must be at least 250 feet from any public road right-of-way,~~ to the nearest edge of any railroad right-of-way~~, exterior lot line~~ 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.

(~~d~~g) ~~Except where (a) applies,~~The certificate holder shall maintain a minimum distance of 50 feet measured from any facility O&M building ~~or substation must be at least 50 feet~~to the nearest edge of any public road right-of-way~~,~~ or railroad right-of-way or ~~exterior lot line~~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]

Revision 12 Explanation

This revision modifies Condition 39 to conform to setback distances that the Council has required for other wind energy facilities. Sections (a) through (d) are identical to the setback requirements that the Council adopted for the Shepherds Flat Wind Farm.[291]

The change to section (b) provides for a setback of at least 110 percent of maximum blade tip height from turbine towers to the nearest edge of a public road right-of-way. This represents a decreased setback requirement compared to the current setback of maximum blade tip height plus 50 feet. For the range of turbines proposed by the certificate holder, the revised setback distance would be maximum blade tip height plus 38.8 feet for 1.5-MW turbines up to a distance of maximum blade tip height plus 49.2 feet for 3.0-MW turbines. Condition 27 limits the maximum blade tip height for turbines at the LJF to 150 meters (492 feet).

New section (c) provides for a setback of at least 1,320 feet (¼-mile) from turbine towers to residences existing at the time of construction. This represents an increased setback requirement compared to the current setback of maximum blade tip height plus 50 feet (under

[291] *Site Certificate for the Shepherds Flat Wind Farm* (July 25, 2008), Condition 40.

the current setback, the total distance to a residence would range from approximately 427 feet for 1.5-MW turbines to 541 feet for 3.0-MW turbines).

New section (d) provides for a setback of at least 110 percent of maximum blade tip height from turbine towers to the nearest boundary of the certificate holder's lease area. A setback from the lease area boundary does not exist under the current condition. Under the current condition, section (c) provides for a setback of 250 feet from an "exterior lot line." The "lease area boundary" might coincide with an "exterior lot line" but could not lie farther from the turbine location than the "exterior lot line." Therefore, the revision represents an increased setback from the "exterior lot line." A setback of at least 110 percent of maximum blade tip height (under the modified condition) would range from approximately 427 feet for 1.5-MW turbines to 541 feet for 3.0-MW turbines.

Current section (c) is renumbered as (e) and rephrased to be more consistent with the phrasing of sections (b) through (d). New section (e) does not change the turbine tower setbacks of at least 250 feet from railroad rights-of-way, exterior lot lines and substations. The modification eliminates the 250-foot setbacks from public road rights-of way and exterior lot lines. Instead, under modified section (b), a setback of 110 percent of maximum blade tip height would apply to roads and, under new section (d), a setback of 110 percent of maximum blade tip height from "the nearest boundary of the certificate holder's lease area" would apply.

New section (f) restates the setbacks for met towers that are currently contained within section (c). The modification does not change the setback distance.

Current section (d) is renumbered as (g) and rephrased to be more consistent with the phrasing of sections (b) through (d). New section (g) addresses setback distances that apply to the O&M buildings. The modification replaces the current setback from any "exterior lot line" with a setback from "the nearest boundary of the certificate holder's lease area." The setback distance is unchanged.

New section (h) addresses setbacks for the facility substations, currently included in section (d). The modification replaces the current setback from any "exterior lot line" with a setback from "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." The substation for LJIIA will be located on an easement.[292]

Revision 13

Page 13, lines 5-8:

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 ~~adjacent~~ farmland adjacent to the construction area consistent with Gilliam County Zoning Ordinance 7.020(T)(4)(a)(5). [Amendment #1]

Revision 13 Explanation

This revision modifies Condition 42 to allow separate recording of applicable Covenants Not to Sue as each phase of construction proceeds.

[292] Email from Jeffrey Durocher, September 3, 2009, and Response to RAI (table), p. 7.

Revision 14

Page 13, lines 11-16:

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 NAD 83(91) coordinates of each turbine tower, connecting lines and transmission lines 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]

Revision 14 Explanation

This revision modifies Condition 44 to require "as-built" information be provided to the Department and to the Gilliam County Planning Director separately for each phase of construction.

Revision 15

Page 13, lines 17-29:

45. Before beginning construction of the LJIIA components as described in the *Final Order on Amendment #1*, the certificate holder shall provide to the Department a map showing the final design locations of all LJIIA components ~~of the facility~~ 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 #1]

Revision 15 Explanation

This revision modifies Condition 45 to specify that it applies to cultural resource investigations related to the LJIIA components. New Condition 102 described below in Revision 34 is a similar condition related to the LJIIB components.

Revision 16

Page 14, lines 1-4:

48. During construction of the LJIIA components as described in the *Final Order on Amendment #1*~~facility~~, 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. During construction of the LJIIB components, the certificate holder shall label the site identified as LJ-4/10/09-8 in the Request for Amendment #1 on construction maps and drawings as a "no entry" area,

and if construction will occur within 200 feet of the site, the certificate holder shall flag a 50-foot buffer around the site. [Amendment #1]

Revision 16 Explanation

This revision modifies Condition 48 to provide a construction buffer around a site identified in the Request for Amendment #1 as potentially eligible for listing on the National Register of Historic Places.

Revision 17

Page 14, lines 5-10:

49. Before beginning construction of any phase of the facility, the certificate holder shall conduct site-specific geotechnical investigations 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 #1]

Revision 17 Explanation

This revision modifies Condition 49 to allow separate site-specific geotechnical investigations as each phase of construction proceeds.

Revision 18

Page 14, lines 22-25:

53. Before beginning construction of any phase of the facility, the certificate holder shall submit ~~a~~ 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 ~~FAA's~~ responses from the FAA and the Oregon Department of Aviation ~~as soon as it has been received~~. [Amendment #1]

Revision 18 Explanation

This revision modifies Condition 53 to allow separate notifications to the FAA and the Oregon Department of Aviation as each phase of construction proceeds. The revision adds notification of the Oregon Department of Aviation as required under OAR 738-070-0080.

Revision 19

Page 16, lines 23-42, and page 17, lines 1-4:

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 and the wetland area identified as "W-8" in the Request for Amendment #1, Attachment 11, Figure 6. [Amendment #1]

(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. The certificate holder shall conduct ~~a~~ pre-construction investigations to determine whether any jurisdictional waters exist in those locations. The certificate holder shall submit a written report on ~~this~~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 ~~the facility~~that phase would have no impact on any jurisdictional water identified in the report. [Amendment #1]

Revision 19 Explanation

This revision modifies Condition 72 to require avoidance of wetland area "W-8" identified in the wetlands and waters delineation report that was included in the Request for Amendment #1 (Attachment 11). In addition, modification of section (e) allows for separate pre-construction investigations as each phase of construction proceeds.

Revision 20

Page 17, lines 11-14:

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 ~~the Application~~Amendment #1 as Attachment B and as amended from time to time. [Amendment #1]

Revision 20 Explanation

This revision modifies Condition 74 to update the cross-reference where the applicable *Revegetation Plan* is to be found. The Department recommended that the Council revise the *Revegetation Plan* as described in Attachment B, which is incorporated in this order.

Revision 21

Page 17, lines 29-34:

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 ~~9.9 miles~~30 percent of the collector system, excluding the optional parallel double-circuit 34.5-kV lines that may be built to carry power from the LJIIB area to the LJIIA substation as described in the *Final Order on Amendment #1*. 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 #1]

Revision 21 Explanation

This revision modifies Condition 78 to limit aboveground segments of the LJF collector system (including LJIIA and LJIIB components) to no more than 30 percent of the total collector system. This limitation does not include up to 6.1 miles of aboveground parallel double-circuit 34.5-kV lines that may be built to carry power from the LJIIB area to the LJIIA substation, described herein at page 6. The revision specifies that underground collector line be installed at a minimum depth of three feet to comply with GCZO Section 7.020(T)(4)(d)(7).

Revision 22

Page 18, lines 4-13:

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

[Amendment #1]

Revision 22 Explanation

This revision modifies Condition 81 to require a minimum ground clearance of 30 feet for the 230-kV transmission line that may be built to carry power from the optional LJIIB substation to the LJIIA substation.

Revision 23

Page 18, lines 17-20:

83. The certificate holder shall design all aboveground transmission line support structures following the practices suggested by the Avian Powerline Interaction Committee (~~1996~~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]

Revision 23 Explanation

This revision modifies Condition 83 to apply the APLIC guidelines issued in 2006.

Revision 24

Page 18, lines 21-42, and page 19, lines 1-2:

84. The certificate holder may construct turbines and other facility components within the site boundary as described in~~micrositing areas identified in Attachment D of~~ the Final

Orders on the Application and Amendment #1, 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 of Laurent's milk-vetch (identified in the Request for Amendment #1, Attachment 7, p. 13) and 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.

(e) If construction would affect locations within the micrositing areas that were not previously surveyed ~~in 2005 and 2006~~ for the occurrence of State or federal threatened or endangered species as described in the Final Orders on the Application and Amendment #1, 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 #1]

Revision 24 Explanation

This revision modifies Condition 84 to incorporate the LJIIB areas within the site boundary. The modification to section (d) adds protection of populations of Laurent's milk-vetch, a State-listed threatened plant species. The modification to section (e) requires pre-construction surveys for threatened and endangered species if construction of LJIIA or LJIIB components would affect any areas that have not been surveyed previously.

Revision 25

Page 19, lines 3-18:

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 ~~begins~~ 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.

(e) 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]

Revision 25 Explanation

This revision modifies Condition 85 to allow separate exclusion area flagging around sensitive wildlife habitat areas as each phase of construction proceeds.

Revision 26

Page 19, lines 19-41, and page 20 lines 1-2:

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]

Revision 26 Explanation

This revision modifies Condition 86 to allow separate exclusion area flagging, monitoring and construction restrictions around active raptor nests as each phase of construction proceeds.

Revision 27

Page 20, lines 3-5:

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 ~~the Application~~Amendment #1 as Attachment A and as amended from time to time. [Amendment #1]

Revision 27 Explanation

This revision modifies Condition 87 to update the cross-reference where the applicable *Wildlife Monitoring and Mitigation Plan* is to be found. The Department recommended that the Council revise the *Wildlife Monitoring and Mitigation Plan* as described in Attachment A, which is incorporated in this order.

Revision 28

Page 20, lines 6-9:

88. Before beginning construction of the LJIIA components as described in the *Final Order on Amendment #1*, 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 #1]

Revision 28 Explanation

This revision modifies Condition 88 to clarify that the ITP is required before construction of the LJIIA components. An ITP is not required for the LJIIB area.

Revision 29

Page 20, lines 10-16:

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 ~~the Application~~Amendment #1 as Attachment C and as amended from time to time. [Amendment #1]

Revision 29 Explanation

This revision modifies Condition 89 to update the cross-reference where the applicable *Habitat Mitigation Plan* is to be found. The Department recommended that the Council revise the *Habitat Mitigation Plan* as described in Attachment C, which is incorporated in this order.

