

**CERTIFICATE HOLDER'S REQUEST FOR AMENDMENT #2 TO THE SITE  
CERTIFICATE FOR THE BIGLOW CANYON WIND FARM**

Pursuant to OAR 345-027-0050, Portland General Electric Company ("PGE"), the holder of the Amended Site Certificate for the Biglow Canyon Wind Farm dated November 3, 2006 (the "Site Certificate"), requests to amend the Site Certificate to modify the facility and the Site Certificate as described in Sections 1.3 and 1.4 of this request. The requested modifications are:

(1) Amend the Site Certificate and Attachments A, B and C to the Final Order of June 30, 2006 as follows:

(a) The Certificate Holder requests modification of one sentence of Condition 60 of the Site Certificate so that the certificate holder may use its own qualified employees to perform monitoring and mitigation activities under Condition 60.

(b) The Certificate Holder requests modification of one sentence of the Wildlife Monitoring and Mitigation Plan (Attachment A to the Final Order), so that the Certificate Holder may use its own qualified employees for some monitoring and mitigation tasks required under the plan.

(c) The certificate holder requests modification of one sentence of the Revegetation Plan (Attachment B to the Final Order) so that the certificate holder may use its own qualified employees to conduct monitoring of seeded grassland, shrub-steppe and Conservation Reserve Program (CRP) areas.

(d) The certificate holder requests modification of one sentence of the Habitat Mitigation Plan (Attachment C to the Final Order) so that the certificate holder may use its own qualified employees to perform monitoring activities under the plan.

(2) Expand the facility site to accommodate the following:

(a) Seven temporary crane paths, totaling approximately 5.1 miles;

(b) Approximately 4.1 miles of permanent linear collector lines;

(c) A permanent access road of approximately 0.68 miles; and

(d) Expand one wind turbine corridor to full width.

(3) Add the following additional related or supporting facilities within the site already approved by the Council:

(a) Additional access road segments; and

(b) A relocated collection line segment.

(4) Make the following changes:

- (a) Remove from the Site Certificate a transmission line that will be constructed and owned by the Bonneville Power Administration;
- (b) Revise the list of noise sensitive receptors to formally remove a property that includes two travel trailers but no legal, permanent residence;
- (c) Revise the habitat mitigation site to reflect a change approved by NRCS and ODFW;
- (d) Provide survey information for an alternative turbine corridor near Klondike Road in the southern portion of the project site.
- (e) Revise the habitat impacts calculations to account for changes to the facility (new and expanded facilities, and deletion of the BPA transmission line); and
- (f) Revise the estimated cost of decommissioning, consistent with changes to the facility and site proposed in this amendment request.

**SECTION 1 INFORMATION REQUIRED PURSUANT TO OAR 345-027-0060(1)**

OAR 345-027-0060 sets forth the required contents of a request to amend a site certificate. The discussion below provides the information required by OAR 345-027-0060.

**1.1 Certificate Holder Information**

Name and mailing address of the Certificate Holder:

Portland General Electric Company  
121 S.W. Salmon Street  
Portland, OR 97204

Name, mailing address and telephone number of individual responsible for submitting the request:

Rick Tetzloff  
Portland General Electric Company  
121 S.W. Salmon Street  
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Portland, OR 97204  
503-464-8508

**1.2 Description of the Facility**

The proposed facility, referred to as the Biglow Canyon Wind Farm, is described in Exhibits B and C of the ASC and Section III of the Site Certificate. The Certificate Holder is proposing to alter the related or supporting facilities and the site in the manner described in this

amendment request. Figure 1 accompanying this amendment request shows the facility and site as they would be if the Council approves this request; Figure 1a (“Overview of Proposed Modifications”) highlights the proposed modifications to the facility and site as previously approved by the Council.

### 1.3 Description and Analysis of the Proposed Changes

OAR 345-027-0060(1)(c) requires that an amendment request include “a detailed description of the proposed change and certificate holder’s analysis of the proposed change under the criteria of OAR 345-027-0050(1).”

The Certificate Holder is proposing the following actions related to the facility and the Site Certificate:

(1) Amendments to allow Certificate Holder to use its own qualified employees:

(a) Amendment to Condition 60: The Certificate Holder is requesting that Condition 60 be amended as described in Section 1.4 of this amendment request in order to allow the Certificate Holder the option to use its own qualified employees to perform monitoring and mitigation activities under Condition 60.

(b) Amendment to Wildlife Monitoring and Mitigation Plan: The Certificate Holder is requesting that the Wildlife Monitoring and Mitigation Plan be amended as described in Section 1.4 of this amendment request in order to allow the Certificate Holder the option to use its own qualified employees to perform some monitoring and mitigation activities required under the plan. An independent third-party biological monitor would still be required for the Fatality Monitoring Program and the Avian Use and Behavior Surveys.

(c) Amendment to Revegetation Plan: The Certificate Holder is requesting that the Revegetation Plan be amended as described in Section 1.4 of this amendment request in order to give the Certificate Holder the option of using its own qualified employees to conduct monitoring of disturbed grassland, shrub-steppe and CRP areas that have been seeded for revegetation.

(d) Amendment to Habitat Mitigation Plan: The Certificate Holder is requesting that the Habitat Mitigation Plan be amended as described in Section 1.4 of this amendment request in order to give the Certificate Holder the option of using its own qualified employees to conduct monitoring activities required under the plan.

(2) Expand the facility site to accommodate the following, as depicted on Figure 1a (“Overview of Proposed Modifications”):

(a) Seven temporary crane paths, totaling approximately 5.1 miles. The crane paths will be used during construction in order to move cranes between turbine corridors.

(b) Approximately 4.1 miles of permanent linear collector lines. As shown on Figure 1a, three new segments of collector lines (labeled “Electrical Route Added”) are being added outside of previously approved corridors.

(c) A permanent access road of approximately 0.68 miles. The new access road extends from Herin Lane east to a turbine corridor.

(d) Expand one wind turbine corridor to full width. This area consists of the western half of the northern end of one turbine string, shown on Figure 1a as "Full Corridor Width and Facilities Restored." The full corridor width was originally included as part of a turbine string in the ASC (and included in all relevant surveys in the ASC). The western half was removed from the site in the ASC Supplement (see Figure C-2a of the Supplement) because the property owner had not granted the rights necessary to site the facility. Those rights have now been obtained, and the Certificate Holder is proposing to add the western half of the corridor as part of the facility and site.

(3) Add the following additional related or supporting facilities within the site already approved by the Council:

(a) Additional access road segments. As shown on Figure 1a, the Certificate Holder is proposing two new access road segments within corridors that have previously been surveyed and included in the facility site.

(b) A relocated collection line segment. As shown on Figure 1a, the Certificate Holder is proposing a minor relocation of a collector line within an approved turbine corridor.

(4) Make the following changes:

(a) Remove from the Site Certificate a transmission line that will be constructed and owned by the Bonneville Power Administration. Section III.A.2.b of the Site Certificate describes two transmission alternatives for Biglow Canyon. PGE intends to develop the Biglow Canyon Wind Farm under the second transmission alternative, with a new substation located near the center of the Biglow Canyon Wind Farm site. From that substation, a BPA 230-kV transmission line would connect to BPA's John Day substation. Project power would be stepped up from 34.5-kV to 230-kV at the new project substation. As discussed in correspondence included as Attachments 5 and 6, the BPA transmission line should not be considered a related or supporting facility for the Biglow Canyon Wind Farm because it will be constructed and owned by BPA (as described in the BPA Record of Decision for the Klondike III/Biglow Canyon Wind Integration Project, dated October 25, 2006 and included as Attachment 7 to this amendment request). The Certificate Holder is proposing amendments to the Site Certificate to remove this transmission line as a related or supporting facility.

(b) Revise the list of noise sensitive receptors to formally remove a property that includes two travel trailers but no legal, permanent residence. Section V.1(a) of the Final Order of June 30, 2006 addresses compliance with DEQ noise regulations. Table 12 of the Final Order identifies 25 "noise sensitive properties" identified by Orion as having the potential of receiving hourly L<sub>50</sub> noise levels equaling or exceeding 36 dBA from the Biglow Canyon Wind Farm. The Certificate Holder requests that one of those properties, identified in Table 12 as R14, no longer be considered a "noise sensitive property" because the only sleeping accommodations on the property consist of two travel trailers, which cannot legally be used as

residences. Section 1.6(b)(1) of this amendment request addresses in more detail the Certificate Holder's rationale.

(c) Revise the habitat mitigation site. The Certificate Holder views this as an informational matter, given that the location of the habitat mitigation site in the Habitat Mitigation Plan (Exhibit C to the Final Order) is general. The mitigation site, however, has been depicted on project plans, and the Certificate Holder therefore wishes to clarify for the Council that a triangular area at the northeast corner of the mitigation site has been removed, and replaced with an area of equal size (approximately 20 acres) contiguous to the north side of the previously depicted mitigation site. Orion, the prior certificate holder, consulted with and received approval from both the Natural Resources Conservation Service and ODFW regarding this change.

(d) Provide resource survey information for an alternative turbine corridor near Klondike Road in the southern portion of the project site. This alternative corridor was included in the ASC Supplement, but was not fully surveyed for cultural resources, rare plants, or wetlands.

(e) Revise the habitat impacts calculations to account for changes to the facility (new and expanded facilities, and deletion of the BPA transmission line). Attachment 11 provides revised calculations of temporary and permanent habitat impacts, taking into account proposed expansion of the site as well as removal of the BPA transmission line as a related or supporting facility. Permanent impacts to Category 3 and Category 4 habitat increase slightly, from 11.25 acres to 11.92 acres.

(f) Revise the estimated cost of decommissioning, consistent with changes to the facility and site proposed in this amendment request. Attachment 12 provides revised retirement cost estimates for the Biglow Canyon Wind Farm, based on the changes to the facility and the site proposed in this amendment request.

Under OAR 345-027-0050, a site certificate amendment request is required if a site certificate holder proposes to change the site boundary or otherwise to design, construct, operate or retire a facility in a manner different from the description in the site certificate and the proposed change meets one of four criteria, discussed below. The proposed changes in this amendment request trigger a site certificate amendment pursuant all four criteria.

1.3.1 *"Could result in a significant adverse impact that the Council did not evaluate and address in the final order granting a site certificate affecting any resource protected by applicable standards in Divisions 22 and 24 of this chapter."*

Response: The proposed changes to the facility and site, without appropriate site certificate conditions, could result in significant adverse impacts that were not previously addressed by the Council. For example, the Cultural Resource Survey completed in conjunction with this amendment request indicates the need to mitigate for potential impacts to resources that previously would not have been affected. Therefore, a site certificate amendment is appropriate.

1.3.2 *“Could result in a significant adverse impact that the Council did not evaluate and address in the final order granting a site certificate affecting geographic areas or human, animal or plant populations.”*

Response: The proposed changes include expansion of the facility site onto lands not fully surveyed previously for resources protected under Council rules. Therefore, a site certificate amendment is necessary.

1.3.3 *“Could impair the certificate holder’s ability to comply with a site certificate condition; or”*

Response: For the reasons explained in Section 1.5.1(g) of this amendment request, the Certificate Holder does not believe that its ability to comply with the substantive obligations for wildlife monitoring and mitigation, revegetation monitoring or habitat mitigation monitoring will be impaired if the Certificate Holder has the option of using its own qualified employees for those purposes. However, Condition 60 directly requires the use of independent third party monitors, and use of independent third parties is required by Attachments A, B and C of the Final Order, which are part of the Site Certificate by reference. Therefore, in order to have to option of using its own qualified employees without violating the Site Certificate, an amendment to the Site Certificate is necessary.

1.3.4 *“Could require a new condition or change to a condition in the site certificate.”*

Response: The Certificate Holder is requesting a change to Condition 60, as well as to the Wildlife Monitoring and Mitigation Plan and the Revegetation Plan. The Wildlife Monitoring and Mitigation Plan and the Revegetation Plan both contain provisions indicating that amendment to the plans may be made without amendment of the Site Certificate. However, the Council retains the right to approve, reject or modify any amendment to the Wildlife Monitoring and Mitigation Plan or the Revegetation Plan. Given the Council’s final authority over such an amendment, the Certificate Holder is requesting that the Council approve the requested amendments to the Wildlife Monitoring and Mitigation Plan and the Revegetation Plan.

In addition, the Certificate Holder is proposing additional conditions to address potential impacts of the expansion of the site and facilities, as further described in this amendment request.

#### 1.4 Proposed Changes to Site Certificate

OAR 345-027-0060(d) requires that a request to amend a site certificate must include “the specific language of the site certificate, including affected conditions, that the certificate holder proposes to change, add or delete by an amendment.” Attachment 1 to this amendment request is a “redline” version of the Site Certificate, showing the proposed changes. The substantive changes to the Site Certificate are found on pages 2-5, 6-7, 9, 14, 16-17, 19-20, and 27 of the redline.

Section III.A: The Certificate Holder is proposing several changes at pp. 2-5 in order to remove the transmission line as a related or supporting facility, add the temporary crane paths as related or supporting facilities, and update total length or collector lines and access roads to account for changes in this amendment request, and modify the description of access roads.

Conditions 5, 7 and 9 (pp. 6-7): The Certificate Holder is proposing deleting Conditions 5 and 7 and the first part of Condition 9, because the Certificate Holder will not build the project in one phase.

Conditions 6 and 8 (pp. 6-7): The Certificate Holder is proposing to delete references to the "230 kV or 500 kV transmission line" because it will not be a related or supporting facility, and insert references to the temporary crane paths, which will be related or supporting facilities.

Condition 21 (p. 9): The Certificate Holder is proposing to remove a reference to the transmission lines.

Condition 60 (p. 14): The Certificate Holder is proposing to delete a portion of one sentence of the third paragraph, so that qualified employees of the Certificate Holder may monitor active raptor nest sites during the sensitive period:

"In addition, the certificate holder shall flag the boundaries of the 1300-foot buffer area, or such lesser distance as may be approved by the Department in the event there is an adequate physical barrier between the nest site and the construction impacts, and shall instruct construction personnel to avoid any unnecessary activity within the buffer area. The certificate holder shall direct a qualified independent third-party biological monitor, as approved by the Department, 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)."

Wildlife Monitoring and Mitigation Plan: The Certificate Holder is requesting the modification of the last sentence of the second paragraph of the plan, so that the Certificate Holder is required to use an independent third party for the Fatality Monitoring Program and the Avian Use and Behavior Surveys, but not for the Raptor Nest Surveys or the Wildlife Incident Response and Handling System. The Wildlife Monitoring and Mitigation Plan is Attachment A to the Final Order. The sentence the Certificate Holder is requesting be modified is marked with a strike-through:

“The certificate holder shall use experienced personnel to manage 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 Incident Response and Handling System~~ the Fatality Monitoring Program and the Avian Use and Behavior Surveys, the certificate holder shall direct a qualified independent third-party biological monitor, as approved by the Department, to perform the monitoring tasks.”

Revegetation Plan: The Certificate Holder is also requesting the deletion of a portion of one sentence on page B-2 of the Revegetation Plan. Compliance with the Revegetation Plan is required under Condition 29 and Condition 62 of the Site Certificate, but the Revegetation Plan is Attachment B to the Final Order. The requested change would give PGE the option of using its own qualified employees to perform the required work:

“The site certificate holder shall direct a qualified ~~independent third party~~ botanist or revegetation specialist, as approved by the Department, to conduct monitoring of seeded grassland, shrub-steppe and CRP areas.”

Habitat Mitigation Plan: The Certificate Holder is also requesting the deletion of a portion of the first sentence of Section IX of the Habitat Mitigation Plan. Compliance with the Habitat Mitigation Plan is required under Condition 63 of the Site Certificate, but the Revegetation Plan is Attachment C to the Final Order. The requested change would give PGE the option of using its own qualified employees to perform the required work:

“For all components of this plan the site certificate holder shall direct a qualified ~~independent third party~~ biological monitor, as approved by the Department, to perform monitoring tasks (the “investigator”).

Condition 69 (pp. 16-17): The Certificate Holder is proposing to add a reference to the cultural resources survey prepared by Archaeological Investigations Northwest, Inc., which was submitted in conjunction with this amendment request.



Conditions 90-91 (pp. 19-20): The Certificate Holder is proposing to add language clarifying that the property identified as R14 is not a noise sensitive property as defined under the applicable DEQ rules.

Condition 126 (New, p. 27): The Certificate Holder is proposing to add a condition requiring spring surveys for two plant species, as recommended by CH2M Hill.

Condition 127 (New, p. 27): The Certificate Holder is proposing to add a condition requiring avoidance of a stream channel, as recommended by CH2M Hill.

## 1.5 Relevant standards

OAR 345-027-0060(1)(e) requires that this Request to Amend the Site Certificate include “a list of the standards of divisions 22, 23 and 24 of this chapter relevant to the proposed change.” Below is a discussion of compliance with the relevant standards.

### 1.5.1 Division 22 Standards

#### (a) OAR 345-022-0010 Organizational Expertise

This standard has four paragraphs. The first two, OAR 345-022-0010(1) and OAR 345-022-0010(2), relate to the Certificate Holder's qualifications and capability. The proposed amendments have no impact on PGE's qualifications or capabilities, which were addressed in the request for transfer of the Site Certificate to PGE.

The second two paragraphs, OAR 345-022-0010(3) and OAR 345-022-0010(4), relate to third-party permits. The changes proposed in this Request to Amend the Site Certificate do not involve any third-party permits.

#### (b) OAR 345-022-0020, Structural Standard

OAR 345-022-0020 requires the Council to find that the applicant, through appropriate site-specific study, has adequately characterized the seismic, geologic and soils hazards of the site and its vicinity and that the applicant can design, engineer and construct the facility to avoid dangers to human safety presented by such hazards. Pursuant to ORS 469.501(4), however, the Council may issue a site certificate without making the findings required by the structural standard, but the Council may impose conditions based on the structural standard. The Council imposed Conditions 66-68 based on the structural standard. Nothing in this request alters the Council's analysis of structural issues in the Final Order or affects the Certificate Holder's ability to comply with Conditions 66-68.

#### (c) OAR 345-022-0022, Soil Protection

OAR 345-022-0022 requires the Council to find that the design, construction, operation, and retirement of the facility, taking mitigation measures into account, is 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. In the Final Order, Section IV.3(b), the Council found that the applicant met the

soil protection standard, provided certain conditions (Conditions 26-35) were met. These conditions remain adequate for soil protection. For example, Condition 29 will apply to restoration of areas temporarily disturbed as crane paths. This amendment request will not interfere with the Certificate Holder's ability to comply with Conditions 26-35.

(d) OAR 345-022-0030, Land Use

OAR 345-022-0030 requires the Council to determine whether the proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission. Pursuant to ORS 469.504(1)(b), the Council found in Section IV.3(a) of the Final Order that the facility complies with OAR 345-022-0030(2)(b), with the imposition of Conditions 17-25.

The facilities and expanded site proposed in this amendment request are all of a nature already approved by the Council under ORS 469.504(1)(b) and OAR 345-022-0030(2)(b), and the applicable provisions of the County comprehensive plan, SCZO, and state law. The applicable provisions have not changed, and the proposed facilities and site expansion are all within the same zone (EFU) as the facilities and site already approved.

The proposed facility would occupy more than 20 acres of non-high-value farmland and more than 12 acres of high-value farmland in the EFU zone, and therefore does not comply with OAR 660-033-013(17), (22) and Goal 3. The Final Order found that the project as proposed met the standards for an exception to Goal 3 under ORS 469.504(2). The amendment request seeks to expand the facility site beyond that approved in the Final Order. However, the exceptions analysis and findings set for the in Section IV.3(a)(C) of the Final Order also justifies the relatively small expansion of the facility site proposed in this amendment request. Those findings can be summarized (in bold) as follows:

Reasons Supporting the Exception

1. **The proposed facility would occupy less than one percent of the actively farmed land adjacent to the facility; and most of the land occupied by the facility would be occupied by the access roads, which would be available for use by the landowner in farm operations.** This amendment request proposes some additional access roads, as well as crane paths. The crane paths are temporary, and will be restored to their original condition after construction has been completed.
2. **The facility is compatible with farm use, would not seriously interfere with accepted farm practices on adjacent land and would not materially alter the overall land use pattern of the area.** This amendment request does not propose any new types of related or supporting facilities, other than temporary crane paths that will be restored to original condition when construction is complete.
3. **Approval of the proposed facility furthers the state policy embodied in Goal 13 (Energy Conservation).** The proposed facilities and site expansion are for related or supporting facilities (collector lines, access roads and temporary crane paths) that must be located in the area of the wind turbine corridors, and therefore further state policy of promoting renewable resources, including wind, "whenever possible."

4. **It is not feasible to locate a renewable wind energy facility in Sherman County without affecting agricultural land because the best wind resources are all located on agricultural land.** The proposed facilities and site expansion are for related or supporting facilities that must be located in the area of the wind turbine corridors, which necessitates locating them on agricultural land.

5. **The farmers who own the land where the facility would be located are willing to enter into land leases to allow the project to be built. In return, the landowners would receive annual lease payments.** All proposed facilities are located on property for which the Certificate Holder has entered into appropriate agreements to compensate the owner.

6. **The project would boost the local economy by creating jobs and contributions to the local tax base.** As stated in the Final Order of June 30, 2006, the facility will result in substantial employment during construction as well as operation and will provide substantial tax revenue "with insubstantial countervailing public service demands."

Significant environmental, economic, social and energy consequences

**The facility would be in compliance with all rules of the Council applicable to the siting of the proposed facility.** As demonstrated in this amendment request, the additional related or supporting facilities and site expansion also would comply with all applicable Council rules.

Compatibility with adjacent uses

**The facility is compatible with farm use, would not seriously interfere with accepted farm practices on adjacent land and would not materially alter the overall land use pattern of the area.** These findings were made in conjunction with the analysis of SCZO 5.8.16 in the Final Order of June 30, 2006. The additional facilities proposed in this amendment request allow farm use to continue on adjacent lands and do not interfere with accepted farm practices on those lands.

Therefore, the uses proposed in this amendment request meet the land use standard for the reasons set forth in Section IV.3(a) of the Final Order.

(e) OAR 345-022-0040, Protected Areas

OAR 345-022-0040 requires the Council to find that, taking into account mitigation, the design, construction, and operation of the facility are not likely to result in significant adverse impact to areas protected by state or federal statute.

The applicant provided information on compliance with the standard for Protected Areas in Exhibit L of the ASC. In Section IV.3(c) of the Final Order, the Council found that the energy facility would meet the protected areas standard, with one condition of approval (Condition 36). This amendment request will not impact any other Protected Areas, and will not interfere with the Certificate Holder's ability to comply with Condition 36.

(f) OAR 345-022-0050, Retirement and Financial Assurance

OAR 345-022-0050 requires the Council to find that the applicant has a reasonable likelihood of obtaining a bond or comparable security, satisfactory to the Council, in an amount adequate to restore the site to a useful, nonhazardous condition if the certificate holder either begins but does not complete construction of the facility or permanently closes the facility before establishing the financial mechanism or instrument described in OAR 345-027-0020(9).

The changes to the facility and site proposed in this amendment request would alter the potential cost of site restoration, as shown on Attachment 12. However, those changes do not affect the Certificate Holder's ability to meet this standard. The Council's Final Order, Section IV.2(b), found that the Financial Assurance standard could be satisfied. In conjunction with the request to transfer the Site Certificate to PGE (Amendment #1), PGE submitted evidence that it can obtain a letter of credit for up to \$10 million, well in excess of the estimated cost of site restoration. The Council's Final Order on Amendment #1, Section IV.2, found that "it is reasonably likely that PGE can obtain a bond or letter of credit in a form and amount satisfactory to the Council." The current amendment request would not significantly alter the cost of retirement or restoration, and would not affect the Council's prior finding that PGE, as the Certificate Holder, can obtain adequate financial assurance.

The Certificate Holder will not construct the project in one phase. Therefore, the Certificate Holder is proposing to delete Conditions 5 and 7, and the first part of Condition 9, which relate to the option of constructing the project in one phase.

(g) OAR 345-022-0060, Fish and Wildlife Habitat

OAR 345-022-0060 requires the Council to find that the design, construction, operation and retirement 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. The Council's Final Order, Section IV.4(b) addresses compliance with the Fish and Wildlife Habitat Standard and found that the Biglow Canyon Wind Farm would meet the standard, subject to Conditions 58-65.

Additional surveys and change to Habitat Mitigation Plan

Attachment 10 is a report prepared by West, Inc., "Additional Sensitive Species Surveys Due to Changes in the Facility Layout, November 2006." The report documents the results of sensitive species surveys to augment the surveys conducted in 2005. The only sensitive species observed was grasshopper sparrow. Attachment 11 updates the temporary and permanent habitat impacts to account for the changes to the site and facilities, as proposed in this amendment request. No Category 1 or Category 2 habitat will be impacted by the proposed changes. The total permanent impact on Category 3 and Category 4 habitat will increase from 11.25 acres to 11.92 acres, an increase of 0.67 acres.

The Habitat Mitigation Plan (Attachment C to the Final Order of June 30, 2006) reflects a permanent impact of 11.25 acres of Category 3 and Category 4 habitat, and consequently requires an 11.25 acre reseeded mitigation area. Due to the increase in permanent impact, the Certificate Holder proposes increasing the reseeded mitigation area to 11.92 acres. The Habitat Mitigation Plan can be amended without an amendment to the Site Certificate. The

Council retains authority, however, to approve, reject or modify a change to the Habitat Mitigation Plan. The Certificate Holder therefore requests Council approval of this change.

Change to monitoring requirements

The Certificate Holder is proposing to modify Condition 60, the Wildlife Monitoring and Mitigation Plan required under Condition 61 (and attached to the Final Order as Attachment A), the Revegetation Plan required under Condition 62 (and attached to the Final Order as Attachment B), and the Habitat Mitigation Plan required under Condition 63 to allow PGE, as the Certificate Holder, the option of using its own qualified employees to perform certain monitoring activities.