Revision 30

Page 20, lines 28-33:

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]

Revision 30 Explanation

This revision modifies Condition 92 to allow the use of lighting for nighttime construction of the facility.

Revision 31

Page 21, lines 1-21:

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 ~~at the facility~~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]

Revision 31 Explanation

This revision modifies Condition 94 to allow separate noise analysis as each phase of construction proceeds. The certificate holder must demonstrate that the facility as a whole complies with the applicable noise control regulations.

Revision 32

Page 22, following line 18:

VI. CONDITIONS ADDED BY AMENDMENT #1

Revision 32 Explanation

This revision adds a new section to the site certificate to include new conditions addressed in this order. The subsequent sections of the site certificate would be re-numbered accordingly.

Revision 33

Page 22, following Revision 32:

101. Before beginning construction of the LJIIB components as described in the *Final Order on Amendment #1*, 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 $7.281 million (in 4th Quarter 2009 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 LJIIB components by applying the unit costs and general costs illustrated in Table 2 of the *Final Order on Amendment #1* 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 4th Quarter 2009 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 index value for 4th Quarter 2009 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 4th Quarter 2009 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.

Revision 33 Explanation

This revision adds a condition to the site certificate to address the financial assurance requirement for the LJIIB components. This condition and Condition 30 provide separate financial assurance amounts for the LJIIB and LJIIA components of the facility. The amount of $7.281 million that is shown in the first paragraph is the amount shown in Table 2 and includes general costs applicable if the LJIIB components are operated separately or sold as a separate facility. When the certificate holder is ready to begin construction of the LJIIB components, the initial bond or letter of credit amount may be adjusted, as described in this condition. If the certificate holder at that time notifies the Department that the LJF is being constructed, operated and retired as a whole (including all LJIIA and LJIIB components), the general costs would be accounted for in the financial assurance amount for LJIIA and would be omitted in calculating the adjusted financial assurance amount for LJIIB.

Revision 34

Page 22, following Revision 33:

102. Before beginning construction of the LJIIB components as described in the *Final Order on Amendment #1*, the certificate holder shall provide to the Department a map showing the final design locations of all LJIIB components, the areas that would be disturbed during construction and the areas that were surveyed in 2009 for historic, cultural or archaeological resources as described in the Request for Amendment #1. If areas to be disturbed during construction lie outside of the previously 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 Oregon State Historic Preservation Office (SHPO). If any potentially significant historic, cultural or archaeological resource sites 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 2009 surveys or were found during pre-construction investigations and shall implement other appropriate measures to protect the resources.

Revision 34 Explanation

This revision adds a condition to the site certificate to protect cultural resources identified by surveys of the LJIIB area. This condition is similar to Condition 45, which addresses the LJIIA area as discussed above in Revision 13.

Revision 35

Page 22, following Revision 34:

103. In reference to the approximate alignment of the Oregon Trail described in the Request for Amendment #1, the certificate holder shall comply with the following requirements:

(a) The certificate holder shall not locate facility components on visible remnants of the Oregon Trail and shall avoid any construction disturbance to those remnants.

(b) The certificate holder shall not locate facility components on undeveloped land where the trail alignment is marked by existing Oregon-California Trail Association markers, as described in the Request for Amendment #1.

(c) Before beginning construction of the LJIIB components as described in the *Final Order on Amendment #1*, the certificate holder shall provide to the State Historic Preservation Office (SHPO) and the Department photographic documentation of the presumed Oregon Trail alignments within the site boundary.

(d) The certificate holder shall ensure that construction personnel proceed carefully in the vicinity of the presumed alignments of the Oregon Trail. If any intact physical evidence of the trail is discovered, the certificate holder shall avoid any disturbance to the intact segments by redesign, re-engineering or restricting the area of construction activity. The certificate holder shall promptly notify the SHPO and the Department of the discovery. The certificate holder shall consult with the SHPO and the Department to determine appropriate mitigation measures.

Revision 35 Explanation

This revision adds a condition to the site certificate to address protection of any visible remnants of the Oregon Trail within the LJIIB area.

Revision 36

Page 22, following Revision 35:

104. Before beginning construction of any new State Highway approaches or utility crossing authorized by the *Final Order on Amendment #1*, the certificate holder shall obtain all required permits from the Oregon Department of Transportation (ODOT) subject to the applicable conditions required by OAR Chapter 734, Divisions 51 and 55. The certificate holder shall submit the necessary application or applications in a form satisfactory to ODOT and the Department for the location, construction and maintenance of approaches to State Highway 19 for access to the site. The certificate holder shall submit the necessary application or applications in a form satisfactory to ODOT and the Department for the location, construction and maintenance of collector cables or transmission lines crossing Highway 19.

Revision 36 Explanation

This revision adds a condition to the site certificate to address the ODOT permits required for access road approaches and utility crossings along State Highway 19 that are necessary for construction of the LJIIB components.

VIII. ORDER

The Council approves Amendment #1 and issues an amended site certificate for the Leaning Juniper II Wind Power Facility, subject to the terms and conditions set forth above.

Issued this 20th day of November, 2009.

THE OREGON ENERGY FACILITY SITING COUNCIL

By: Robert Shiprack

Robert Shiprack, Chair
Oregon Energy Facility Siting Council

Attachments
Attachment A: Wildlife Monitoring and Mitigation Plan
Attachment B: Revegetation Plan
Attachment C: Habitat Mitigation Plan

Notice of the Right to Appeal

You have the right to appeal this order to the Oregon Supreme Court pursuant to ORS 469.403. To appeal you must file a petition for judicial review with the Supreme Court within 60 days from the day this order was served on you. If this order was personally delivered to you, the date of service is the date you received this order. If this order was mailed to you, the date of service is the date it was mailed, not the day you received it. If you do not file a petition for judicial review within the 60-day time period, you lose your right to appeal.

Leaning Juniper II Wind Project: Wildlife Monitoring and Mitigation Plan

[NOVEMBER 20, 2009]

This plan describes wildlife monitoring that the certificate holder shall conduct during operation of the Leaning Juniper II Wind Power Facility (LJF).[1] The monitoring objectives are to determine whether the facility causes significant fatalities of birds and bats and to determine whether the facility results in a loss of habitat quality.

The LJF facility consists of up to 127 wind turbines, four non-guyed meteorological (met) towers and other related or supporting facilities as described in the site certificate. The permanent facility components occupy approximately 111 acres, of which up to 52 acres is Category 5 wildlife habitat or better, based on the Oregon Department of Fish and Wildlife (ODFW) standards (OAR 635-415-0025).[2]

The certificate holder shall use experienced personnel to implement the monitoring required under this plan and properly trained personnel to conduct the monitoring, subject to approval by the Oregon Department of Energy (Department) as to professional qualifications. For all components of this plan except the Wildlife Reporting and Handling System, the certificate holder shall hire an independent third party (not employees of the certificate holder) to perform monitoring tasks.

The Wildlife Monitoring and Mitigation Plan for the LJF has the following components:

1) Fatality monitoring program including:
    a) Removal trials
    b) Searcher efficiency trials
    c) Fatality search protocol
    d) Statistical analysis
2) Raptor nesting surveys
3) Washington ground squirrel surveys
4) Grassland bird study
5) Wildlife Reporting and Handling System

Based on the results of the monitoring programs, 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 the Department determines that mitigation is needed, the certificate holder shall propose appropriate mitigation actions to the Department and shall carry out mitigation actions approved by the Department, subject to review by the Oregon Energy Facility Council (Council).

[1] This plan is incorporated by reference in the site certificate for the LJF and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.
[2] A more complete description of the habitat areas affected by the facility is provided in the Final Order on Amendment #1, Section IV.4(b).

1. Fatality Monitoring

(a) Definitions and Methods

Seasons

This plan uses the following dates for defining seasons:

Season	Dates
Spring Migration	March 16 to May 15
Summer/Breeding	May 16 to August 15
Fall Migration	August 16 to October 31
Winter	November 1 to March 15

Search Plots

The certificate holder shall conduct fatality monitoring within search plots. The certificate holder, in consultation with the Oregon Department of Fish and Wildlife (ODFW), shall select search plots based on a systematic sampling design that ensures that the selected search plots are representative of the habitat conditions in different parts of the site. Each search plot will contain one turbine. Search plots will be square or circular. Circular search plots will be centered on the turbine location and will have a radius equal to the maximum blade tip height of the turbine contained within the plot. "Maximum blade tip height" is the turbine hub-height plus one-half the rotor diameter. Square search plots will be of sufficient size to contain a circular search plot as described above. The certificate holder shall provide maps of the search plots to the Department before beginning fatality monitoring at the facility. The certificate holder shall use the same search plots for each search conducted during a monitoring year.

Scheduling

In each monitoring year, the certificate holder shall conduct fatality monitoring searches at the rates of frequency shown below. Over the course of one monitoring year, the certificate holder would conduct 16 searches, as follows:

Season	Frequency
Spring Migration	2 searches per month (4 searches)
Summer/Breeding	1 search per month (3 searches)
Fall Migration	2 searches per month (5 searches)
Winter	1 search per month (4 searches)

Sample Size

The sample size for fatality monitoring is the number of turbines searched per monitoring year. During each monitoring year, the certificate holder shall search a minimum of 50 turbines. If fewer than 50 turbines are built, the certificate holder shall search all turbines.

As described in the site certificate, the certificate holder may choose to build the LJF using turbine types in two size classes:

- Small: turbines having a rotor diameter of 82 meters or less
- Large: turbines having a rotor diameter greater than 82 meters

If the final design of the LJF facility includes both small and large turbines, the certificate holder shall consult with an independent expert with experience in statistical analysis of avian fatality data to determine whether it would be possible to design a 50-turbine sample with a sufficient number of turbines in each size class to allow a statistical comparison of fatality rates for all birds as a group. The certificate holder shall submit the expert's written analysis to the Department. If the expert's analysis shows that a comparison study is possible and if the Department approves, the certificate holder shall sample the appropriate number of turbines in each class and conduct the comparison study. The certificate holder may choose to sample more than 50 turbines in each monitoring year, if a larger sample size would allow the comparison study to be done.

(b) Removal Trials

The objective of the removal trials is to estimate the length of time avian and bat carcasses remain in the search area. Carcass removal studies will be conducted during each season in the vicinity of the search plots. Estimates of carcass removal rates will be used to adjust carcass counts for removal bias. "Carcass removal" is the disappearance of a carcass from the search area due to predation, scavenging or other means such as farming activity. Removal rates will be estimated by size class, habitat type and season.

The certificate holder shall conduct carcass removal trials within each of the seasons defined above during the years in which fatality monitoring occurs. During the first year in which fatality monitoring occurs, the certificate holder shall conduct one removal trial per season (four removal trials per year). For each trial, at least 10 small bird carcasses and at least 10 large bird carcasses will be distributed throughout the project area (approximately 80 trial carcasses per year).