Condition 60 currently requires the Certificate Holder to use a “qualified independent third party biological monitor” to survey raptor nest sites during the sensitive period. The Wildlife Monitoring and Mitigation Plan currently provides:

“For all components of this plan except the Wildlife Incident Response and Handling System, the certificate holder shall hire an independent third party (not employees of the certificate holder) to perform monitoring tasks.”

A similar requirement is set forth at p. A-1 of Attachment A to the Third Amended Site Certificate for the Stateline Wind Project (referred to as the “Oregon Wildlife Monitoring Plan”), as well as at p. A-1 of the Klondike III Wildlife Monitoring and Mitigation Plan.

In addition, the Revegetation Plan currently requires:

“The site certificate holder shall direct a qualified independent third-party botanist or revegetation specialist, as approved by the Department, to conduct monitoring of seeded grassland, shrub-steppe and CRP areas.”

Finally, the Section IX of the Habitat Mitigation Plan currently requires:

“For all components of this plan the site certificate holder shall direct a qualified independent third party biological monitor, as approved by the Department, to perform monitoring tasks (the ‘investigator’).”

Such conditions may be appropriate for a certificate holder that lacks substantial professional staff experienced in implementing wildlife monitoring and mitigation plans in Oregon. The Certificate Holder for this project is in a substantially different position from the certificate holders for the Stateline Wind Project and Klondike III, as well as the original certificate holder for the Biglow Canyon Wind Farm. Moreover, it appears from a review of other site certificates that, with the exception of wind energy projects, the Council typically has not required that a certificate holder retain an independent third party to perform survey or monitoring tasks related to wildlife impacts, habitat mitigation, or revegetation. In fact, PGE

staff has conducted survey and monitoring efforts required by EFSC and ODFW for both the Boardman Power Plant and the Port Westward Generating Project. The Certificate Holder therefore is requesting authority to conduct some of the monitoring and survey activities with its own employees. Independent third-parties would still be used for the Fatality Monitoring Program and the Avian Use and Behavior Surveys under the Wildlife Monitoring and Mitigation Plan.

PGE currently employs four full-time wildlife biologists who are responsible for implementing the Company's numerous wildlife and terrestrial resource programs. They are highly experienced in new power plant/transmission line siting, hydroelectric project relicensing, ecological monitoring, wildlife research and monitoring, power plant decommissioning, and exotic/invasive plant management. They have interacted extensively with ODFW and USFWS biologists and federal land managers to implement a multitude of activities associated with these programs. In this respect, PGE biologists have earned the respect of their agency counterparts, and as such, are recognized for their honesty and integrity, attention to good science, and genuine desire to conserve natural resources. As members of PGE's Environmental Services Department, they provide advice and environmental services to other departments within the company. In particular, PGE biologists are responsible for implementing and/or conducting the following:

- EFSC and ODFW required ecological monitoring, including wildlife surveys, for the Boardman Power Plant.
- Implementation of the Multi-species Candidate Conservation Agreement with Assurances for the Washington ground squirrel, ferruginous hawk, sage sparrow, and loggerhead shrike on Boardman Power Plant lands.
- EFSC, ODFW, and USFWS required plant and animal monitoring and protection programs associated with construction and operation of the new Port Westward Generating Project and transmission line.
- Implementation of all aspects of the FERC required Terrestrial Resources Management Plan for the Pelton Round Butte Hydroelectric Project.
- Development and implementation of a company-wide avian protection plan.
- Implementation of wildlife habitat mitigation programs throughout the Company, including extensive and long-term mitigation on wildlife habitat lands associated with the Pelton Round Butte Hydroelectric Project.
- Wildlife monitoring, exotic/invasive plant management, and revegetation activities associated with decommissioning of the Bull Run Hydroelectric Project.
- Wildlife protection associated with decommissioning of the Trojan Nuclear Plant.

The following is a brief description of PGE's wildlife staff:

Greg Concannon, Environmental Supervisor and Senior Wildlife Biologist. Greg oversees wildlife and terrestrial resource programs throughout the Company and supervises a team of fish and wildlife biologists and technicians stationed at the Pelton Round Butte Hydroelectric Project. Prior to joining PGE's Environmental Services in 1993, Greg was employed as a biologist for 20 years with the ODFW where he was involved in numerous fish and wildlife research and management programs. Greg has extensive experience in program planning, wildlife surveys

and monitoring, including breeding bird/raptor/and bat surveys, research, data analysis and reporting, plant and wildlife protection, and habitat mitigation.

Steven Bullock, Fish and Wildlife Biologist. Steve has worked in the environmental field since 1970. Prior to joining PGE in 1977, Steve was in the Peace Corps, worked on fish and wildlife projects for various consultants and the Army Corps of Engineers. While at PGE, he has worked on wildlife and other environmental programs associated with the Trojan Nuclear, Boardman, Coyote Springs, Beaver, and Port Westward generating projects. Steve has extensive experience in wildlife surveys and monitoring, including breeding bird and raptor surveys and studies, data analysis, and reporting.

Robert Marheine, Wildlife Biologist/Team Leader. Robert has 17 years experience in the field of natural resources. Prior to joining PGE in the late 1990s, Robert held various positions with ODFW, the Bureau of Land Management and Forest Service. He has worked primarily in the areas of range management, wildlife surveys and monitoring, including breeding bird/raptor/and bat surveys, wildlife habitat improvement, ecosystem restoration, and exotic/invasive vegetation management. Robert is currently involved with long-term implementation of the Terrestrial Resources Management Plan for the Pelton Round Butte Hydroelectric Project, implementation of the Multi-species Candidate Conservation Agreement with Assurances on Boardman Power Plant Lands, and wildlife monitoring/revegetation/exotic-invasive plant management activities associated with decommissioning of the Bull Run Hydroelectric Project.

Andrew Bidwell, Wildlife Biologist. Andrew joined PGE's Environmental Services in 2001 and has experience in wildlife sciences and water quality, hazardous waste, and oil spill regulatory compliance. He is experienced in wildlife surveys and monitoring, habitat improvement, exotic/invasive plant management, and avian electrocution issues. Andrew has been the primary biologist responsible for conducting intensive bald eagle monitoring studies during construction of the Port Westward Generating Project, as required by the USFWS Biological Opinion for the Project. Besides providing assistance with wildlife programs throughout the Company, Andrew is also developing a company-wide avian protection plan for PGE's electrical facilities.

The Environmental Services Department of which these wildlife biologists are a part is structurally separate within the company from the persons responsible for siting and operating generating facilities. As shown on Attachment 13, PGE's Environmental Services Department reports to the company's Vice President for Administration, not to the Vice President for Nuclear and Power Supply/Generation. This structural separation helps to ensure the integrity of the work performed by the company's in-house wildlife biologists.

Finally, it is particularly appropriate for PGE, as a regulated utility, to have the option of using its own qualified employees. Ratepayers are already paying for the PGE staff; to the extent that PGE's own qualified wildlife biologists have time available to perform work required under the Site Certificate, PGE can accomplish the work without increasing costs.

(h) OAR 345-022-0070, Threatened and Endangered Species

OAR 345-022-0070 requires the Council, after consultation with appropriate state agencies, to find that the design, construction, operation and retirement of the energy facility are

consistent with any protection and conservation programs adopted by the Oregon Department of Agriculture for plant species listed as threatened or endangered under ORS 564.105(2), or if the Department of Agriculture has not adopted a protection and conservation program, that the facility is not likely to cause a significant reduction in the likelihood of survival or recovery of the species. With respect to wildlife species, the Council must find that the design, construction, operation and retirement of the facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of species listed as threatened or endangered by Oregon Fish and Wildlife Commission under ORS 496.172(2).

In Section IV.4(a) of the Final Order, the Council found that, with the imposition of the Conditions 55-57, the energy facility will not have an adverse impact on any threatened, endangered, or candidate plant species or their habitat. This amendment request does not affect the Council's conclusions under the Threatened and Endangered Species Standard.

Attachments 9 and 10 provide updated surveys for threatened and endangered plant and animal species, respectively. Existing Site Certificate conditions are adequate to address impacts to sensitive wildlife habitat. The rare plant habitat survey, however, suggests conducting a spring survey during the appropriate bloom time for Northern wormwood and Henderson's ricegrass. The Certificate Holder is proposing a new Condition 126 to require the recommended surveys.

(i) OAR 345-022-0080, Scenic and Aesthetic Values

OAR 345-022-0080 requires the Council to find that the design, construction, operation and retirement of the facility, taking into account mitigation, are not likely to result in 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. The impact of the energy facility on scenic and aesthetic values was addressed in Section IV.3(d) of the Final Order. Nothing in this amendment request would affect compliance with the Scenic and Aesthetic Values Standard.

(j) OAR 345-022-0090, Historic, Cultural, and Archaeological Resources

OAR 345-022-0090 requires the Council to find that the construction, operation and retirement of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places, and/or archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c). Pursuant to ORS 469.501(4), however, the Council may issue a site certificate without making the findings required by this standard, but the Council may impose conditions based on the standard. The Council imposed Conditions 69-73 based on the Historic, Cultural, and Archaeological Resources standard. Nothing in this request affects the Certificate Holder's ability to comply with Conditions 69-73.

Under separate cover, the Certificate Holder is submitting a report prepared by Archaeological Investigations Northwest, Inc (AINW). The report evaluates the potential for



impacts to cultural resources in project areas not previously surveyed. The report identifies one historic-period site and one possible feature associated with the Oregon Trail that had not been identified in the 2005 survey that was part of the ASC. The Certificate Holder proposes to avoid the historic-period site through a minor realignment of the project features within their proposed corridors.

Also submitted under separate cover is a technical memorandum from AINW, detailing the results of further investigation of the possible Oregon Trail segment. On the basis of that further investigation, AINW concluded that the feature investigated does not appear to be part of the Oregon Trail. Therefore, no additional measures are necessary to address that area.

The Certificate Holder is proposing a minor change to Condition 69 is appropriate to ensure that Condition 69 applies to the supplemental report and technical memorandum prepared by AINW.

(k) OAR 345-022-0100, Recreation

OAR 345-022-0100 requires the Council to 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. Impacts on recreational opportunities were addressed in Section IV.3(e) of the Final Order. This amendment request does not affect compliance with the Recreation Standard.

(l) OAR 345-022-0110, Public Services

OAR 345-022-0110 requires the Council to 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 to provide sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools. Pursuant to ORS 469.501(4), however, the Council may issue a site certificate without making the findings required by the Public Services standard, but the Council may impose conditions based on the standard. The Council imposed Conditions 77-79 based on the Public Services standard. Nothing in this request alters the Council's analysis of Public Services issues in the Final Order or affects the Certificate Holder's ability to comply with Conditions 77-79.

(m) OAR 345-022-0120, Waste Minimization

OAR 345-022-0120 requires the Council to find that, to the extent reasonably practicable, the applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction, operation, and retirement of the facility, and when solid waste or wastewater is generated, to result in recycling and re-use of such wastes; and 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 impacts on surrounding and adjacent areas. Pursuant to ORS 469.501(4), however, the Council may issue a site certificate without making the findings required by the Waste Minimization standard, but the Council may impose conditions based on the standard. The Council imposed Conditions 80-88 based on the Waste Minimization standard. Nothing in this request alters the

Council's analysis of waste minimization issues in the Final Order or affects the Certificate Holder's ability to comply with Conditions 80-88.

#### 1.5.2 Division 23 Standards

The Division 23 standards apply only to non-generating facilities and are inapplicable to the Biglow Canyon Wind Farm.

#### 1.5.3 Division 24 Standards

The Division 24 standards applicable to the Biglow Canyon Wind Farm are set forth in in OAR 345-024-0010, OAR 345-024-0015 and 345-024-0090.

OAR 345-024-0010(2) requires that in order to approve a site certificate for a wind energy facility, the Council must make findings that the applicant can design, construct and operate the facility: (1) to exclude members of the public from close proximity to the turbine blades and electrical equipment; and (2) 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 consequence of such failure. These standards were addressed in Section IV.3(f) of the Final Order, and the Council imposed Conditions 36-47 of the Site Certificate to ensure compliance. This amendment request does not affect compliance with the standards in OAR 345-024-0010 or the Certificate Holder's ability to comply with Conditions 36-47.

OAR 345-024-0015 requires that in order to approve a site certificate for a wind energy facility, the Council must make findings regarding the applicant's ability to design and construct the facility to reduce visual impacts, restrict public access, and to reduce cumulative adverse environmental impacts in the vicinity. These standards were addressed in Section IV.3(g) of the Final Order, and the Council imposed Conditions 48-52 of the Site Certificate to ensure compliance. This amendment request does not affect compliance with the standards in OAR 345-024-0015 or the Certificate Holder's ability to comply with Conditions 48-52 of the Site Certificate.

OAR 345-024-0090 requires that for a facility that includes any high voltage transmission line under Council jurisdiction, the Council must find that the applicant can meet standards regarding electric fields and induced currents from the transmission line. Compliance with those standards was addressed in Section IV.3(h) of the Final Order, and the Council imposed Conditions 53 and 54 of the Site Certificate to ensure compliance. This amendment request does not affect compliance with the standards in OAR 345-024-0090 or the certificate holder's ability to comply with Conditions 53 and 54 of the Site Certificate.

#### 1.6 Analysis of compliance with ORS 469, Council rules and applicable state and local laws, rules and ordinances

OAR 345-027-0060 requires that this request include:

“an analysis of whether the facility, with the proposed change, would comply with the requirements of ORS Chapter 469,

applicable Council rules, and applicable state and local laws, rules and ordinances if the Council amends the site certificate as requested. For the purpose of this rule, a law, rule or ordinance is 'applicable' if the Council would apply or consider the law, rule or ordinance under OAR 345-027-0070(9)."

1.6.1 *Applicable substantive criteria.*

OAR 345-027-0070(9) provides:

"In making a decision to grant or deny issuance of an amended site certificate, the Council shall apply the applicable substantive criteria, as described in OAR 345-022-0030, in effect on the date the certificate holder submitted the request for amendment and all other state statutes, administrative rules, and local government ordinances in effect on the date the Council makes its decision."

(a) Land Use Standard

OAR 345-022-0030, which is addressed in Section 1.5.1(d), above, sets forth the Council's land use standard. For the reasons described in Section 1.5.1(d), the Council's land use findings in Section IV.3(a) of the Final Order of June 30, 2006 are adequate to demonstrate compliance with applicable local and state land use requirements.

(b) Other State Statutes, Administrative Rules and Local Government Ordinances

Pursuant to ORS 469.503(1)(b), the Council must determine that the proposed 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. The statutes and administrative rules addressed under this standard in the Site Certificate are DEQ's noise control regulations; the Oregon Removal-Fill Law, the Ground Water Act and the Council's statutory authority to consider protection of the public health and safety.

(i) DEQ Noise Regulations

DEQ noise regulations for industrial and commercial noise sources, OAR 340-035-0035, apply to the energy facility. More specifically, OAR 340-035-0035(1)(b)(B)(iii) establishes the noise standards for noise levels generated by a wind energy facility. In Section V.1(a) of the Final Order, the Council found that the energy facility would meet the DEQ noise standards applicable to the facility, subject to conditions of approval (Conditions 89-91).

Condition 90 specifically references noise sensitive properties identified in Table 12 of the Final Order of June 30, 2006. Table 12 includes 25 properties, identified as R1 through R25. The Certificate Holder has concluded that one of those properties – R14, a parcel owned by the Chiara Dittmer Revocable Living Trust – does not meet the regulatory definition of "Noise Sensitive Property" under the applicable DEQ rules and should not be included in Table 12 or any other analysis of compliance with the DEQ noise regulations.

The property in question does not have any permanent “noise sensitive” structures. Rather, as shown on the attached photographs included herein as Attachment 8, there are two travel trailers located on the property, as well as two outbuildings (barn and storage shed). The travel trailers are used periodically by the landowners and are moved occasionally. They have no permanent fixtures or attachments to the land. The barn and storage shed are used for agricultural purposes and do not contain facilities for sleeping. The Certificate Holder does not believe that the subject property should be considered a “noise sensitive property” because the only sleeping accommodations on the subject property are the two travel trailers, which are not “real property” or “buildings” as those terms are used in the applicable regulations. Moreover, under the Sherman County Zoning Ordinance, the travel trailers cannot legally be used as sleeping quarters on anything other than a short-term basis.

OAR 340-035-0015(38) defines “Noise Sensitive Property” to mean “real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries. Property used in industrial or agricultural activities is not Noise Sensitive Property unless it meets the above criteria in more than an incidental manner.” These travel trailers are not permanently affixed to the ground and are not, therefore, “real property” under Oregon law.

It is also clear, in the context of the regulations, that bare land does not constitute “Noise Sensitive Property.” In other words, real property cannot become “Noise Sensitive Property” because people camp there in the open air or in temporary facilities. OAR 340-035-0035(3) addresses sound measurement procedures. Pursuant to OAR 340-035-0035(3)(b), the “appropriate measurement point” is described as

“that point on the noise sensitive property, described below, which is further from the noise source:

(A) 25 feet (7.6 meters) toward the noise source from that point on the noise sensitive building nearest the noise source;

(B) That point on the noise sensitive property line nearest the noise source.” (Emphasis added).

The DEQ noise rules do not define the term “noise sensitive building.” However, it appears clear from the definition of “noise sensitive property” that the types of uses specifically listed (schools, churches, hospitals and public libraries) are associated with permanent structures. The standard for determining the “appropriate measurement point,” moreover, presupposes that the “building” does not move. If the building could move, so could the “appropriate measurement point.”

Moreover, the subject property could not “normally be used for sleeping” under the Sherman County Zoning Ordinance (SCZO) with only the two travel trailers present. Under SCZO 1.4(108), the travel trailers fall within the definition of “recreational vehicle”:

“A vehicle with or without motive power, which is designed for human occupancy and is to be used temporarily for recreational, seasonal or emergency purposes, and has a gross floor space not

exceeding 400 square feet in the set-up mode. For the purposes of this Ordinance, such includes camping trailers, camping vehicles, motor homes, park trailers, bus conversions, van conversions, tent trailers, travel trailers, folding or collapsible trailers or truck campers and any vehicle manufactured or converted for use or partial use as a recreational vehicle.”

SCZO 4.5 prohibits residential use of recreational vehicles except under very limited circumstances:

“Recreational vehicles may not be occupied for residential purposes or other purposes on any lot in the County except as follows:

1. As permitted as a Temporary Residence by Section 4.4.
2. In an approved Recreational Vehicle Park or in an approved Mobile or Manufactured Home Park on spaces specifically approved for RV Vehicle use.
3. As a temporary residence by guests of the owner for a period not to exceed 7-days out of any 30-day period, particularly during major local events such as rodeos, fairs, races, school and community events, adult and youth athletic events, and similar events.”

SCZO 4.4 allows temporary use only in conjunction with construction of an approved permanent home or placement of an approved manufactured home, requires electric, sewer and water connections, and requires that the recreational vehicle be removed once the permanent residence is complete. Nothing in Sherman County’s building or land use records indicates that the subject property is approved for a conventional residence or for placement of a manufactured home, and the property is not permitted as a Recreational Vehicle Park or a Mobile or Manufactured Home Park. The travel trailers, therefore, cannot legally be used for residential purposes. The subject property cannot legally be recognized as real property “normally used for sleeping” when it lacks facilities that legally can be used for residential purposes.

From a policy standpoint as well, the use of a travel trailer as a dwelling should not be accorded protection equivalent to a permanent residence. Whether or not it is the intent of the owner of the subject property in this case, giving a travel trailer protection as a “noise sensitive building” would allow property owners to create a compliance issue for a wind farm by moving the trailer to a location nearer the noise source. Such an outcome is avoided by interpreting the rule to apply to fixed locations: property lines, and permanent buildings.

(ii) Removal/Fill Law

In Section V.1(b) of the Final Order, the Council concluded that a Removal-Fill Permit is not required for the energy facility because the applicant would avoid impacts to “waters of the state.” Attachment 9 to this amendment request is a technical memorandum from CH2M Hill describing the results of a survey conducted to determine the presence of wetlands or other jurisdictional waters of the United States or the State. The memorandum indicates that no

wetlands were identified within the study area, but one potential jurisdictional water would be crossed by a new collector line. That potential jurisdictional water – a narrow intermittent stream – can be avoided by placing collector line poles outside the stream channel. The Certificate Holder is proposing a new Site Certificate condition requiring that no disturbance occur within the stream channel or within a 25-foot buffer on either side of the stream channel.

(iii) Ground Water Act

In Section V.1(c) of the Final Order, the Council found that the applicant’s proposed use of ground water would be consistent with the Ground Water Act of 1955, ORS 537.505 to 537.796, subject to the conditions adopted under the Public Services standard regarding water use. This amendment request does not propose any alteration in water use or water sources, and therefore does not affect the Council’s findings under the Ground Water Act or the Certificate Holder’s ability to comply with the conditions regarding water use.

(iv) Public Health and Safety

Under ORS 469.310, the Council must ensure that the “siting, construction and operation of energy facilities shall be accomplished in a manner consistent with protection of the public health and safety ....” The state siting statute also provides that “the site certificate shall contain conditions for the protection of the public health and safety ....” In Section V.1(d) of the Final Order, the Council imposed conditions of approval to address public health and safety issues with respect to fire protection (Conditions 92-98), electric and magnetic fields (Condition 99) and coordination with the PUC on design and specifications for transmission lines (Condition 100). This amendment request does not affect the Certificate Holder’s ability to comply with Conditions 92-100 and does not require any changes to those conditions.

1.6.2 *Considerations for amending Site Certificate: OAR 345-027-0070(9).*

(a) Amendments to enlarge the site: OAR 345-027-0070(9)(a)

OAR 345-027-0070(9)(a) requires that, for an amendment that enlarges the site, “the Council shall consider, within the area added to the site by the amendment, whether the facility complies with all Council standards.” Section 1.5 and 1.6 of this amendment request address how the areas that would be added to the facility site comply with all applicable Council standards.

(b) Extending construction deadlines: OAR 345-027-0070(9)(b)

OAR 345-027-0070(9)(b) identifies three factors the Council must consider when considering an amendment that extends the deadlines for beginning or completing construction. The Certificate Holder is not requesting an extension of the deadlines for beginning or completing construction.

(c) Other amendments: OAR 345-027-0070(9)(c)

OAR 345-027-0070(9)(c) requires that for amendments not described in OAR 345-027-0070(9)(a) and (b), the Council “shall consider the effects of the amendment on any

finding required by Council standards for issuance of a site certificate.” Sections 1.5 and 1.6 of this amendment request address how all aspects of this request comply with the applicable Council standards for issuance of a site certificate.

1.7 Updated list of property owners

OAR 345-027-0060(1)(g) requires, for an amendment to change the site boundary or to extend the deadlines for beginning or completing construction of the facility, “an updated list of the owners of property located within or adjacent to the site of the facility, as described in OAR 345-021-0010(1)(f).” PGE is proposing to change the site boundary in order to accommodate additional facilities. Therefore, the updated property owner list will be provided as Attachment 14.

SECTION 2 INFORMATION CONSISTENT WITH SITE CERTIFICATE APPLICATION REQUIREMENTS

OAR 345-027-0060(2) requires:

“In a request to amend a site certificate, the certificate holder shall provide the information described in applicable subsections of OAR 345-021-0010(1) in effect as of the date of the request. The certificate holder may incorporate by reference relevant information that was previously submitted to the Office of Energy in the site certificate application or that is otherwise included in the Office of Energy’s administrative record on the facility.”

All exhibits of the ASC and prior amendment requests referenced above are incorporated herein by reference.

Figures, Attachments and Exhibits

Figure 1: Wind Farm Facilities

Figure 1a: Overview of Proposed Modifications

Attachment 1: Redline comparison of Amended Site Certificate

Attachment 2: Redline of Wildlife Monitoring and Mitigation Plan

Attachment 3: Redline of Revegetation Plan

Attachment 4: Redline of Habitat Mitigation Plan

Attachment 5: Letter from Richard Allan, Ball Janik LLP, to John White, ODOE, November 6, 2006

Attachment 6: Letter from John White, ODOE, to Richard Allan, Ball Janik LLP, November 14, 2006

Attachment 7: Bonneville Power Administration Record of Decision for the Klondike III/Biglow Canyon Wind Integration Project, October 25, 2006

Attachment 8: Photographs of Dittmer property (travel trailers and farm buildings)

Attachment 9: CH2MHill Technical Memorandum, December 4, 2006, "Biglow Canyon Wind Farm – Collection Line and Access Roads; Wetlands and Waters Determination and Rare Plant Habitat Survey"

Attachment 10: West, Inc. report, "Additional Sensitive Species Surveys Due to Changes in the Facility Layout, November 2006"

Attachment 11: Revised calculations of temporary and permanent habitat impacts

Attachment 12: Revised estimates of retirement costs

Attachment 13: PGE Corporate Structure (chart)