Before beginning removal trials for the second year of fatality monitoring, the certificate holder shall report the results of the first year removal trials to the Department and ODFW. In the report, the certificate holder shall analyze whether four removal trials per year, as described above, provides sufficient data to accurately estimate adjustment factors for carcass removal. The number of removal trials for the second year of fatality monitoring may be adjusted up or down, subject to the approval of the Department.

The "small bird" size class will use carcasses of house sparrows, starlings, commercially available game bird chicks or legally obtained native birds to simulate passerines. The "large bird" size class will use carcasses of raptors provided by agencies, commercially available adult game birds or cryptically colored chickens to simulate raptors, game birds and waterfowl. If fresh bat carcasses are available, they may also be used.

To avoid confusion with turbine-related fatalities, planted carcasses will not be placed in fatality monitoring search plots. Planted carcasses will be placed in the vicinity of search plots but not so near as to attract scavengers to the search plots. The planted carcasses will be located randomly within the carcass removal trial plots.

Carcasses will be placed in a variety of postures to simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture (e.g., thrown over the shoulder), 2) hidden to simulate a crippled bird (e.g., placed beneath a shrub or tuft of grass) or 3) partially hidden. Trial carcasses will be marked discreetly for recognition by searchers and other personnel. Trial carcasses will be left at the location until the end of the carcass removal trial.

It is expected that carcasses will be checked as follows, although actual intervals may vary. Carcasses will be checked for a period of 40 days to determine removal rates. They will be checked approximately every day for the first 4 days, and then on day 7, day 10, day 14, day 20, day 30 and day 40. This schedule may vary depending on weather and coordination with the other survey work. At the end of the 40-day period, the trial carcasses and scattered feathers will be removed.

(c) Searcher Efficiency Trials

The objective of searcher efficiency trials is to estimate the percentage of bird and bat fatalities that searchers are able to find. The certificate holder shall conduct searcher efficiency trials on the fatality monitoring search plots in both grassland/shrub-steppe and cultivated agriculture habitat types. Searcher efficiency will be estimated by size class, habitat type and season. A pooled estimate of searcher efficiency will be used to adjust carcass counts for detection bias.

The certificate holder shall conduct searcher efficiency trials within each of the seasons defined above during the years in which the fatality monitoring occurs. During each season of the years in which fatality monitoring occurs, the certificate holder shall use approximately 25 carcasses for searcher efficiency trials (approximately 100 carcasses per year). The certificate holder shall vary the number of trials per season and the number of carcasses per trial so that the searchers will not know the total number of trial carcasses being used in any trial. The certificate holder shall distribute trial carcasses in varied habitat in rough proportion to the habitat types within the facility site. During each season, both small bird and large bird carcasses will be used in approximately equal numbers. “Small bird” and “large bird” size classes and carcass selection are as described above for the removal trials.

Before beginning searcher efficiency trials for the second year of fatality monitoring, the certificate holder shall report the results of the first year efficiency trials to the Department and ODFW. In the report, the certificate holder shall analyze whether the efficiency trials as described above (using approximately 100 carcasses per year) provides sufficient data to accurately estimate adjustment factors for carcass removal. The number of removal trials for the second year of fatality monitoring may be adjusted up or down, subject to the approval of the Department.

Personnel conducting searches will not know in advance when trials are conducted; nor will they know the location of the trial carcasses. If suitable trial carcasses are available, trials during the fall season will include several small brown birds to simulate bat carcasses. Legally obtained bat carcasses will be used if available.

On the day of a standardized fatality monitoring search (described below) but before the beginning of the search, efficiency trial carcasses will be placed at random locations within areas to be searched. If scavengers appear attracted by placement of carcasses, the carcasses will be distributed before dawn.

Efficiency trials will be spread over the entire season to incorporate effects of varying weather and vegetation growth. Carcasses will be placed in a variety of postures to simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture (thrown over the shoulder), 2) hidden to simulate a crippled bird or 3) partially hidden.

Each non-domestic carcass will be discreetly marked so that it can be identified as an efficiency trial carcass after it is found. The number and location of the efficiency trial carcasses found during the 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 person responsible for distributing the carcasses.

If new searchers are brought into the search team, additional searcher efficiency trials will be conducted to ensure that detection rates incorporate searcher differences. The certificate holder shall include a discussion of any changes in search personnel and any additional detection trials in the reporting required under Section 6 of this plan.

(d) Fatality Monitoring Search Protocol

The objective fatality monitoring is to estimate the number of bird and bat fatalities that are attributable to facility operation as an indicator of the impact of the facility on habitat quality. The goal of bird and bat fatality monitoring is to estimate fatality rates and associated variances. The certificate holder shall conduct fatality monitoring using standardized carcass searches. For each phase of the facility, the certificate holder shall conduct fatality monitoring for two years (32 searches), beginning one month after the start of commercial operation of that phase.

The certificate holder shall use a worst-case analysis to resolve any uncertainty in the results and to determine whether the data indicate that additional mitigation should be considered. The Department may require additional, targeted monitoring if the data indicate the potential for significant impacts that cannot be addressed by worst-case analysis and appropriate mitigation.

The certificate holder shall calculate fatality rates using the statistical methods described in Section (e). On an annual basis, the certificate holder shall report an estimate of fatalities in eight categories: 1) all birds, 2) small birds, 3) large birds, 4) raptors, 5) grassland birds, 6) nocturnal migrants, 7) State Sensitive Species listed under OAR 635-100-0040 and 8) bats.

If the sample size is large enough to conduct a comparison study of large and small turbines and the Department approves, the certificate holder shall compare the fatality rates in the "all birds" category for each of the turbine size classes. In proposing a comparison study of large and small turbines, the certificate holder may include available data collected at other wind energy facilities in similar habitat areas, if the data are based on comparable survey protocols and are appropriately adjusted for removal and searcher efficiency bias.

The certificate holder shall estimate the number of avian and bat fatalities attributable to operation of the facility based on the number of avian and bat fatalities found at the facility site. All carcasses located within areas surveyed, regardless of species, will be recorded and, if possible, a cause of death determined based on blind necropsy results. If a different cause of death is not apparent, the fatality will be attributed to facility operation. The total number of avian and bat fatalities will be estimated by adjusting for removal and searcher efficiency bias.

Personnel trained in proper search techniques ("the searchers") will conduct the carcass searches by walking parallel transects within the search plots.[3] Transects will be initially set at 6 meters apart in the area to be searched. A searcher will walk at a rate of approximately 45 to 60

[3] Where search plots are adjacent, the search area may be rectangular.

meters per minute along each transect searching both sides out to three meters for casualties. Search area and speed may be adjusted by habitat type after evaluation of the first searcher efficiency trial. The searchers will record the condition of each carcass found, using the following condition categories:

- Intact – a carcass that is completely intact, is not badly decomposed and shows no sign of being fed upon by a predator or scavenger
- Scavenged – an entire carcass that shows signs of being fed upon by a predator or scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains, legs, pieces of skin, etc.)
- Feather Spot – 10 or more feathers at one location indicating predation or scavenging or 2 or more primary feathers

All carcasses (avian and bat) found during the standardized carcass searches will be photographed, recorded and labeled with a unique number. Each carcass will be bagged and frozen for future reference and possible necropsy. A copy of the data sheet for each carcass will be kept with the carcass at all times. For each carcass found, searchers will record species, sex and age when possible, date and time collected, location, condition (e.g., intact, scavenged, feather spot) and any comments that may indicate cause of death. Searchers will photograph each carcass as found and will map the find on a detailed map of the search area showing the location of the wind turbines and associated facilities. The certificate holder shall coordinate collection of state endangered, threatened, sensitive or other state protected species with ODFW. The certificate holder shall coordinate collection of federally-listed endangered or threatened species and Migratory Bird Treaty Act protected avian species with the U.S. Fish and Wildlife Service (USFWS). The certificate holder shall obtain appropriate collection permits from ODFW and USFWS.

The searchers might discover carcasses incidental to formal carcass searches (e.g., while driving within the project area). For each incidentally discovered carcass, the searcher shall identify, photograph, record data and collect the carcass as would be done for carcasses within the formal search sample during scheduled searches. If the incidentally discovered carcass is found within a formal search plot, the fatality data will be included in the calculation of fatality rates. If the incidentally discovered carcass is found outside a formal search plot, the data will be reported separately. The certificate holder shall coordinate collection of incidentally discovered state endangered, threatened, sensitive or other state protected species with ODFW. The certificate holder shall coordinate collection of incidentally discovered federally-listed endangered or threatened species and Migratory Bird Treaty Act protected avian species with the USFWS.

The certificate holder shall develop and follow a protocol for handling injured birds. Any injured native birds found on the facility site will be carefully captured by a trained project biologist or technician and transported to a qualified rehabilitation specialist approved by the Department.[4] The certificate holder shall pay costs, if any, charged for time and expenses related

[4] Approved specialists include Lynn Tompkins (wildlife rehabilitator) of Blue Mountain Wildlife, a wildlife rehabilitation center in Pendleton, and the Audubon Bird Care Center in Portland. The certificate holder must obtain Department approval before using other specialists.

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.

(e) Statistical Methods for Fatality Estimates

The estimate of the total number of wind facility-related fatalities is based on:

(1) The observed number of carcasses found during standardized searches during the two monitoring years for which the cause of death is attributed to the facility.[5]
(2) Searcher efficiency expressed as the proportion of planted carcasses found by searchers.
(3) Removal rates expressed as the estimated average probability a carcass is expected to remain in the study area and be available for detection by the searchers during the entire survey period.

Definition of Variables

The following variables are used in the equations below:

c_i	the number of carcasses detected at plot *i* for the study period of interest (e.g., one year) for which the cause of death is either unknown or is attributed to the facility
n	the number of search plots
k	the number of turbines searched (includes the turbines centered within each search plot and a proportion of the number of turbines adjacent to search plots to account for the effect of adjacent turbines on the search plot buffer area)
$\bar{c}$	the average number of carcasses observed per turbine per year
s	the number of carcasses used in removal trials
s_c	the number of carcasses in removal trials that remain in the study area after 40 days
se	standard error (square of the sample variance of the mean)
t_i	the time (days) a carcass remains in the study area before it is removed
$\bar{t}$	the average time (days) a carcass remains in the study area before it is removed
d	the total number of carcasses placed in searcher efficiency trials
p	the estimated proportion of detectable carcasses found by searchers
I	the average interval between searches in days
$\hat{\pi}$	the estimated probability that a carcass is both available to be found during a search and is found
m_t	the estimated annual average number of fatalities per turbine per year, adjusted for removal and observer detection bias
C	nameplate energy output of turbine in megawatts (MW)

[5] If a different cause of death is not apparent, the fatality will be attributed to facility operation.