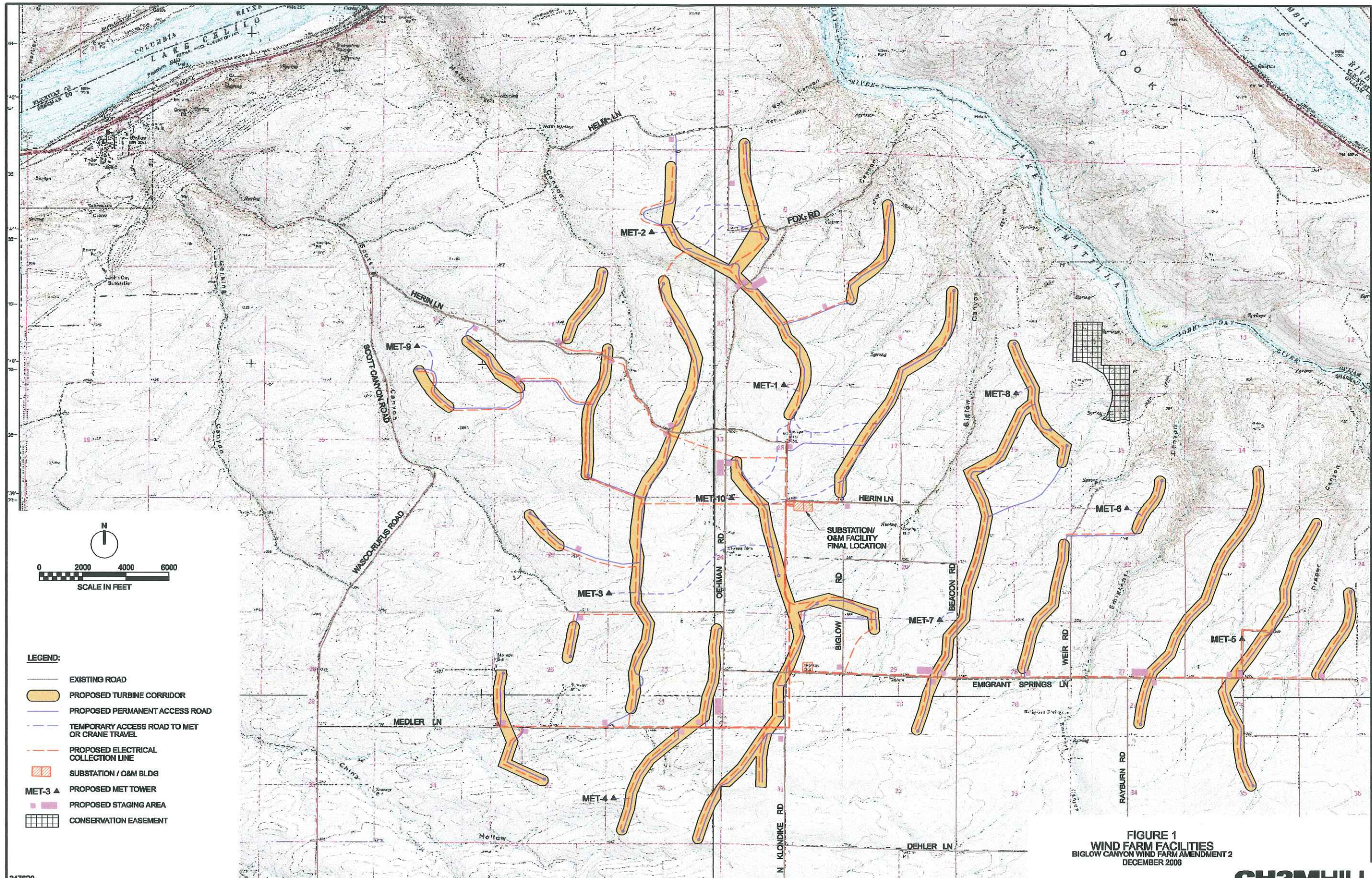
Attachment 14: Updated property owner list

Submitted Under Separate Cover

Attachment 15: "Cultural Resource Survey for the Biglow Canyon Wind Project, Sherman County, Oregon, Supplement 1," Archaeological Investigations Northwest, Inc., December 1, 2006

Attachment 16: "Oregon Trail Metal Detector Survey Technical Memorandum," Archaeological Investigations Northwest, Inc., December 20, 2006

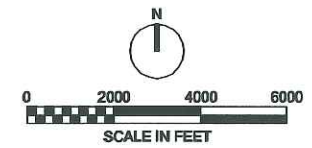
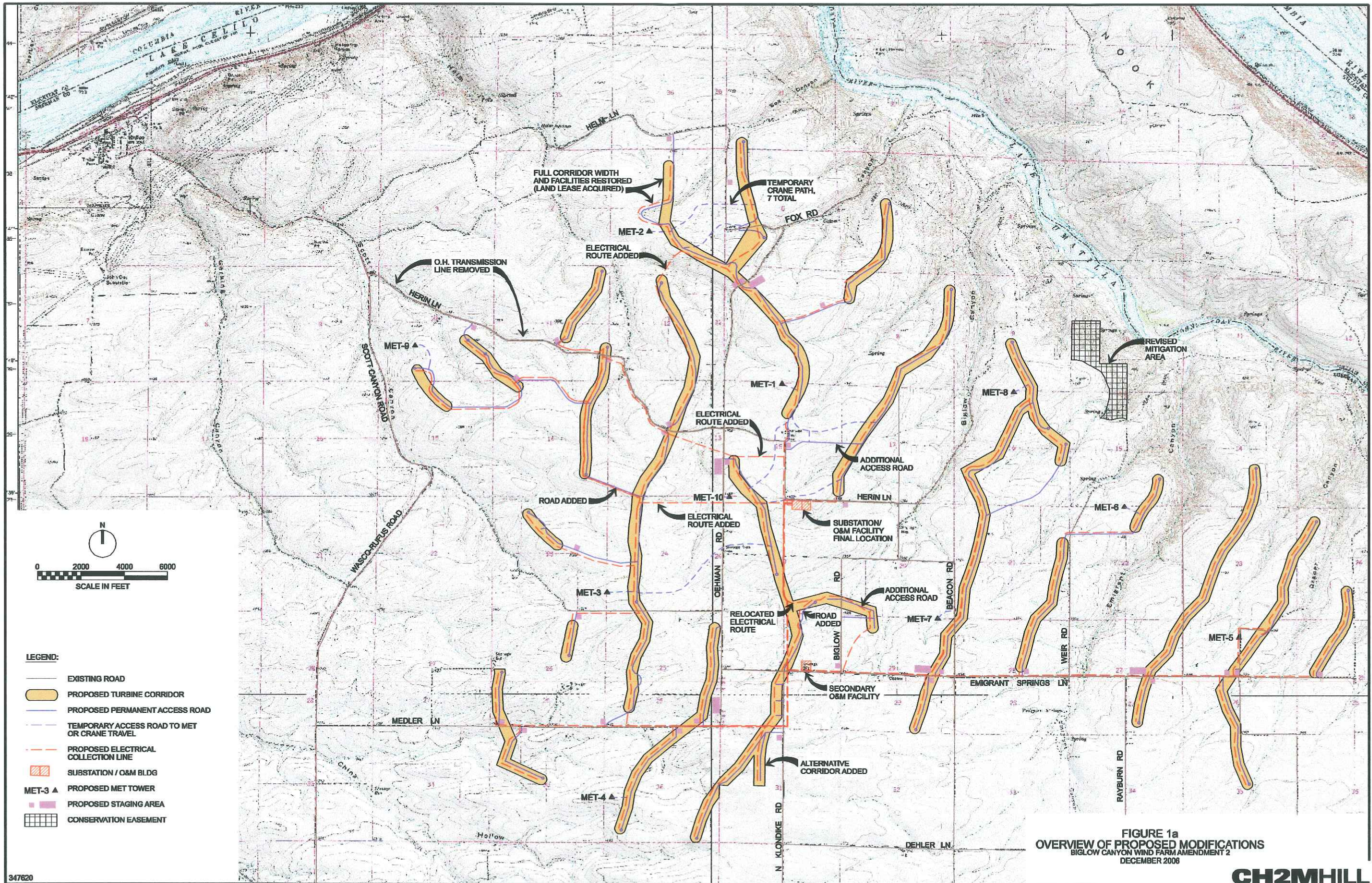




- LEGEND:**
- EXISTING ROAD
  - PROPOSED TURBINE CORRIDOR
  - PROPOSED PERMANENT ACCESS ROAD
  - TEMPORARY ACCESS ROAD TO MET OR CRANE TRAVEL
  - PROPOSED ELECTRICAL COLLECTION LINE
  - ▭ SUBSTATION / O&M BLDG
  - ▲ MET-3 ▲ PROPOSED MET TOWER
  - PROPOSED STAGING AREA
  - ▭ CONSERVATION EASEMENT

**FIGURE 1**  
**WIND FARM FACILITIES**  
 BIGLOW CANYON WIND FARM AMENDMENT 2  
 DECEMBER 2006

**CH2MHILL**



- LEGEND:**
- EXISTING ROAD
  - PROPOSED TURBINE CORRIDOR
  - PROPOSED PERMANENT ACCESS ROAD
  - TEMPORARY ACCESS ROAD TO MET OR CRANE TRAVEL
  - PROPOSED ELECTRICAL COLLECTION LINE
  - ▭ SUBSTATION / O&M BLDG
  - ▲ MET-3 ▲ PROPOSED MET TOWER
  - PROPOSED STAGING AREA
  - ▭ CONSERVATION EASEMENT

**FIGURE 1a**  
**OVERVIEW OF PROPOSED MODIFICATIONS**  
 BIGLOW CANYON WIND FARM AMENDMENT 2  
 DECEMBER 2006

**CH2MHILL**

**Attachment 1: Redline comparison of Amended Site Certificate**



**ENERGY FACILITY SITING COUNCIL  
OF THE  
STATE OF OREGON**

**~~First~~Second Amended Site Certificate  
for the  
Biglow Canyon Wind Farm**

November 3, 2006, 2007

**The Oregon Energy Facility Siting Council**

**FIRSTSECOND AMENDED SITE CERTIFICATE FOR THE BIGLOW CANYON  
WIND FARM**

**I. INTRODUCTION**

1 This site certificate for the Biglow Canyon Wind Farm (“Biglow” or the “facility”) is  
2 issued and executed in the manner provided by ORS Chapter 469, by and between the State of  
3 Oregon (“State”), acting by and through its Energy Facility Siting Council (the “Council”), and  
4 Portland General Electric Company (“certificate holder”). This site certificate is a binding  
5 agreement between the State, acting by and through the Council, and the certificate holder.  
6 [Amendment #1]

7 The findings of fact, reasoning and conclusions of law underlying the terms and  
8 conditions of this site certificate are set forth in the following documents related to the facility,  
9 which are incorporated herein by this reference: (a) the Council’s Final Order in the Matter of the  
10 Application for a Site Certificate for the Biglow Canyon Wind Farm (the “Final Order on the  
11 Application”) ~~and~~; (b) the Council’s Final Order on Amendment #1; and (c) the Council’s  
12 Final Order on Amendment #2. [Amendment #1]

13 In interpreting this site certificate, any ambiguity shall be clarified by reference to the  
14 following, in order of priority: (1) this FirstSecond Amended Site Certificate; (2) the Final Order  
15 on Amendment #2; (3) the Final Order on Amendment #1; (3) the Final Order on the  
16 Application; and (4) the record of the proceedings that led to the Final Orders on the Application,  
17 Amendment #1, and Amendment #1.2. [Amendment #1]

18 The terms used in this site certificate shall have the same meaning as set forth in ORS  
19 469.300 and OAR 345-001-0010, except where otherwise stated or where the context clearly  
20 indicates otherwise.

**II. SITE CERTIFICATION**

- 21 A. To the extent authorized by state law and subject to the conditions set forth herein, the State  
22 authorizes the certificate holder to construct, operate and retire a wind energy facility,  
23 together with certain related or supporting facilities, at the site in Sherman County, Oregon,  
24 as described in Section III of this site certificate. ORS 469.401(1)
- 25 B. This site certificate is effective until it is terminated under OAR 345-027-0110 or the rules in  
26 effect on the date that termination is sought or until the site certificate is revoked under ORS  
27 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation  
28 is ordered. ORS 469.401(1)
- 29 C. This site certificate does not address, and is not binding with respect to, matters that were not  
30 addressed in the Council’s Final Orders on the Application and Amendment #1. These  
31 matters include, but are not limited to: building code compliance, wage, hour and other labor  
32 regulations, local government fees and charges, and other design or operational issues that do  
33 not relate to siting the facility (ORS 469.401(4)) and permits issued under statutes and rules  
34 for which the decision on compliance has been delegated by the federal government to a state  
35 agency other than the Council. ORS 469.503(3). [Amendment #1]

- 1 D. Both the State and the certificate holder shall abide by local ordinances, state law, and the  
2 rules of the Council in effect on the date this site certificate is issued. In addition, upon a  
3 clear showing of a significant threat to public health, safety or the environment that requires  
4 application of later-adopted laws or rules, the Council may require compliance with such  
5 later-adopted laws or rules. ORS 469.401(2)
- 6 E. For a permit, license or other approval addressed in and governed by this site certificate, the  
7 certificate holder shall comply with applicable state and federal laws adopted in the future to  
8 the extent that such compliance is required under the respective state agency statutes and  
9 rules. ORS 469.401(2)
- 10 F. Subject to the conditions herein, this site certificate binds the State and all counties, cities and  
11 political subdivisions in Oregon as to the approval of the site and the construction, operation  
12 and retirement of the facility as to matters that are addressed in and governed by this site  
13 certificate. ORS 469.401(3)
- 14 G. Each affected state agency, county, city and political subdivision in Oregon with authority to  
15 issue a permit, license or other approval addressed in or governed by this site certificate shall,  
16 upon submission of the proper application and payment of the proper fees, but without  
17 hearings or other proceedings, issue such permit, license or other approval subject only to  
18 conditions set forth in this site certificate. ORS 469.401(3)
- 19 H. After issuance of this site certificate, each state agency or local government agency that  
20 issues a permit, license or other approval for the facility shall continue to exercise  
21 enforcement authority over such permit, license or other approval. ORS 469.401(3)
- 22 I. After issuance of this site certificate, the Council shall have continuing authority over the site  
23 and may inspect, or direct the Department to inspect, or request another state agency or local  
24 government to inspect, the site at any time in order to ensure that the facility is being  
25 operated consistently with the terms and conditions of this site certificate. ORS 469.430

### III. DESCRIPTIONS

#### A. THE FACILITY

26 In the site certificate application, the certificate holder requested the flexibility, within  
27 defined 500-foot-wide turbine corridors, to defer the final selection of turbine vendor, turbine  
28 size, number of turbines to be installed, and precise turbine layout until after the issuance of a  
29 site certificate and prior to commencement of construction. In the site certificate application, the  
30 certificate holder defined the range of possible turbine vendors, sizes and numbers. In the site  
31 certificate application, the certificate holder also defined ~~two alternative transmission line~~  
32 ~~options~~, two alternative substation locations, and three alternative O&M facility locations.  
33 Subject to specific conditions, this site certificate grants that flexibility.

- 34
- 35 1. Major Structures. The Biglow Canyon Wind Farm will consist of up to 225 wind turbines  
36 with an aggregate nominal nameplate generating capacity of 337.5 megawatts (MW) of  
37 electricity or 150 wind turbines with an aggregate nominal nameplate generating capacity  
38 of 450 MW. The average electric generating capacity will be about 112.5 to 150 MW.  
39 Turbines will be mounted on tubular steel towers ranging in height from 265 to 280 feet  
40 at the hub with an overall height of from 400 to 445 feet including the turbine blades. The  
41 turbines will be erected within up to 30 corridors and spaced to optimize the facility's

1 output. The facility will be located on private farmland that the certificate holder has  
2 leased from the affected landowners. [Amendment #1]  
3

4 2. Related or Supporting Facilities. The facility includes the following related or supporting  
5 facilities:

6 a. Power Collection System. Each wind turbine will generate power at about 600  
7 volts. The transformer sitting at the base of each wind turbine unit will increase  
8 the voltage to 34.5 kilovolts (kV). From the transformer, power will be  
9 transmitted to a central substation by means of electric cables. Most of the cables  
10 will be buried three feet or more below the surface in trenches about 3 feet wide.  
11 In areas where collector cables from several turbine strings follow the same  
12 alignment, *e.g.*, on approach to the substation, multiple sets of cables may be  
13 installed within a single trench. If the facility is fully developed, there will be  
14 about 468,000 feet (88.699 miles) of 3-wire collector cables. Generally, these  
15 cables will be above, below or adjacent to the fiber optic cables comprising the  
16 supervisory control and data acquisition system.

17 In some locations, the collector cables may be constructed above ground on pole  
18 or tower structures. Aboveground structures would allow the collector cables to  
19 span terrain, such as canyons, native grasslands, wetlands, and intermittent  
20 streams, thereby reducing adverse environmental impacts, or to span cultivated  
21 areas, thereby reducing adverse impacts to farming operations. Poles or towers  
22 supporting aboveground segments of the power collection system will be about 23  
23 to 28 feet tall. Pending final site design, the certificate holder states that the length  
24 of the aboveground segments of the power collection system will be up to but not  
25 exceeding 15 miles.

26 b. ~~Substations and Interconnection System. Under one of its transmission~~  
27 ~~alternatives, the certificate holder would construct a new substation in the~~  
28 ~~southern section of the facility site.~~Substation. The substation site would be a  
29 graveled, fenced area of up to 6 acres with transformers, switching equipment and  
30 a parking area. Transformers would be non-polychlorinated biphenyl (PCB) oil-  
31 filled types. The transmission line would be about 3 miles long and would  
32 ~~interconnect with the~~substation would connect with a new Bonneville Power  
33 Administration (BPA) system at the existing Klondike Schoolhouse  
34 Substation.~~transmission. Under one alternative, the certificate holder would~~  
35 ~~construct a new substation in the southern section of the facility site.~~ Under its  
36 second transmission alternative, the certificate holder would construct a new  
37 substation near the center of the facility site. The substation site would be a  
38 graveled, fenced area of up to 6 acres with transformers, switching equipment and  
39 a parking area. Transformers would be non-PCB oil filled types. The transmission  
40 line would be about 7 miles long and would interconnect with an electric  
41 transformer or switching facility to be installed at BPA's John Day Substation or  
42 Switchyard for delivery of electricity to BPA's high-voltage transmission system.

43 c. Meteorological Towers. The certificate holder will place up to 10 meteorological  
44 towers throughout the facility site to collect wind resource data. The towers would  
45 be up to 279 feet tall.



1 d. Operations and Maintenance Building. The site of the operations and maintenance  
2 building will comprise about 5 acres. The O&M building will occupy about 5,000  
3 square feet and will include office and workshop areas, control room, kitchen,  
4 bathroom, shower, utility sink, and other typical facilities. Water for the  
5 bathroom, shower and kitchen will be obtained from an onsite well constructed by  
6 a licensed contractor in accordance with local and state requirements. Water use  
7 will not be expected to exceed 1,000 gallons per day. Domestic wastewater  
8 generated at the O&M facility will drain into an onsite septic system. A graveled  
9 parking area for employees, visitors and equipment will be located adjacent to the  
10 O&M facility.

11 The certificate holder proposed three alternative locations for the O&M facility:  
12 (1) adjacent to the substation to be located in the southern section of the facility  
13 site in the event Biglow is interconnected to the BPA transmission system by  
14 means of the Klondike Schoolhouse Substation; (2) adjacent to the substation to  
15 be located near the center of the facility site in the event Biglow is interconnected  
16 to the BPA transmission system by means of the John Day Substation; or (3) at  
17 the site of an existing house located at 97327 Emigrant Lane, Wasco, Oregon.

18 e. Control System. The certificate holder will install a supervisory control and data  
19 acquisition (SCADA) system to assist with the remote operation of the wind  
20 turbines, to collect data from each wind turbine, and to archive wind and  
21 performance data from various sources. The SCADA system will be linked by  
22 means of fiber optic cables or other means of communication to a central  
23 computer in the O&M facility.

24 f. Access Roads. The certificate holder will construct about ~~40.5~~41.5 miles of new  
25 roads to provide access to the wind turbine strings, together with turnaround areas  
26 at the end of each wind turbine string. The roads will be about 16 feet wide  
27 (possibly up to 28 feet wide in some locations) and will be composed of crushed  
28 gravel with shoulders (without gravel) about 3 feet wide. In addition, the  
29 certificate holder will improve about 0.7 mile of existing roads by providing an  
30 all-weather surface and, in some cases, widening the roads to accommodate  
31 construction vehicles.

32 g. Temporary Laydown and Staging Areas. Depending on whether it proceeds with  
33 the 150-turbine or 225-turbine configuration, the certificate holder will use a total  
34 of 186 or 261 laydown and staging areas to stage construction and store supplies  
35 and equipment during construction of the facility. The certificate holder will  
36 develop one 18,500 square-foot laydown area at the site of each wind turbine, a  
37 one-acre laydown area for each wind turbine string, and six additional 5-acre  
38 laydown areas at various locations throughout the facility site. The laydown areas  
39 will have a crushed gravel surface and will be returned to their pre-construction  
40 condition following completion of construction of the facility.

41 h. Temporary Crane Paths. The certificate holder will develop seven temporary  
42 crane paths, totaling approximately 5.1 miles, in order to move construction  
43 cranes between turbine corridors. The temporary crane paths will be returned to

1 their pre-construction condition following completion of construction of the  
2 facility.

**B. LOCATION OF THE FACILITY**

3 The facility is located about 2.5 miles northeast of Wasco in Townships 1 and 2 North,  
4 Ranges 17 and 18 East, Willamette Meridian, Sherman County, Oregon.

**IV. SPECIFIC FACILITY CONDITIONS**

5 The conditions listed in this section include conditions based on representations in the  
6 site certificate application and supporting record. The Council deems these representations to be  
7 binding commitments made by the applicant. These conditions are required under OAR 345-027-  
8 0020(10).

9 This section includes other specific facility conditions the Council finds necessary to  
10 ensure compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to  
11 protect the public health and safety.

**A. ORGANIZATIONAL EXPERTISE, OAR 345-022-0010**

- 12 (1) Before beginning construction of the facility, the certificate holder shall notify the  
13 Department of the identity and qualifications of the engineering, procurement and  
14 construction (EPC) contractor(s) for specific portions of the work. The certificate holder  
15 shall select EPC contractors that have substantial experience in the design and construction  
16 of similar facilities. The certificate holder shall report to the Department any change of  
17 major construction contractors.
- 18 (2) The certificate holder shall contractually require all construction contractors and  
19 subcontractors involved in the construction of the facility to comply with all applicable  
20 laws and regulations and with the terms and conditions of the site certificate. Such  
21 contractual provisions shall not operate to relieve the certificate holder of responsibility  
22 under the site certificate.
- 23 (3) During construction of the facility, the certificate holder shall have an on-site assistant  
24 construction manager who is qualified in environmental compliance to ensure compliance  
25 with all construction-related site certificate conditions. During operation, the certificate  
26 holder shall have a project manager who is qualified in environmental compliance to ensure  
27 compliance with all ongoing site certificate conditions. The certificate holder shall notify  
28 the Department of the name, telephone number, fax number and e-mail address of these  
29 managers and shall keep the Department informed of any change in this information.
- 30 (4) Within 72 hours after discovery of conditions or circumstances that may violate the terms  
31 or conditions of the site certificate, the certificate holder shall report the conditions or  
32 circumstances to the Department.

**B. RETIREMENT AND FINANCIAL ASSURANCE, OAR 345-022-0050**

- 33 (5) ~~If the certificate holder elects to build the facility in a single phase using only GE 1.5 MW~~  
34 ~~turbines, GE 3.0 MW turbines or a combination of these two GE turbines, before beginning~~  
35 ~~construction of the facility and after considering all micrositing factors, the certificate~~  
36 ~~holder shall provide to the Department a detailed map of the proposed facility showing the~~

1 ~~final locations where facility components are proposed to be built within the 500-foot wide~~  
2 ~~corridors shown on Revised Figures C-2 and C-2A of the ASC Supplement. [Deleted].~~

3 (6) If the certificate holder proposes to build the facility in more than one phase using only GE  
4 1.5-MW turbines, GE 3.0-MW turbines or a combination of these two GE turbines, before  
5 beginning construction of any phase of the facility and after considering all micrositing  
6 factors, the certificate holder shall provide to the Department a detailed map of that phase  
7 of the facility showing the final locations where facility components are proposed to be  
8 built within the 500-foot-wide corridors shown on Revised Figures C-2 and C-2A of the  
9 ASC Supplement, shall identify on this map the facilities that would constitute that phase of  
10 construction, and shall provide documentation defining the quantities of each of the  
11 following components that would constitute that phase of construction: GE 1.5-MW  
12 turbines, GE 3.0-MW turbines, pad transformers, meteorological towers, substation, O&M  
13 facility, miles of 230 kV or 500 kV transmission line, miles of aboveground 34.5-kV  
14 collector system, miles of access road, acres of turnarounds and access road intersections,  
15 and acres of temporary laydown area, and miles of temporary crane paths.

16 (7) ~~If the certificate holder elects to build the facility in a single phase using any turbines other~~  
17 ~~than the GE 1.5 MW turbines or GE 3.0 MW turbines, before beginning construction of the~~  
18 ~~facility and after considering all micrositing factors, the certificate holder shall provide to~~  
19 ~~the Department a detailed map of the proposed facility showing the final locations where~~  
20 ~~facility components are proposed to be built within the 500 foot wide corridors shown on~~  
21 ~~Revised Figures C-2 and C-2A of the ASC Supplement. The certificate holder shall include~~  
22 ~~with this map documentation defining quantities of each of the following components that~~  
23 ~~would constitute the complete facility: turbines, pad transformers, meteorological towers,~~  
24 ~~substation, O&M facility, miles of 230 kV or 500 kV transmission line, miles of~~  
25 ~~aboveground 34.5 kV collector system, miles of access road, acres of turnarounds and~~  
26 ~~access road intersections, and acres of temporary laydown area. For each turbine, the~~  
27 ~~certificate shall define the turbine manufacturer, turbine capacity, weight of steel, height of~~  
28 ~~tower, sweep of blade, and size of concrete foundation. [Deleted].~~

29 (8) If the certificate holder elects to build the facility in more than one phase using any turbines  
30 other than the GE 1.5-MW turbines or GE 3.0-MW turbines, before beginning construction  
31 of any phase of the facility and after considering all micrositing factors, the certificate  
32 holder shall provide to the Department a detailed map of that phase of the facility showing  
33 the final locations where facility components are proposed to be built within the 500-foot-  
34 wide corridors shown on Revised Figures C-2 and C-2A of the ASC Supplement, shall  
35 identify on this map the facilities that would constitute that phase of construction, and shall  
36 provide documentation defining the quantities of each of the following components that  
37 would constitute that phase of construction: turbines, pad transformers, meteorological  
38 towers, substation, O&M facility, miles of 230 kV or 500 kV transmission line, miles of  
39 aboveground 34.5-kV collector system, miles of access road, acres of turnarounds and  
40 access road intersections, and acres of temporary laydown area, and miles of temporary  
41 crane paths. For each turbine, the certificate shall define the turbine manufacturer, turbine  
42 capacity, weight of steel, height of tower, sweep of blade, and size of concrete foundation.