Observed Number of Carcasses

The estimated average number of carcasses ($\bar{c}$) observed per turbine per year is:

$$\bar{c} = \frac{\sum_{i=1}^{n} c_i}{k}. \quad (1)$$

Estimation of Carcass Removal

Estimates of carcass removal are used to adjust carcass counts for removal bias. Mean carcass removal time ($\bar{t}$) is the average length of time a carcass remains at the site before it is removed:

$$\bar{t} = \frac{\sum_{i=1}^{s} t_i}{s - s_c}. \quad (2)$$

This estimator is the maximum likelihood estimator assuming the removal times follow an exponential distribution and there is right-censoring of data. Any trial carcasses still remaining at 40 days are collected, yielding censored observations at 40 days. If all trial carcasses are removed before the end of the trial, then s_c is 0, and $\bar{t}$ is just the arithmetic average of the removal times. Removal rates will be estimated by carcass size (small and large), habitat type and season.

Estimation of Observer Detection Rates

Observer detection rates (i.e., searcher efficiency rates) are expressed as *p*, the proportion of trial carcasses that are detected by searchers. Observer detection rates will be estimated by carcass size, habitat type and season.

Estimation of Facility-Related Fatality Rates

The estimated per turbine annual fatality rate (m_t) is calculated by:

$$m_t = \frac{\bar{c}}{\hat{\pi}}, \quad (3)$$

where $\hat{\pi}$ includes adjustments for both carcass removal (from scavenging and other means) and observer detection bias assuming that the carcass removal times t_i follow an exponential distribution. Under these assumptions, this detection probability is estimated by:

$$\hat{\pi} = \frac{\bar{t} \cdot p}{I} \cdot \left[\frac{\exp\left(I / \bar{t} \right) - 1}{\exp\left(I / \bar{t} \right) - 1 + p} \right]. \quad (4)$$

The estimated per MW annual fatality rate (m) is calculated by:

$$m = \frac{m_t}{C}. \quad (5)$$

The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds, (3) large birds, (4) raptors, (5) grassland birds, (6) nocturnal migrants 7) State Sensitive Species listed under OAR 635-100-0040 and 8) bats. If the sample size is large enough to conduct a comparison study of large and small turbines and the Department approves, the certificate holder shall compare the fatality rates in the "all birds" category for each of the turbine size classes. The final reported estimates of *m*, associated standard errors and 90% confidence intervals will be calculated using bootstrapping (Manly 1997). Bootstrapping is a computer simulation technique that is useful for calculating point estimates, variances and confidence intervals for complicated test statistics. For each iteration of the bootstrap, the plots will be sampled with replacement, trial carcasses will be sampled with replacement and $\bar{c}$, $\bar{t}$, p, $\hat{\pi}$ and m will be calculated. A total of 5,000 bootstrap iterations will be used. The reported estimates will be the means of the 5,000 bootstrap estimates. The standard deviation of the bootstrap estimates is the estimated standard error. The lower 5^{th} and upper 95^{th} percentiles of the 5000 bootstrap estimates are estimates of the lower limit and upper limit of 90% confidence intervals.

Nocturnal Migrant and Bat Fatalities

Differences in observed nocturnal migrant and bat fatality rates for lit turbines, unlit turbines that are adjacent to lit turbines and unlit turbines that are not adjacent to lit turbines will be compared graphically and statistically.

(f) Mitigation

Mitigation may be appropriate if fatality rates exceed a "threshold of concern." For the purpose of determining whether a threshold has been exceeded, the certificate holder shall calculate the average annual fatality rates for species groups after two years of monitoring. Based on current knowledge of the species that are likely to use the habitat in the area of the facility, the following thresholds apply to the LJF facility:

Species Group	**Threshold of Concern** (fatalities per MW)
Raptors (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 and any federal threatened or endangered raptor species.)	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.)	0.2
Bat species as a group	2.5

If the data show that a threshold of concern for a species group has been exceeded, the certificate holder shall implement additional mitigation if the Department determines that mitigation is appropriate based on analysis of the data, consultation with ODFW and consideration of any other significant information available at the time. In addition, the

Department may determine that mitigation is appropriate if fatality rates for individual avian or bat species (especially State Sensitive Species) are higher than expected and at a level of biological concern. If the Department determines that mitigation is appropriate, the certificate holder, in consultation with the Department and ODFW, shall propose mitigation measures designed to benefit the affected species. The certificate holder shall implement mitigation as approved by the Council. The Department may recommend additional, targeted data collection if the need for mitigation is unclear based on the information available at the time. The certificate holder shall implement such data collection as approved by the Council.

Mitigation should be designed to benefit the affected species group. Mitigation may include, but is not limited to, protection of nesting habitat for the affected 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, mitigation measures might include: enhancement of the protected tract by weed removal and control; increasing the diversity of native grasses and forbs; planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for raptors; improving wildfire response; and conducting or making a contribution to research that will aid in understanding more about the affected species and its conservation needs in the region.

2. Raptor Nest Surveys

The objectives of raptor nest surveys are: (1) to estimate the size of the local breeding populations of raptor species that nest on the ground or aboveground in trees or other aboveground nest locations in the vicinity of the facility; and (2) to determine whether operation of the facility results in a reduction of nesting activity or nesting success in the local populations of the following raptor species: Swainson's hawk, golden eagle, ferruginous hawk and burrowing owl.

(a) Survey Protocol

For Raptor Species that Nest Aboveground

The certificate holder shall use aerial and ground surveys to evaluate nest success by gathering data on active nests, on nests with young and on young fledged. The certificate holder will share the data with state and federal biologists. For each phase of the facility, the certificate holder shall conduct the first year of post-construction raptor nest surveys in the first raptor nesting season after construction of that phase is completed. The second year of surveys will be done in the fourth year after construction is completed. Thereafter, the certificate holder shall conduct raptor nest surveys as described in Section 2(d) below.

During each survey year, the certificate holder will conduct a minimum of one helicopter survey in late May or early June and additional surveys as described in this section. All nests discovered during pre-construction surveys and any nests discovered during post-construction surveys, whether active or inactive, will be given identification numbers. Nest locations will be recorded on U.S. Geological Survey 7.5-minute quadrangle maps. Global positioning system coordinates will be recorded for each nest. Locations of inactive nests will be recorded because they could become occupied during future years.

The certificate holder shall conduct the aerial surveys within the LJF site and a 2-mile buffer around the site to determine nest occupancy. Determining nest *occupancy* will likely require two helicopter visits to each nest. For occupied nests, the certificate holder shall determine nesting *success* by a minimum of one ground visit to determine species, number of young and young fledged. "Nesting success" means that the young have successfully fledged (the young are independent of the core nest site). Nests that cannot be monitored due to the landowner denying access will be checked from a distance where feasible.

For Burrowing Owls

If burrowing owl nest sites are discovered, the certificate holder will monitor them according to the following protocol. This species is not easily detected during aerial raptor nest surveys. The certificate holder shall record active burrowing owl nest sites in the vicinity of the facility as they are discovered during other wildlife monitoring tasks. Any nests discovered during post-construction surveys, whether active or showing signs of intermittent use by the species, will be given identification numbers. Nest locations will be recorded on U.S. Geological Survey 7.5-minute quadrangle maps. Global positioning system coordinates will be recorded for each nest site. Coordinates for ancillary burrows used by one nesting pair or a group of nesting pairs will also be recorded. Locations of inactive nests will be recorded because they could become occupied during future years.

The certificate holder shall conduct burrowing owl monitoring in the same years as the raptor nest surveys described above. For occupied nests, the certificate holder shall determine nesting *success* by a minimum of one ground visit to determine species, number of young and young fledged. "Nesting success" means that the young have successfully fledged (the young may or may not be independent of the core nest site). Three visits to the nest sites may be necessary to determine outcome. Nests that cannot be monitored due to the landowner denying access will be checked from a distance where feasible.

If burrowing owl nests are discovered during the first year of post-construction raptor nest surveys (the first raptor nesting season after construction is completed), the certificate holder shall monitor those nest locations during the second year of surveys in the fourth year after construction is completed. Thereafter, the certificate holder shall monitor all known burrowing owl nest locations as a part of the long-term raptor nest monitoring program described in Section 2(d) below.

(b) Analysis

For each phase of the facility, the certificate holder shall analyze the raptor nesting data collected after two survey years to determine whether a reduction in either nesting success or nest use has occurred in the vicinity of the LJF facility. If the analysis indicates a reduction in nesting success or nest use by Swainson's hawks, golden eagles, ferruginous hawks or burrowing owls within the facility site or within 2 miles of the facility site, then the certificate holder shall propose appropriate mitigation for the affected species as described in Section 2(c) and shall implement mitigation as approved by the Council. At a minimum, if the analysis shows that any raptors of these species have abandoned a nest territory within the facility site or within ½ mile of the facility site or has not fledged any young over the two survey years within that same area, the certificate holder shall assume the abandonment or unsuccessful fledging is due to operation of the facility unless another cause can be demonstrated convincingly.

Any reduction in nesting success or nest use could be due to operation of the LJF facility, operation of another wind facility in the vicinity or some other cause. The certificate holder shall attribute the reduction to operation of the LJF if the wind turbine closest to the affected nest site is an LJF turbine, unless the certificate holder demonstrates, and the Department agrees, that the reduction was due to a different cause.

Given the low raptor nesting densities in the area and the presence of other wind energy facilities nearby, statistical power to detect a relationship between distance from an LJF wind turbine and nesting parameters (e.g., number of fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged based on trends in the data, results from other wind energy facility monitoring studies and literature on what is known regarding the populations in the region.

(c) Mitigation

The certificate holder shall propose mitigation for the affected species in consultation with the Department and ODFW and shall implement mitigation as approved by the Council. In proposing appropriate mitigation, the certificate holder shall advise the Department if any other wind project in the area is obligated to provide mitigation for a reduction in raptor nesting success at the same nest site. Mitigation should be designed to benefit the affected species or contribute to overall scientific knowledge and understanding of what causes nest abandonment or nest failure. Mitigation may be designed to proceed in phases over several years. It may include, but is not limited to, additional raptor nest monitoring, protection of natural nest sites from human disturbance or cattle activity (preferably within the general area of the facility) or participation in research projects designed to improve scientific understanding of the needs of the affected species.

(d) Long-term Raptor Nest Monitoring and Mitigation Plan

In addition to the two years of post-construction raptor nest surveys described in Section 2(a), the certificate holder shall conduct long-term raptor nest surveys at five-year intervals for the life of the facility.[6] The certificate holder shall conduct the first long-term raptor nest survey in the ninth year after construction is completed. In conducting long-term surveys, the certificate holder shall follow the same survey protocols as described above in Section 2(a) unless the certificate holder proposes an alternative protocol that is approved by the Department. In developing an alternative protocol, the certificate holder shall consult with ODFW.