43 (9) ~~If the certificate holder elects to build the facility in a single phase using only GE 1.5 MW~~  
44 ~~turbines, GE 3.0 MW turbines or a combination of these two GE turbines, before beginning~~  
45 ~~construction of the facility the certificate holder shall submit to the State of Oregon through~~

1 the Council a bond or letter of credit in the amount of \$6.208 million (in 2005 dollars)  
2 naming the State of Oregon, acting by and through the Council as beneficiary or payee. If  
3 the certificate holder elects to build the facility in a single phase using any turbines other  
4 than the GE 1.5 MW or GE 3.0 MW turbines or if the certificate holder elects to build the  
5 facility in more than one phase using any combination of turbines, before beginning  
6 construction of any phase of the facility, the certificate holder shall submit to the State of  
7 Oregon through the Council a bond or letter of credit naming the State of Oregon, acting by  
8 and through the Council, as beneficiary or payee in the amount (in 2005 dollars) determined  
9 by the Department as the gross cost of demolition and site restoration minus the carbon  
10 steel scrap value plus the one percent performance bond amount, ten percent administration  
11 and project management costs and twenty percent future developments contingency  
12 applicable to the proposed phase of construction, together with any previous phases of  
13 construction. If the certificate holder elects to build the facility in more than one phase  
14 using only GE 1.5-MW turbines, GE 3.0-MW turbines or a combination of the two GE  
15 turbines, the Department will establish the amount of the bond or letter of credit by  
16 applying the unit costs described in Table 5 of the Council's final order on the site  
17 certificate application (incorporated herein by this reference) to the number of units  
18 identified by the certificate holder and verified by the Department as applicable to the  
19 proposed phase and any previous phases of construction and adding to that subtotal the one-  
20 percent performance bond amount, ten-percent administration and project management  
21 costs and twenty-percent future developments contingency. If the certificate holder elects to  
22 build the facility using any turbines other than the GE 1.5-MW turbines or GE 3.0-MW  
23 turbines, for each phase of construction the Department will establish the amount of the  
24 bond or letter of credit by using its Facility Retirement Cost Estimating Guide to estimate  
25 the gross cost of demolition and site restoration minus the carbon steel scrap value plus the  
26 one-percent performance bond amount, ten-percent administration and project management  
27 costs and twenty-percent future developments contingency.

28 (a) The certificate holder shall adjust the amount of the bond or letter of credit annually,  
29 using the following calculation:

30 (i) Adjust the gross cost (in 2005 dollars) to present value, using the U.S. Gross  
31 Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon  
32 Department of Administrative Services' *Oregon Economic and Revenue Forecast* or by any  
33 successor agency (the "Index"). If at any time the Index is no longer published, the Council  
34 shall select a comparable calculation to adjust 2005 dollars to present value.

35 (ii) Adjust the estimated carbon steel scrap value by an index factor derived from the  
36 Producer Price Index values, not seasonally adjusted, reported by the U.S. Department of  
37 Labor, Bureau of Labor Statistics, "Commodities: Metals and Metal Products: Carbon Steel  
38 Scrap" (Series ID: WPU101211). Using the average monthly index value for the 12 months  
39 ending with December of the year preceding the year in which the adjustment is made as  
40 the numerator and the average monthly index value for the 12 months ending with  
41 December 2005 (277.2) as the denominator, multiply the estimated scrap value of \$149 per  
42 net ton (in 2005 dollars) by the resulting factor. If at any time the Producer Price Index  
43 Values are no longer published, the Council shall select a comparable calculation to adjust  
44 the estimated scrap value.

1 (iii) Multiply the adjusted carbon steel scrap value (ii) per net ton by the number of  
2 tons of carbon steel scrap applicable to the phase or phases of construction to which the  
3 letter of credit applies and subtract the resulting value from the adjusted gross cost (i).

4 (iv) Add 1 percent of the subtotal (iii) for the adjusted performance bond amount, 10  
5 percent of the subtotal (iii) for the adjusted administration and project management costs,  
6 and 20 percent of the subtotal (iii) for the adjusted future developments contingency.

7 (v) Add the subtotal (iii) to the sum of the percentages (iv) and round the resulting  
8 total to the nearest \$1,000 to determine the adjusted financial assurance amount for the  
9 reporting year.

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

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

14 (d) The certificate holder shall describe the status of the bond or letter of credit in the  
15 annual report submitted to the Council under Condition (122).

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

18 (10) If the certificate holder elects to use a bond to meet the requirements of Condition (9), the  
19 certificate holder shall ensure that the surety is obligated to comply with the requirements  
20 of applicable statutes, Council rules and this site certificate when the surety exercises any  
21 legal or contractual right it may have to assume construction, operation or retirement of the  
22 facility. The certificate holder shall also ensure that the surety is obligated to notify the  
23 Council that it is exercising such rights and to obtain any Council approvals required by  
24 applicable statutes, Council rules and this site certificate before the surety commences any  
25 activity to complete construction, operate or retire the facility.

26 (11) The certificate holder shall begin construction of the facility within three years after the  
27 effective date of the site certificate. Under OAR 345-015-0085(9), a site certificate is  
28 effective upon execution by the Council Chair and the applicant. The Council may grant an  
29 extension of the deadline to begin construction in accordance with OAR 345-027-0030 or  
30 any successor rule in effect at the time the request for extension is submitted.

31 (12) The certificate holder shall complete construction of the facility within five years after the  
32 effective date of the site certificate. Construction is complete when: (1) the facility is  
33 substantially complete as defined by the certificate holder's construction contract  
34 documents; (2) acceptance testing has been satisfactorily completed; and (3) the energy  
35 facility is ready to begin continuous operation consistent with the site certificate. The  
36 certificate holder shall promptly notify the Department of the date of completion of  
37 construction. The Council may grant an extension of the deadline for completing  
38 construction in accordance with OAR 345-027-0030 or any successor rule in effect at the  
39 time the request for extension is submitted.

40 (13) The certificate holder shall construct a facility substantially as described in the site  
41 certificate.

42 (14) Notwithstanding OAR 345-027-0050(2), an amendment of the site certificate is required if  
43 the proposed change would increase the electrical generation capacity of the facility and  
44 would increase the number of wind turbines or the dimensions of existing wind turbines.

- 1 (15) The certificate holder shall obtain all necessary state and local permits or approvals  
2 required for construction, operation and retirement of the facility or ensure that its  
3 contractors obtain necessary state and local permits or approvals.
- 4 (16) Before beginning construction, the certificate holder shall notify the Department in advance  
5 of any work on the site that does not meet the definition of "construction" in OAR 345-001-  
6 0010 or ORS 469.300 and shall provide to the Department a description of the work and  
7 evidence that its value is less than \$250,000.

**C. LAND USE, OAR 345-022-0030**

- 8 (17) The certificate holder shall construct the public road improvements described in the site  
9 certificate application to meet or exceed road standards for the road classifications in the  
10 County's Transportation System Plan and Zoning Ordinance because roads will require a  
11 more substantial section to bear the weight of the vehicles and turbine components than  
12 would usually be constructed by the County.
- 13 (18) The certificate holder shall ensure that no equipment or machinery is parked or stored on  
14 any county road except while in use.
- 15 (19) The site certificate holder shall design and construct private access roads to minimize the  
16 division of existing farm units.
- 17 (20) The certificate holder shall not locate any aboveground facility structure (including wind  
18 turbines, O&M building, substations, and meteorological towers, but not including  
19 aboveground transmission and collector lines and junction boxes) within 30 feet from any  
20 property line or within 50 feet from the right-of-way of any arterial or major collector road  
21 or street and shall not allow any architectural feature, as described in Sherman County  
22 Zoning Ordinance Section 4.2, to project into these required setbacks by more than 2 feet.
- 23 (21) The certificate holder shall locate access roads and temporary construction laydown and  
24 staging areas to minimize disturbance with farming practices and, wherever feasible, shall  
25 place turbines and transmission interconnection lines along the margins of cultivated areas  
26 to reduce the potential for conflict with farm operations. The certificate holder shall place  
27 aboveground ~~transmission and~~ collector lines and junction boxes along property lines and  
28 public road rights-of-way to the extent practicable.
- 29 (22) During operation of the facility, the certificate holder, in cooperation with landowners, shall  
30 avoid impact on cultivated land to the extent reasonably possible when performing facility  
31 repair and maintenance activities.
- 32 (23) Where necessary and feasible, the certificate holder shall provide access across construction  
33 trenches to fields within the facility site and otherwise provide adequate and timely access  
34 to properties during critical periods in the farming cycle, such as harvest.
- 35 (24) Before beginning construction of the facility, the certificate holder shall record a Farm  
36 Management Easement covering the properties on which the certificate holder locates wind  
37 power generation facilities. The certificate holder shall record the easements in the real  
38 property records of Sherman County and shall file a copy of the recorded easement with the  
39 Sherman County Planning Director.

1 (25) The certificate holder shall remove from Special Farm Assessment the portions of parcels  
2 on which facilities are located and shall pay all property taxes due and payable after the  
3 Special Farm Assessment is removed from such properties.

**D. SOIL PROTECTION, OAR 345-022-0022**

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

10 (27) During construction of the facility, the certificate holder shall limit truck traffic to  
11 designated existing and improved road surfaces to avoid soil compaction, to the extent  
12 possible.

13 (28) The certificate holder shall cover turbine pad areas with gravel or other non-erosive  
14 material immediately following exposure during construction and shall maintain the pad  
15 area covering during operation of the facility.

16 (29) During construction of the facility, the certificate holder shall restore areas that are  
17 temporarily disturbed in accordance with the methods, monitoring procedures and success  
18 criteria described in the Revegetation Plan that is incorporated in this order as Attachment  
19 B and as that Revegetation Plan may be amended from time to time. During operation of  
20 the facility, the certificate holder shall restore areas that are temporarily disturbed during  
21 facility maintenance or repairs according to the same methods and monitoring procedures.

22 (30) During operation of the facility, the certificate holder shall routinely inspect and maintain  
23 all roads, pads and trenched areas and, as necessary, maintain or repair erosion control  
24 measures.

25 (31) During construction of the underground collector system, the certificate holder shall open  
26 the smallest necessary sections of trench during each day of construction and backfill the  
27 trenches as soon as is practical after power lines have been set in the trenches.

28 (32) During construction of the facility, the certificate holder shall strip and stockpile soil from  
29 laydown areas only during the time of year when rainfall is lowest, minimizing erosion  
30 from precipitation.

31 (33) During construction of the facility, the certificate holder shall use straw bales or similar  
32 containment features to protect soil stockpiles from erosion, as needed.

33 (34) During construction of the facility, the certificate holder shall keep wind-borne erosion to a  
34 minimum by using water trucks for dust suppression, as necessary.

35 (35) During construction of the facility, the certificate holder shall restore staging locations by  
36 bringing them back to their original contours, covering them with topsoil, and revegetating  
37 or preparing them for planting of wheat or barley or use as range land.

**E. PROTECTED AREAS, OAR 345-022-0040**

- 1 (36) Without Department approval, the certificate holder shall not move any turbines within its  
2 micrositing corridors such that a worst-case visual impact beyond that stated in the ASC  
3 and ASC Supplement would occur for the John Day Wildlife Refuge, the John Day Federal  
4 Wild and Scenic River, or the John Day State Scenic Waterway (Parrish Creek to  
5 Tumwater Falls).