The certificate holder shall analyze the raptor nesting data collected after each year of long-term raptor nest surveys to determine whether a reduction in either nesting success or nest use has occurred in the vicinity of the LJF facility. If the analysis indicates a reduction in nesting success or nest use by Swainson's hawks, golden eagles, ferruginous hawks or burrowing owls within the facility site or within 2 miles of the facility site, then the certificate holder shall propose appropriate mitigation for the affected species as described in Section 2(c) and shall implement mitigation as approved by the Council. At a minimum, if the analysis shows that any raptors of these species have abandoned a nest territory within the facility site or within ½ mile of the facility site or has not fledged any young over the two survey years within that same area,

[6] As used in this plan, "life of the facility" means continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

the certificate holder shall assume the abandonment or unsuccessful fledging is due to operation of the facility unless another cause can be demonstrated convincingly.

Any reduction in nesting success or nest use could be due to operation of the LJF facility, operation of another wind facility in the vicinity or some other cause, including changes in land use patterns after construction of the facility. The certificate holder shall attribute the reduction to operation of LJF if the wind turbine closest to the affected nest site is an LJF turbine unless the certificate holder demonstrates, and the Department agrees, that the reduction was due to a different cause.

Given the low raptor nesting densities in the area and the presence of other wind energy facilities nearby, statistical power to detect a relationship between distance from an LJF wind turbine and nesting parameters (e.g., number of fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged based on trends in the data, results from other wind energy facility monitoring studies and literature on what is known regarding the populations in the region.

3. Washington ground squirrel surveys

For the LJIIA area, the certificate holder shall conduct long-term post-construction surveys to collect data on Washington ground squirrel (WGS) activity within the lease boundary. A qualified professional biologist will monitor the WGS sites in the LJIIA area identified during the pre-construction surveys (2005 through 2007) and the buffer area within 500 feet in all directions from the identified WGS sites in suitable habitat. The certificate holder shall conduct surveys during the year following construction and every three years thereafter for the life of the facility. Surveyors will walk standard protocol-level transects twice between late March and late May and record level of use, notes on natal sites and physical extent of the sites. Details of the post-construction WGS monitoring for the LJIIA area are set forth in the Incidental Take Permit application as set forth in Attachment E of the Final Order on the Application.

An Incidental Take Permit is not required for the LJIIB area. Biologists conducting other monitoring of the LJIIB area (including the fatality monitoring and raptor nest surveys described above) will make note of any WGS activity they observe and will report the incidental observations, including mapping and dates of the observations. In conjunction with the raptor nest surveys for LJIIB described above, a qualified professional biologist (investigator) will assess the status of colonies 13, 14, 15a, 15b, 16, 17, 22a, 22b, 23, and 24 (identified in the Request for Amendment #1, Attachment 7, Figure 6b-3). The WGS assessments will occur during the active WGS periods in the first and fourth years of operation and every five years thereafter for the life of the project. The investigator shall record evidence of WGS activity, current land use and evidence of project-caused conditions that might increase erosion or result in a decline in vegetation quality and adversely affect a WGS colony.

4. Grassland Bird Study

The grassland bird study is a 2-year, post-construction evaluation of grassland bird use in the LJF area. Parts of the LJF facility occupy native habitat suitable for various ground-nesting bird species that nest in grassland or open low shrub habitat. Grassland birds that were documented on-site during baseline surveys conducted in 2006 included long-billed curlew, grasshopper sparrow, savannah sparrow, Western meadowlark and horned lark. These species are likely to nest on-site. Loggerhead shrikes may be present in the area but were not observed.

During the 2006 pre-construction surveys of the northern area of the LJF, the applicant surveyed 57 transects. The transects were approximately 60-meters wide. They were searched twice during the peak period of activity for the target species (March through May). Locations of territorial male grasshopper sparrows were recorded with a GPS unit. GPS locations of (assumed) paired long-billed curlews or approximate location of the pair's primary activity area and locations of curlew nests were also recorded. Surveyors made notes on the general location of special status grassland bird species observed in the area and on any observed behavior (for example, nesting, staging, courtship, non-breeders foraging in loose groups).[7] The surveyors noted detections of common species in blocks of areas surveyed (several transects combined) but did not record GPS locations or count the number of individuals present.

The objective of the post-construction grassland bird study is to determine if there are noticeable changes in the presence and overall use by special status grassland bird species compared to pre-construction data collected in 2006. By surveying a large area that includes the undisturbed area between turbine strings, the study could provide information on whether operation of the LJF facility discourages use of the area by two indicator species: grasshopper sparrows and long-billed curlews. In addition to focusing on the two indicator species, the post-construction surveys will include observations of common species such as western meadowlark, savannah sparrow and horned lark to provide information on the presence and distribution of these species within the study area and their behavior relative to turbine locations. The phrase "behavior relative to turbine locations" is intended to address observations of behavior that is different near turbines compared behavior away from turbines.

(a) Study Area

The study area is located within the LJIIA area and covers approximately 1,362 acres.[8] For purposes of this discussion, the area north of Rattlesnake Road is referred to as the "north study area," and the area south of the road is referred to as the "south study area."

The north study area is bounded by the lease boundary on the northeast and west sides and by Rattlesnake Road on the southeast side. The south study area is bounded by an existing power line on the west and natural topography on the other sides. The north study area contains two proposed turbine strings of up to eight turbines and associated access roads and transmission components. The south study area contains proposed access roads and five turbines. The south study area might include burrowing owl dens, but no confirmed nests were discovered in the baseline surveys. The habitat in the north study area is primarily shrub-steppe with grassland-like vegetation in a recovery stage (it is assumed that fire disturbance has removed areas of mature shrubs). The south study area includes relatively flat ground with some gentle slopes and a dry drainage. The habitat in the south study area is similar to the habitat in the north study area and is relatively open grassland with some shrubs. Habitat for both the north and south study areas is not highly variable and is representative of a large portion of the remainder of the LJF North lease area. Areas containing laydown areas and unsuitable habitat will not be studied.

The study areas were selected because they are somewhat removed from human activity (except low traffic use on facility access roads and one county road) and contain a large area of

[7] As used in this section, "special status grassland bird species" means grasshopper sparrows, long-billed curlews, loggerhead shrikes and burrowing owls.
[8] The study area and its underlying habitat types are shown on "Figure 1: Areas to be studied for Grassland Birds during Operations Phase" (Response to Additional RAI, Attachment 2, October 2, 2009).

grassland/shrub-steppe habitat (mapped as habitat sub-type "SSB") that is not proposed to be altered during project construction or operations.

(b) Survey Protocol

After completion of construction of the facility, the certificate holder shall survey the 57 transects that were searched before construction in 2006. Surveyors will collect data on the indicator species (grasshopper sparrows and long-billed curlews) and other special status grassland bird species. For all special status grassland bird species observed, the surveyors will record the number of observations of these species and their GPS locations, using the same methodology used in 2006. Special status grassland bird species that fly readily in the surveyor's presence will be tracked visually to attempt to determine defended territories and to limit potential double-counting of individuals. Surveyors will record notes on the general location and behavior of special status grassland bird species (for example, defensive responses, nesting, staging, courtship, non-breeders foraging in loose groups). This plotted data will provide information on the location of special status grassland bird species at distances near and far from turbines and other facilities.

Surveyors will record notes on the location and abundance of common species. Abundant common species that fly readily in the surveyor's presence will be tracked visually to avoid double counting. Horned lark observations will be totaled for each survey area completed in one survey day. The data on the relative abundance and distribution of common species will provide information on the location of common species at distances near and far from turbines and other facilities.

The certificate holder shall conduct the first year of post-construction grassland surveys in the first spring following the beginning of commercial operation of the LJF facility. The certificate holder shall conduct a second year of grassland surveys two to five years after the first survey. The certificate holder will determine when the second survey will be done, in consultation with ODFW and subject to approval by the Department, based on the restoration of grassland cover in areas disturbed during facility construction.

In each survey year, surveyors will complete two walking transect surveys of the north and south study areas (one in April and one in May). A third visit to specific potential burrowing owl dens (based on 2006 data and any newly discovered sites) will be conducted during the period from late May to early July, if the surveyor determines a third visit is needed to confirm use by burrowing owls. The April and May time period includes the seasonal period of staging (pre-nesting) of long-billed curlews (April), the major period of territorial calling of grasshopper sparrows (May) and the nesting period for long-billed curlews and other species (May).

(c) Data Analysis and Reporting

After the first survey year, the certificate holder shall submit a preliminary summary report to the Department. After the second survey year, the certificate holder shall submit a more comprehensive final report. The certificate holder shall submit maps for each survey year, showing transects walked and specific areas of use by the indicator species, other special status grassland bird species and common species (except horned larks). The certificate holder shall overlay a grid system on the mapped "as-built" locations of facility components within the study areas. Using the grid system, the certificate holder shall describe the survey results by area and distance from turbines.

The reports will include a description of vegetation compared to pre-construction conditions as recorded in 2006, including notes on any changes in land use by the landowner, wildfire influences and grazing and noting any areas of intense vegetation impact. Vegetation communities will be sampled by the transect method and a description of plant communities will be provided for each survey year.

The certificate holder shall report on observed changes in use by the indicator species. For example, the report will compare the locations and numbers of grasshopper sparrows plotted during the pre-construction surveys in the north study area to the locations and numbers of this species plotted during the post-construction survey years. The certificate holder shall report on the location of any burrowing owls observed during the transect searches or subsequent visits made to confirm use. The certificate holder shall analyze the locations for all special status grassland bird species (using GPS data) and common species (except horned larks) to calculate distance from turbines or other facilities.[9]

The certificate holder shall evaluate the data to determine if there are changes in the use of the study areas by the two indicator species before and after construction. In addition, the certificate holder shall evaluate the data to determine if there is noticeable difference in the distribution, abundance or behavior of special status grassland bird species or common species relative to turbine locations.

5. Wildlife Reporting and Handling System

The Wildlife Reporting and Handling System (WRHS) is a monitoring program to search for and handle avian and bat casualties found by maintenance personnel during operation of the facility. Maintenance personnel will be trained in the methods needed to carry out this program. This monitoring program includes the initial response, the handling and the reporting of bird and bat carcasses discovered incidental to maintenance operations ("incidental finds").

All avian and bat carcasses discovered by maintenance personnel will be photographed and the data recorded as would be done for carcasses within the formal search sample during scheduled searches. If maintenance personnel discover incidental finds, the maintenance personnel will notify a project biologist. The project biologist must be a qualified independent professional biologist who is not an employee of the certificate holder. The project biologist (or the project biologist's experienced wildlife technician) will collect the carcass or will instruct maintenance personnel to have an on-site carcass handling permittee collect the carcass. The certificate holder's on-site carcass handling permittee must be a person who is listed on state and federal scientific or salvage collection permits and who is available to process (collect) the find on the day it is discovered. The find must be processed on the same day as it is discovered.

During the years in which fatality monitoring occurs, if maintenance personnel discover incidental finds outside the search plots for the fatality monitoring searches, the data will be reported separately from fatality monitoring data. If maintenance personnel discover carcasses within search plots, the data will be included in the calculation of fatality rates. The maintenance personnel will notify a project biologist. The project biologist will collect the carcass or will instruct maintenance personnel to have an on-site carcass handling permittee collect the carcass. As stated above, the on-site permittee must be available to process the find on the day it is

[9] Data on common species cannot be compared to preconstruction data because the 2006 surveys did not record the location or abundance of these species by transect line. GPS data will not be collected for common species.

discovered. The certificate holder shall coordinate collection of state endangered, threatened, sensitive or other state protected species with ODFW. The certificate holder shall coordinate collection of federally-listed endangered or threatened species and Migratory Bird Treaty Act protected avian species with the USFWS.

6. Data Reporting

The certificate holder will report wildlife monitoring data and analysis to the Department. Monitoring data include fatality monitoring program data, raptor nest survey data, WGS survey data for the LJIIA area, WGS incidental observation and assessment reports for the LJIIB area, grassland bird study data and WRHS data. The certificate holder may include the reporting of wildlife monitoring data and analysis in the annual report required under OAR 345-026-0080 or submit this information as a separate document at the same time the annual report is submitted. In addition, the certificate holder shall provide to the Department any data or record generated in carrying out this monitoring plan upon request by the Department.

The certificate holder shall notify USFWS and ODFW immediately if any federal or state endangered or threatened species are killed or injured on the facility site.

The public will have an opportunity to receive information about monitoring results and to offer comment. Within 30 days after receiving the final versions of reports that are required under this plan, the Department will make the reports available to the public on its website and will specify a time in which the public may submit comments to the Department.[10]

7. Amendment of the Plan

This Wildlife Monitoring and Mitigation Plan may be amended from time to time by agreement of the certificate holder and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan and to mitigation actions that may be required under this plan. The Department shall notify the Council of all amendments and mitigation actions, and the Council retains the authority to approve, reject or modify any amendment of this plan or mitigation action agreed to by the Department.

[10] The certificate holder may establish a Technical Advisor Committee (TAC) but is not required to do so. If the certificate holder establishes a TAC, the TAC may offer comments to the Council about the results of the monitoring required under this plan.

Leaning Juniper II Wind Project: Revegetation Plan

[NOVEMBER 20, 2009]

I. Introduction

This plan describes methods and standards for restoration of areas disturbed during the construction of the Leaning Juniper II Wind Power Facility (LJF), excluding areas occupied by permanent facility components (the "footprint").[1] The objective of revegetation is to restore the disturbed areas to pre-disturbance condition or better. The site certificate for the facility requires restoration of these areas. This plan has been developed in consultation with the Oregon Department of Fish and Wildlife (ODFW).

The site certificate describes the area of disturbance anticipated during construction of the LJF. The affected area includes cultivated or otherwise developed agricultural land (cropland) as well as areas of grassland, shrub-steppe habitat and other habitat subtypes (wildlife habitat areas). The intensity of the construction impact will vary. In some areas, the impact will be relatively light, but in other areas, heavy construction activity will remove all vegetation, remove topsoil and compact the remaining subsoil. Where vegetation has been damaged or removed during construction, the certificate holder must restore suitable vegetation. In addition, the certificate holder shall maintain erosion and sediment control measures put in place during construction until the affected areas are restored as described in this plan and the risk of erosion has been eliminated. The plan specifies monitoring procedures to evaluate revegetation success of disturbed wildlife habitat areas. Remedial action may be necessary for wildlife habitat areas that do not show revegetation progress. Additional mitigation may be necessary if revegetation is unsuccessful.

II. Description of the Facility Site

The facility is located in Gilliam County, Oregon. The facility site is on private agricultural land used primarily for livestock grazing and some dry land winter wheat production. Soils are typically loess formations of well-drained, moderately permeable, fertile silt loams over basalt. The area receives approximately 9 inches of precipitation annually, most of which occurs between October 1 and March 31.

The site is within the Columbia Plateau physiographic province. The facility is located on an upland plateau at elevations ranging up to 980 feet, with relief of about 130 feet. Most of the native vegetation within the site boundary has been modified by livestock grazing and past wildfires. Functional mature shrub-steppe and juniper woodland habitat is patchy, occurring in specific locations. Bitterbrush shrub cover is located in the north area west of Highway 19 and shrub-grass sagebrush in residual patches throughout with larger patches just west of Highway 19 and in lower elevation, deeper soil areas of the LJIIB area.[2] Mature juniper tree woodlands with grassland or shrub-grass/sagebrush understories are mostly within a swath just west of Highway 19 and at lower elevations of the eastern portions east of Highway 19 in the LJIIB area. Individual junipers are sparsely scattered in other habitats. Category 2 and 3 open low shrub

[1] This plan is incorporated by reference in the site certificate for the Leaning Juniper II Wind Power Facility and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

[2] The LJIIA and LJIIB areas are described in the *Final Order on Amendment #1*.

habitat is the most abundant native habitat. It consists of low-stature snakeweed and rabbitbrush-dominated shrub lands with patches of sagebrush and native bunchgrass, each with varying degrees of non-native invasive grass and forb species. Perennial grassland is in patches where grazing and other activities have had less intensive land use impacts.

III. Revegetation Methods

The certificate holder shall begin restoration of disturbed areas as soon as possible after completion of facility construction activity in the area to be restored. The certificate holder shall restore areas of disturbance 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 facility construction and during revegetation work. The certificate holder shall restore topsoil to pre-construction condition. The certificate holder shall select the seed mix to apply based on the pre-construction land use, as described below. For affected juniper woodland areas, planting young juniper trees may be preferred over seeds. The certificate holder shall consult with ODFW as described in Section V below regarding appropriate seeding or planting according to site-specific restoration needs.

1. Seed Planting Methods

Planting should be done at the appropriate time of year to facilitate seed germination, based on weather conditions and the time of year when construction-related ground disturbance occurs. The certificate holder shall choose planting methods based on site-specific factors such as slope, erosion potential and the size of the area in need of revegetation. Disturbed ground may require chemical or mechanical weed control before weeds have a chance to go to seed. Two common application methods are described as follows.

(a) Broadcasting

Broadcast the seed mix at the specified application rate. Where feasible, apply half of the total mix in one direction and the second half of mix in the direction perpendicular to first half. Apply weed-free straw from a certified field or sterile straw at a rate of two tons per acre immediately after applying seed. Crimp straw into the ground to a depth of two inches using a crimping disc or similar device. As an alternative to crimping, a tackifier may be applied using hydroseed equipment at a rate of 100 pounds per acre. Prior to mixing the tackifer, visually inspect the tank for cleanliness. If remnants from previous hydroseed applications exist, wash tank to remove remnants. Include a tracking dye with the tackifier to aid uniform application. Broadcasting should not be used if winds exceed five miles per hour.

(b) Drilling

Using an agricultural or range seed drill, drill seed at 70 percent of the recommended application rate to a depth of ¼ inch or as recommended by the seed supplier. Where feasible, apply half of the total mix in one direction and the second half of mix in the direction perpendicular to first half. If mulch has been previously applied, seed may be drilled through the mulch provided the drill is capable of penetrating the straw resulting in seed-to-soil contact conducive for germination.

IV. Restoration of Cropland

The certificate holder shall seed disturbed cropland areas with wheat or other crop seed. The certificate holder shall consult with the landowner and farm operator to determine species composition, seed and fertilizer application rates and application methods.

Cropland areas are successfully revegetated when the replanted areas achieve crop production comparable to adjacent non-disturbed cultivated areas. The certificate holder shall consult with the landowner or farmer to determine whether these areas have been successfully revegetated and shall report to the Department on the success of revegetation in these areas.

V. Restoration of Wildlife Habitat Areas

The certificate holder shall seed all disturbed grassland, shrub-steppe, juniper woodland and other wildlife habitat subtype areas that are not cropland. The certificate holder shall consult with ODFW and the landowner to determine the appropriate seed mix and application rate for these areas, including a combination of grasses, forbs, shrubs and juniper trees based on the characteristics of the affected area. The mix should contain native species selected based on relative availability and compatibility with local growing conditions. Seed mix selection should consider soil erosion potential, soil type, seed availability and the need for using native or native-like species. The certificate holder shall obtain approval of the composition of the seed mix from the Oregon Department of Energy (Department). The certificate holder shall use seed provided by a reputable supplier and complying with the Oregon Seed Law. The certificate holder shall determine the number and size of the juniper tree plants based on the professional judgment of a qualified biologist after a ground survey of actual conditions. The certificate holder shall obtain trees from a qualified nursery or suitable transplants from LJIIB construction zones.

VI. Monitoring

1. Revegetation Record

The certificate holder shall maintain a record of revegetation work for both cropland and wildlife habitat areas. In the record, the certificate holder shall include the date that construction activity was completed in the area to be restored, a description of the affected area (location, acres affected and pre-disturbance condition), the date that revegetation work began and a description of the work done within the affected area. The certificate shall update the revegetation records from time to time, as revegetation work occurs. The certificate holder shall provide copies of these records to the Department at the time of submitting the annual report required under the site certificate.

2. Monitoring Procedures

The certificate holder shall monitor the revegetation of wildlife habitat areas as described in this section, unless the landowner has converted the area to a use inconsistent with the success criteria. The certificate holder shall employ a qualified investigator (an independent botanist or revegetation specialist) to examine all non-cropland revegetation areas to assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria described below.

Weed Control

A qualified investigator shall inspect each revegetation area on an annual basis during the first five years following initial seeding to assess weed growth and to recommend weed control measures. The investigator shall report to the certificate holder, the Department and ODFW following each inspection, describing weed growth and the success of control measures. Based on the Year 5 report (described below), the certificate holder shall confer with the Department and ODFW to develop a weed control plan for subsequent years.

Wildlife Habitat Recovery

After the first growing season following initial seeding (Year 1), a qualified investigator shall inspect each revegetation area to assess revegetation success based on the success criteria and to recommend remedial actions, if needed. The qualified investigator shall reinspect these areas at two years and at four years after the first inspection (Year 3 and Year 5). The investigator shall report to the certificate holder, the Department and ODFW following each inspection. The report shall include the investigator's assessment of whether the revegetated areas are trending toward meeting the success criteria and any remedial actions recommended.

Based on the Year 5 report, the certificate holder shall confer with the Department and ODFW to develop an action plan for subsequent years. If an area is not trending toward meeting the success criteria at Year 5 and has not been converted by the landowner to an inconsistent use, the certificate holder may propose remedial action and additional monitoring based on an evaluation of site capability. As an alternative, the certificate holder may conclude that revegetation of the area was unsuccessful and propose appropriate mitigation for the loss of habitat quality and quantity. The certificate holder shall implement the action plan, subject to the approval of the Department.

The certificate holder's qualified investigator shall evaluate whether a wildlife habitat area is trending toward meeting the success criteria by comparing the revegetation area to a reference area. In consultation with ODFW, the investigator shall choose reference sites near the revegetation area to represent the target conditions for the revegetation effort. The investigator shall select one or more reference sites that closely resemble the pre-disturbance characteristics of the revegetation area as indicated by site conditions, including vegetation density, relative proportion of desirable vegetation and species diversity of desirable vegetation. "Desirable vegetation" means those species included in the seed mix or native or native-like species, excluding noxious weeds. The investigator shall consider land use patterns, soil type, local terrain and noxious weed densities in selecting reference sites. It is likely that different reference sites will be needed to represent different pre-disturbance habitat conditions of the disturbed areas.

During the monitoring visits in Year 1, Year 3 and Year 5, the certificate holder's qualified investigator shall compare the revegetation area to the selected reference sites, unless some event (such as wildfire or tilling) has changed the vegetation conditions of a reference site so that it no longer represents the pre-disturbance conditions of the revegetation area. If such events have eliminated all suitable reference sites for a revegetation area, the investigator, in consultation with ODFW, shall select one or more new reference sites.

Within each revegetation area, the investigator shall evaluate the progress of wildlife habitat recovery in comparison to the reference sites. The investigator shall evaluate the following site conditions (both within the revegetation area and within the reference sites):

- Degree of erosion due to disturbance activities (high, moderate or low).
- Vegetation density.
- Relative proportion of desirable vegetation as determined by the average number of stems of desirable vegetation per square foot or by a visual scan of the area, noting overall recovery status.
- Number of surviving juniper trees and overall vigor, height of tree and the extent of branching.
- Species diversity of desirable vegetation.

The certificate holder shall report the investigator's findings and recommendations regarding wildlife habitat recovery and revegetation success on an annual basis to the Department (as part of the annual report on the facility) and to ODFW.

3. Success Criteria

In each monitoring report to the Department, the certificate holder shall provide an assessment of revegetation success for all previously-disturbed wildlife habitat areas. A wildlife habitat area is successfully revegetated when its habitat quality is equal to, or better than, the habitat quality of the reference site as measured by the site conditions listed above. Juniper planting will be considered successful when, in the investigator's judgment, one in five have survived.

When the Department finds that the condition of a wildlife habitat area satisfies the criteria for revegetation success, the Department shall conclude that the certificate holder has met its restoration obligations for that area. If the Department finds that the landowner has converted a wildlife habitat area to a use that is inconsistent with these success criteria, the Department shall conclude that the certificate holder has no further obligation to restore the area for wildlife habitat uses.

4. Remedial Action

After each monitoring visit, the certificate holder's qualified investigator shall report to the certificate holder regarding the revegetation progress of each wildlife habitat area. The investigator shall make recommendations to the certificate holder for reseeding or other remedial measures for areas that are not showing progress toward achieving revegetation success. The certificate holder shall take appropriate action to meet the objectives of this revegetation plan. On an annual basis as part of the annual report on the facility, the certificate holder shall report to the Department the investigator's recommendations and the remedial actions taken. The Department may require reseeding or other remedial measures in those areas that do not meet the success criteria.

If a wildlife habitat area is damaged by wildfire during the first five years following initial seeding, the certificate holder shall work with the landowner to restore the damaged area. The certificate holder shall continue to report on revegetation progress during the remainder of

the five-year period. The certificate holder shall report the damage caused by wildfire and the cause of the fire, if known.

VII. Amendment of the Plan

This Revegetation Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the Department.

Leaning Juniper II Wind Project: Habitat Mitigation Plan

[NOVEMBER 20, 2009]

I. Introduction

This plan describes methods and standards for preservation and enhancement of an area of land near the Leaning Juniper II Wind Power Facility (LJF) to mitigate for the impacts of the facility on wildlife habitat.[1] This plan addresses mitigation for both the permanent impacts of facility components and the temporal impacts of facility construction. The certificate holder shall protect and enhance the mitigation area as described in this plan. This plan specifies habitat enhancement actions and monitoring procedures to evaluate the success of those actions. Remedial action may be necessary if progress toward habitat enhancement success is not demonstrated in any part of the mitigation area.

II. Description of the Impacts Addressed by the Plan

The estimated land area that could be occupied by permanent facility components (the "footprint") is approximately 111 acres, based on the final design configuration for LJIIA and the expected configuration for LJIIB.[2] In addition to the footprint impacts, construction of the facility could disturb approximately 850 acres. Although much of the area is cropland, habitat that could be affected by construction disturbance includes areas of perennial bunchgrass, desirable shrubs and juniper trees. After disturbance, the recovery of perennial bunchgrass species to a mature stage might take five to seven years; recovery of juniper trees and desirable shrubs such as bitterbrush and sagebrush might take ten to 30 years to reach maximum height and vertical branching. Even where recovery of these habitat subtypes is successful, there is a loss of habitat quality during the period of time needed to achieve recovery (temporal impact).

III. Calculation of the Size of the Mitigation Area

The actual footprint and construction disturbance areas cannot be determined until the final design layout of the facility is known. Before beginning construction of any phase the facility, the certificate holder shall provide to the Oregon Department of Energy (Department) a map showing the final design configuration of that phase and a table showing the estimated areas of permanent impacts and construction area impacts on habitat (by category, habitat types and habitat subtypes) in that phase. The certificate holder shall calculate the size of the mitigation area, as illustrated below, based on the final design configuration of the facility. The certificate holder shall implement the habitat enhancement actions described in this plan, after the Department has approved the size of the mitigation area. This plan does not address additional mitigation that might be required under the Leaning Juniper II Wildlife Monitoring and Mitigation Plan.

[1] This plan is incorporated by reference in the site certificate for the Leaning Juniper II Wind Power Facility and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

[2] The LJIIA and LJIIB areas are described in the *Final Order on Amendment #1*. The expected acres of permanent impact for LJIIA are shown in Table 6 of the Final Order. The acres of permanent impact for LJIIB are shown in Table 7.

The mitigation area must be large enough to meet the habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW) described in OAR 635-415-0025. The ODFW goals require mitigation to achieve "no net loss" of habitat in Categories 2, 3 and 4 and a "net benefit" in habitat quantity or quality for impacts to habitat in Categories 2 and 5.

For the footprint impacts, the mitigation area includes two acres for every one acre of Category 2 habitat affected (a 2:1 ratio) and one acre for every acre of footprint impacts to Category 3, 4 and 5 habitat (a 1:1 ratio). The 2:1 ratio for Category 2 is intended to meet the ODFW goals of "no net loss" of Category 2 habitat and "net benefit" of habitat quantity for impacts to both Category 2 and Category 5 habitat. The 1:1 ratio for the footprint impacts to Category 3, 4 and 5 habitat is intended to meet the ODFW goal of "no net loss" of habitat in these categories.

To mitigate for construction impacts outside the footprint, the mitigation area includes ½ acre for every Category 2 or 3 SSA (shrub-grass; sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grass), SSE (bitterbrush-buckwheat-bunchgrass-annual grass) and WJ (juniper woodland) habitat affected (a 0.5:1 ratio). This portion of the mitigation area is intended to address the temporal loss of habitat quality during the recovery of SSA, SSE and WJ habitat disturbed during construction. The size of this portion of the mitigation area is based on the assumption that restoration of disturbed SSA, SSE and WJ habitat is successful, as determined under the Leaning Juniper II Revegetation Plan. If the revegetation success criteria are not met in the affected areas, then the Council may require the certificate holder to provide additional mitigation.

For the first phase of the facility (LJIIA), the areas of impact within each affected habitat category and the corresponding mitigation area for each category are calculated as follows, based on the final design habitat assessment.

Category 2
Footprint impacts: 6.28 acres
Temporal impacts to SSA and SSE: 18.19 acres
Mitigation area: (6.28 acres x 2) + (18.19 acres x 0.5) = 21.66 acres

Category 3
Footprint impacts: 13.48 acres
Temporal impacts to SSA: 1.8 acres
Mitigation area: 13.48 acres + (1.8 acres x 0.5) = 14.38 acres

Category 4
Footprint impacts: 1.38 acres
Mitigation area: 2.1 acres

Category 5
Footprint impacts: 1.34 acres
Mitigation area: 1.34 acres

Total mitigation area for LJIIA (rounded to nearest whole acre): 39 acres

For the second phase of the facility (LJIIB), areas of potential impact within each affected habitat category and the corresponding mitigation area for each category are calculated as follows, based on maximum habitat impact estimates:[3]

Category 2
Footprint impacts: 12.16 acres
Temporal impacts to SSA, SSE and WJ: 21.86 acres
Mitigation area: (12.16 acres x 2) + (21.86 acres x 0.5) = 35.26 acres

Category 3
Footprint impacts: 16.07 acres
Temporal impacts to SSA: 0.31 acres
Mitigation area: 16.07 acres + (0.31 acres x 0.5) = 16.23 acres

Category 4
Footprint impacts: 1.44 acres
Mitigation area: 1.44 acres

Total mitigation area for LJIIB (rounded to nearest whole acre): 53 acres

IV. Description of the Mitigation Area

The certificate holder shall select a mitigation area in proximity to the facility where habitat protection and enhancement are feasible consistent with this plan.[4] The applicant identified a 440-acre parcel in a relatively remote setting where habitat protection and enhancement are feasible and sufficient land area is available to accommodate the size of the mitigation area, based on a worst-case estimate.[5] Before beginning construction of any phase of the facility, the certificate holder shall determine the final size of the mitigation area needed for that phase. The certificate holder shall determine the boundaries of the mitigation area in consultation with ODFW and the affected landowners and subject to the approval of the Department. The final mitigation area must contain suitable habitat to achieve the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5 through appropriate enhancement actions. Before beginning construction of any phase of the facility, the certificate holder shall acquire the legal right to create, maintain and protect the habitat mitigation area needed for that phase for the life of the facility by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Department.[6]

V. Habitat Enhancement Actions

The objectives of habitat enhancement are to protect habitat within the mitigation area from degradation and to improve the habitat quality of the mitigation area. By achieving these goals,

[3] The maximum impact estimates are shown in Table 8 of the *Final Order on Amendment #1*.
[4] OAR 635-415-0005 defines "in-proximity habitat mitigation" as follows: "habitat mitigation measures undertaken within or in proximity to areas affected by a development action. For the purposes of this policy, 'in proximity to' means within the same home range, or watershed (depending on the species or population being considered) whichever will have the highest likelihood of benefiting fish and wildlife populations directly affected by the development."
[5] The 440-acre parcel is described in Section IV.4.(b)(F) of the Final Order on the Application.
[6] As used in this plan, "life of the facility" means continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

the certificate holder can address the permanent and temporal habitat impacts of the LJF and meet the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5. The certificate holder shall initiate the habitat enhancement actions for each phase of the facility as soon as the final design configuration of the that phase is known and the size of the mitigation area has been determined and approved by the Department. The certificate holder shall implement the following enhancement actions:

1) Modification of Livestock Grazing Practices. The certificate holder shall restrict grazing within the habitat mitigation area. Eliminating livestock grazing within the mitigation area during most of the year will enable recovery of native bunchgrass and sagebrush in areas where past grazing has occurred, resulting in better vegetative structure and complexity for a variety of wildlife. Reduced livestock grazing may be used as a vegetation management tool, limited to the period from February 1 through April 15.

2) Shrub Planting. The certificate holder shall plant sagebrush shrubs in locations where existing sagebrush is stressed. The certificate holder shall determine the size of the shrub-planting area based on the professional judgment of a qualified biologist after a ground survey of actual conditions. The size of the shrub-planting area will depend on the available mitigation area and opportunity for survival of planted shrubs. The shrub survival rate at four years after planting is an indicator of successful enhancement of habitat quality to Category 2. Accordingly, although a minimum 5-acre area of shrub planting is anticipated, the certificate holder may choose to plant a larger area. The certificate holder shall complete the initial sagebrush planting within one year after the beginning of construction of the LJF. Supplementing existing but disturbed sagebrush areas with sagebrush seedlings would assist the recovery of this valuable shrub-steppe component. The certificate holder shall obtain shrubs from a qualified nursery or grow shrubs from native seeds gathered from the mitigation area. The certificate holder shall identify the area to be planted with sagebrush shrubs after consultation with ODFW and subject to final approval by the Department. The certificate holder shall mark the planted sagebrush clusters at the time of planting for later monitoring purposes and shall keep a record of the number of shrubs planted.

3) Tree Planting. If areas of juniper woodland are disturbed during construction, the certificate holder shall plant juniper trees in the mitigation area in locations of deeper soils near canyon bottoms. The certificate holder shall assess specific locations and provide a map of possible planting locations to ODFW and the Department before planting begins. The certificate holder shall determine the number and size of the juniper tree plants based on the professional judgment of a qualified biologist after a ground survey of actual conditions. The size of the tree-planting area will depend on the available mitigation area and opportunity for survival of planted trees. The tree survival rate at four years after planting is an indicator of successful enhancement of habitat quality to Category 2. The certificate holder shall obtain trees from a qualified nursery or suitable transplants from LJIIB construction zones. The certificate holder shall identify the area to be planted with juniper trees after consultation with ODFW and subject to final approval by the Department. The certificate holder shall mark the planted trees at the time of planting for later monitoring purposes and shall keep a record of the number of trees planted.

4) Weed Control. The certificate holder shall implement a weed control program. Under the weed control program, the certificate holder shall monitor the mitigation area to locate weed infestations. The certificate holder shall continue weed control monitoring, as needed, for the life of the facility. As needed, the certificate holder shall use appropriate methods to control weeds. Weed control on the mitigation site will reduce the spread of noxious weeds within the habitat mitigation area and on any nearby grassland, CRP or cultivated agricultural land. Weed control will promote the growth of desirable native vegetation and planted sagebrush. The certificate holder may consider weeds to be successfully controlled when weed clusters have been eradicated or reduced to a non-competing level. Weeds may be controlled with herbicides or hand-pulling. The certificate holder shall notify the landowner of the specific chemicals to be used on the site and when spraying will occur. To protect locations where young desirable forbs may be growing, spot-spraying may be used instead of total area spraying.

5) Fire Control. The certificate holder shall implement a fire control plan for wildfire suppression within the mitigation area. The certificate holder shall provide a copy of the fire control plan to the Department before starting habitat enhancement actions. The certificate holder shall include in the plan appropriate fire prevention measures, methods to detect fires that occur and a protocol for fire response and suppression. The certificate holder shall maintain fire control for the life of the facility. If any part of the mitigation area is damaged by wildfire, the certificate holder shall assess the extent of the damage and implement appropriate actions to restore habitat quality in the damaged area.

6) Nest platforms. The certificate holder shall construct at least one artificial raptor nest platform in the mitigation area tailored to the opportunities of the site, using best professional judgment of raptor use in the general area. The certificate holder may construct more than one nest platform based on the availability of suitable locations. The certificate holder shall maintain the nest platforms for the life of the facility.

7) Habitat Protection. The certificate holder shall restrict uses of the mitigation area that are inconsistent with the goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5.

VI. Monitoring

1. Monitoring Procedures

The certificate holder shall hire a qualified investigator (an independent botanist, wildlife biologist or revegetation specialist) to conduct a comprehensive monitoring program for the mitigation area. The purpose of this monitoring is to evaluate on an ongoing basis the protection of habitat quality, the results of enhancement actions and the use of the area by avian and mammal species, especially during the wildlife breeding season.

The investigator shall monitor the habitat mitigation area for the life of the facility beginning in the year following the initial sagebrush planting. The investigator shall visit the site as necessary to carry out the following monitoring procedures:

1) Annually assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria.

2) Annually record environmental factors (such as precipitation at the time of surveys and precipitation levels for the year).

3) Annually record any wildfire that occurs within the mitigation area and any remedial actions taken to restore habitat quality in the damaged area.

4) Annually assess the success of the weed control program and recommend remedial action, if needed.

5) Assess the recovery of native bunchgrass and natural recruitment of sagebrush resulting from removal of livestock grazing pressure by comparing the quality of bunchgrass and sagebrush cover at the time of each monitoring visit with the quality observed in previous monitoring visits and as observed when the mitigation area was first established. The investigator shall establish photo plots of naturally recovering sagebrush and native bunchgrass during the first year following the beginning of construction of the LJF. The investigator shall take comparison photos in the first year and in every other year thereafter until the subject vegetation has achieved mature stature. The investigator shall determine the extent of successful recovery of native bunchgrass based on measurable indicators (such as, signs of more abundant seed production) and shall report on the progress of recovery within in the monitoring plots. The investigator shall report on the timing and extent of any livestock grazing that has occurred within the mitigation area since the previous monitoring visit.

6) Assess the survival rate and growth of planted sagebrush. At the time of planting, sagebrush clusters will be marked for the purpose of monitoring. The investigator shall select several planted clusters for photo monitoring and shall take close-up and long-distance digital images of each selected cluster during each monitoring visit. The certificate holder shall determine the number of clusters to be photo-monitored at the time of planting, in consultation with the Department and ODFW, based on the number of clusters planted. The investigator shall take comparison photos in the first year following the initial sagebrush planting and in every other year thereafter until the surviving planted sagebrush has achieved mature stature. In each monitoring year, the investigator shall determine and report the survival rate of planted sagebrush. Based on past experience of restoration specialists for other sagebrush planting projects, a survival rate as high as 50 percent can be achieved if there are years of high soil moisture, but a more typical survival rate is 2 surviving shrubs per 10 planted (20 percent) after four years. Shrub-planting will be considered successful if a 20-percent survival rate is achieved after four years. The investigator shall recommend remedial action when, in the investigator's judgment, the survival rate of planted sagebrush is inadequate to demonstrate a trend toward an improvement in habitat quality.

7) Assess the survival rate and growth of planted juniper trees. At the time of planting, juniper trees will be marked for the purpose of monitoring. The investigator shall select several planted trees for photo monitoring and shall take close-up and long-distance digital images of each selected tree during each monitoring visit. The certificate holder shall determine the number of trees to be photo-monitored at the time of planting, in consultation with the Department and ODFW, based on the number of trees planted. The investigator shall take comparison photos in the first

year following planting and in every other year thereafter until the surviving planted trees have achieved mature stature. In each monitoring year, the investigator shall determine and report the survival rate of planted trees and shall note overall vigor, height of tree and the extent of branching. Based on past experience of restoration specialists, one in five planted juniper trees may typically survive. Juniper planting will be considered successful when, in the investigator's judgment, one in five have survived. The investigator shall recommend remedial action when, in the investigator's judgment, the survival rate is inadequate to demonstrate a trend toward an improvement in habitat quality.

8) Between April 21 and May 21 beginning in the first spring season after the beginning of construction of the LJF, conduct an area search survey of avian species. An "area search" survey consists of recording all birds seen or heard in specific areas (for example, square or circular plots that are 5 to 10 acres in size). Area searches will be conducted during morning hours on days with low or no wind. The investigator shall determine the number searches and the number of search areas in consultation with ODFW. The investigator shall repeat the area search survey every five years during the life of the facility.

9) Beginning in the first year after the beginning of construction of the LJF and repeating every five years during the life of the facility, the investigator shall record observations of special status plant or wildlife species (federal or state threatened or endangered species and state sensitive species) during appropriate seasons for detection of these species.

The certificate holder shall report the investigator's findings and recommendations regarding the monitoring of the mitigation area to the Department and to ODFW on an annual basis. In the annual report, the certificate holder shall describe all habitat mitigation actions carried out during the reporting year. The report to the Department may be included as part of the annual report on the LJF.

2. Success Criteria

Mitigation of the permanent and temporal habitat impacts of the facility may be considered successful if the certificate holder protects and enhances sufficient habitat within the mitigation area to meet the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5. The certificate holder must protect the quantity and quality of habitat within the mitigation area for the life of the facility. ODFW has advised the Department that protection of habitat alone (without enhancement activity) will not meet the intent of the "net benefit" goal.

The certificate holder must protect a sufficient quantity of habitat in each category to meet the mitigation area requirements calculated under Section III based on the final design configuration of each phase of the facility. The certificate holder shall determine the actual mitigation area requirements for each phase, subject to Department approval, before beginning construction of the that phase. If the land selected for the mitigation area does not already contain sufficient habitat in each category to meet these requirements, then the certificate holder must demonstrate improvement of habitat quality sufficient to change lower-value habitat to a higher value (for example, to convert Category 3 habitat to Category 2). The certificate holder

may demonstrate improvement of habitat quality based on evidence of indicators such as increased avian use by a diversity of species, survival of planted shrubs and juniper trees, more abundant seed production of desirable native bunchgrass, natural recruitment of sagebrush and successful weed control. If the certificate holder cannot demonstrate that the habitat mitigation area is trending toward the habitat quality goals described above within four years after the initial sagebrush planting, the certificate holder shall propose remedial action. The Department may require supplemental planting or other corrective measures.

After the certificate holder has demonstrated that the habitat quantity goals have been achieved, the investigator shall verify, during subsequent monitoring visits, that the mitigation area continues to meet the ODFW "no net loss" and "net benefit" goals described above. The investigator shall recommend remedial action if the habitat quality within the mitigation area falls below the habitat quantity goals listed above. The Department may require supplemental planting, other corrective measures and additional monitoring as necessary to ensure that the habitat quantity goals are achieved and maintained.

VII. Amendment of the Plan

This Habitat Mitigation Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the Department.