**F. SCENIC AND AESTHETIC VALUES, OAR 345-022-0080**

6 [No conditions]

**G. RECREATION, OAR 345-022-0100**

7 [No conditions]

**H. PUBLIC HEALTH AND SAFETY STANDARDS FOR WIND ENERGY FACILITIES, OAR 345-024-0010**

- 8 (37) During construction, operation or retirement of the facility, the certificate holder shall  
9 notify the Department within 72 hours of any accidents that may result in public health and  
10 safety concerns, including mechanical failures on the site associated with construction or  
11 operation of the facility.
- 12 (38) Before beginning construction of any phase of the facility, the certificate holder shall  
13 submit a Notice of Proposed Construction or Alteration to the Federal Aviation  
14 Administration (FAA) identifying the proposed final locations of the turbines and related or  
15 supporting facilities for that phase of the facility. The certificate holder shall notify the  
16 Department of the FAA's response as soon as it has been received.
- 17 (39) The certificate holder shall enclose the facility substation with appropriate fencing and  
18 locked gates to protect the public from electrical hazards.
- 19 (40) The certificate holder shall not locate turbine towers within 450 feet of any residence. The  
20 certificate holder shall not locate turbine towers within 450 feet of any public road, unless  
21 the certificate holder demonstrates to the Department's satisfaction that a lesser setback is  
22 consistent with the protection of public health and safety.
- 23 (41) The certificate holder shall construct turbine towers that are smooth steel structures with no  
24 exterior ladders or access to the turbine blades and shall install locked access doors  
25 accessible only to authorized personnel.
- 26 (42) During construction of the facility, the certificate holder shall follow manufacturers'  
27 recommended handling instructions and procedures to prevent damage to towers or blades  
28 that could lead to failure.
- 29 (43) During operation of the facility, the certificate holder shall have an operational safety-  
30 monitoring program and shall inspect turbine blades on a regular basis for signs of wear.  
31 The certificate holder shall repair turbine blades as necessary to protect public safety.
- 32 (44) During operation of the facility, the certificate holder shall install and maintain self-  
33 monitoring devices on each turbine, connected to a fault annunciation panel or supervisory  
34 control and data acquisition (SCADA) system at the O&M facility, to alert operators to



1 potential dangerous conditions, and the certificate holder shall remedy any dangerous  
2 conditions immediately.

3 (45) During construction of the facility, the certificate holder shall install generator step-up  
4 transformers at the base of each turbine tower in locked cabinets designed to protect the  
5 public from electrical hazards and to avoid creation of artificial habitat for raptor prey.

6 (46) During construction of the facility, the certificate holder shall require that all on-site  
7 construction contractors develop and implement a site health and safety plan that informs  
8 on-site workers and others what to do in case of an emergency and that includes the  
9 locations of fire extinguishers and nearby hospitals, important telephone numbers, and first  
10 aid techniques.

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

#### **I. SITING STANDARDS FOR WIND ENERGY FACILITIES, OAR 345-024-0015**

15 (48) The certificate holder shall construct turbines on concrete foundations and shall cover the  
16 ground within a minimum 10-foot radius with non-flammable material. The certificate  
17 holder shall maintain the non-flammable pad area covering throughout operation of the  
18 facility.

19 (49) During construction and operation of the facility, the certificate holder shall implement a  
20 plan to control the introduction and spread of noxious weeds. The certificate holder shall  
21 develop the weed control plan in consultation with the Sherman County Weed Control  
22 District and the Department.

23 (50) During construction of the facility, to reduce the visual impact of the facility, the certificate  
24 holder shall:

25 (a) Paint turbine towers, nacelles, rotors, meteorological towers, and cabinets containing  
26 pad-mounted equipment with a low-reflectivity, neutral gray, white, off-white or earth tone  
27 finish to reduce contrast with the surrounding background.

28 (b) Apply a low-reflectivity finish to the exterior of the O&M building and substation  
29 equipment to control their visual integration into the surrounding background.

30 (c) With the exception of the turbine manufacturer's logo that may appear on turbine  
31 nacelles, not allow any advertising to be used on any part of the facility or on any signs  
32 posted at the facility.

33 (d) Use only those signs required by law or for facility safety or security, except that the  
34 certificate holder may erect a sign near the O&M facility or substation to identify the wind  
35 energy facility.

36 (51) The certificate holder shall design and construct the O&M building to be generally  
37 consistent with the character of similar buildings used by commercial farmers or ranchers in  
38 the area and shall paint the building in a neutral color to blend with the surrounding  
39 background.

40 (52) The certificate holder shall not use exterior nighttime lighting except:

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

1 (b) Security lighting at the O&M building and substation, provided that such lighting is  
2 shielded or directed downward to reduce glare.

3 (c) Minimum lighting necessary for repairs or emergencies.

**J. SITING STANDARDS FOR TRANSMISSION LINES, OAR 345-024-0090**

4 (53) The certificate holder shall design the transmission lines so that alternating current electric  
5 fields shall not exceed 9 kV per meter at one meter above the ground surface in areas  
6 accessible to the public.

7 (54) The certificate holder shall design the transmission lines so that induced voltages resulting  
8 from the transmission lines are as low as reasonably achievable.

**K. THREATENED AND ENDANGERED SPECIES, OAR 345-022-0070**

9 (55) Before beginning construction of the facility, the certificate holder shall deliver to the  
10 Department surveys for threatened and endangered plant and wildlife species in newly  
11 affected areas as identified in the ASC Supplement.

12 (56) If construction of the facility begins after 2006, the certificate holder shall review the  
13 ONHIC and USFWS databases and consult with an expert designated by ODFW on an  
14 annual basis before beginning construction to determine whether nesting bald eagles or  
15 peregrine falcons have been documented to occur within two miles of the facility. The  
16 certificate holder shall report the results of the database review and consultation to the  
17 Department and to ODFW and, if there have been new documentations of nesting bald  
18 eagles or peregrine falcons within two miles of the facility, the certificate holder shall  
19 implement appropriate measures to protect the species from adverse impact, as approved by  
20 the Department and ODFW.

21 (57) The certificate holder shall implement measures to mitigate impacts to sensitive wildlife  
22 habitat during construction including, but not limited to, the following:

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

25 (b) Ensuring that a qualified person instructs construction personnel to be aware of  
26 wildlife in the area and to take precautions to avoid injuring or destroying wildlife or  
27 significant wildlife habitat.

28 (c) Avoiding unnecessary road construction, temporary disturbance and vehicle use.

**L. FISH AND WILDLIFE HABITAT, OAR 345-022-0060**

29 (58) The certificate holder shall design and construct all aboveground transmission line support  
30 structures following the practices suggested by the Avian Powerline Interaction Committee  
31 (APLIC 1996, referenced in the site certificate application, p. P-33) and shall install anti-  
32 perching devices on transmission pole tops and cross arms where the poles are located  
33 within one-half mile of any wind turbine.

34 (59) The certificate holder may construct turbines and other facility components within the 500-  
35 foot corridors shown on Figures P-1 through P-10 of the site certificate application and  
36 March 2006 supplement, subject to the following requirements addressing potential habitat  
37 impact:

1 (a) The certificate holder shall not construct any facility components within areas of  
2 Category 1 or Category 2 habitat and shall avoid temporary disturbance of Category 1 or  
3 Category 2 habitat.

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

6 (c) To the extent possible, the certificate holder shall construct facility components in the  
7 locations shown on Figure C-2 of the March 2006 site certificate application supplement.

8 (60) During construction, the certificate holder shall protect the area within a 1300-foot buffer  
9 around any active nests of the following species during the sensitive period, as provided in  
10 this condition:

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

11 The 1300-foot buffer may be reduced, with Department approval, if there is an adequate  
12 physical barrier between the nest site and the construction impacts such that a 1300-foot  
13 buffer proves to be excessive.

14 During the year in which construction of any phase occurs, the certificate holder shall use a  
15 protocol approved by the Oregon Department of Fish and Wildlife (ODFW) to determine  
16 whether there are any active nests of these species within a half-mile of any areas that  
17 would be disturbed during construction. If a nest is occupied by any of these species after  
18 the beginning of the sensitive period, the certificate holder shall not engage in high-impact  
19 construction activities (activities that involve blasting, grading or other major ground  
20 disturbance) or allow high levels of construction traffic within 1300 feet of the nest site, or  
21 such lesser distance as may be approved by the Department in the event there is an adequate  
22 physical barrier between the nest site and the construction impacts.

23 In addition, the certificate holder shall flag the boundaries of the 1300-foot buffer area, or  
24 such lesser distance as may be approved by the Department in the event there is an adequate  
25 physical barrier between the nest site and the construction impacts, and shall instruct  
26 construction personnel to avoid any unnecessary activity within the buffer area. The  
27 certificate holder shall direct a qualified ~~independent third-party~~ biological monitor, as  
28 approved by the Department, to observe the active nest sites during the sensitive period for  
29 signs of disturbance and to notify the Department of any non-compliance with this  
30 condition. If the monitor observes nest site abandonment or other adverse impact to nesting  
31 activity, the certificate holder shall implement appropriate mitigation, in consultation with  
32 ODFW and subject to the approval of the Department, unless the adverse impact is clearly  
33 shown to have a cause other than construction activity. The certificate holder may begin or  
34 resume high impact construction activities before the ending day of the sensitive period if  
35 any known nest site is not occupied by the early release date. If a nest site is occupied, then  
36 the certificate holder may begin or resume high-impact construction before the ending day  
37 of the sensitive period with the approval of ODFW, after the young are fledged. The  
38 certificate holder shall use a protocol approved by ODFW to determine when the young are  
39 fledged (the young are independent of the core nest site).

- 1 (61) The certificate holder shall conduct wildlife monitoring and mitigation in accordance with  
2 the Wildlife Monitoring and Mitigation Plan that is incorporated in the order as Attachment  
3 A and as may be amended from time to time.
- 4 (62) The certificate holder shall restore areas that are temporarily disturbed during construction  
5 in accordance with the methods, monitoring procedures and success criteria set forth in the  
6 Revegetation Plan that is incorporated in the order as Attachment B and as may be amended  
7 from time to time.
- 8 (63) Before beginning construction of the facility, the certificate holder shall acquire the legal  
9 right to create, maintain and protect a habitat mitigation area for the life of the facility by  
10 means of an outright purchase, conservation easement or similar conveyance and shall  
11 provide a copy of the documentation to the Department. Within the habitat mitigation area,  
12 the certificate holder shall improve the habitat quality in accordance with the Habitat  
13 Mitigation Plan that is incorporated in the order as Attachment C and as may be amended  
14 from time to time.
- 15 (64) For the life of the project, the certificate holder shall provide to the appropriate staff of the  
16 Confederated Tribes of the Warm Springs Reservation of Oregon the same annual  
17 mitigation and monitoring reports it submits to the Department.
- 18 (65) For the life of the project, the certificate holder shall consult annually with the appropriate  
19 staff of the Confederated Tribes of the Warm Springs Reservation of Oregon to discuss  
20 noxious weed or other issues that may arise from the close proximity of the facility site and  
21 tribal lands. The certificate holder shall provide a summary of that consultation in the  
22 annual report it provides to the Department.

#### **M. STRUCTURAL STANDARD, OAR 345-022-0020**

- 23 (66) Before beginning construction of the facility, the certificate holder shall conduct a site-  
24 specific geotechnical investigation and shall report its findings to the Oregon Department of  
25 Geology & Mineral Industries (DOGAMI). The certificate holder shall conduct the  
26 geotechnical investigation after consultation with DOGAMI and in accordance with the  
27 Oregon Board of Geologists Examiners guidelines entitled: Guidelines for Engineering  
28 Geology Reports and Site-Specific Seismic Hazard Report.
- 29 (67) The certificate holder shall design and construct the facility in accordance with  
30 requirements set forth by the State of Oregon's Building Code Division and any other  
31 applicable codes and design procedures.
- 32 (68) The certificate holder shall design, engineer and construct the facility to avoid dangers to  
33 human safety presented by non-seismic hazards. As used in this condition, "non-seismic  
34 hazards" include settlement, landslides, flooding and erosion.

#### **N. HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES, OAR 345-022-0090**

- 35 (69) Before beginning construction of any phase of the facility, the certificate holder shall  
36 provide to the Department a map showing the final design locations of all components of  
37 that phase of the facility and areas that would be temporarily disturbed during construction  
38 and also showing the areas surveyed by CH2M Hill and Archaeological Investigations  
39 Northwest, Inc. (AINW) in preparing the Cultural Resources Survey for Biglow Canyon

1 Wind Farm included in the site certificate application as Attachment S-4-1 and in Request  
2 for Amendment #2 as Attachment 15. The certificate holder shall hire qualified personnel to  
3 conduct field investigation of all areas of permanent or temporary disturbance that CH2M  
4 Hill and AINW did not previously survey and shall provide to the Department a written  
5 report of the field investigation. If any significant historic, cultural or archaeological  
6 resources are found during the field investigation, the certificate holder shall ensure that  
7 construction and operation of the facility will have no impact on the resources. The  
8 certificate holder shall instruct all construction personnel to avoid areas where the resources  
9 were found and shall implement other appropriate measures to protect the resources.

10 (70) The certificate holder shall ensure that a qualified person instructs construction personnel in  
11 the identification of cultural resources.

12 (71) The certificate holder shall ensure that a qualified archaeologist is present on site during  
13 any ground-disturbing activities, including grading and graveling; or, the certificate holder  
14 shall implement an alternate monitoring procedure, including a testing strategy, as agreed to  
15 in consultation with the Department, SHPO, and the tribes.

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

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

#### **O. PUBLIC SERVICES, OAR 345-022-0110**

33 (74) During construction of the facility, the certificate holder and its contractors shall obtain all  
34 water required for construction activities from off-site sources previously permitted for  
35 such uses.

36 (75) Before beginning operation of the facility, the certificate holder shall have in operation a  
37 well suitable for delivering water, not exceeding 5,000 gallons per day, for domestic use at  
38 the facility's O&M building and, provided the rate of extraction would not exceed 5,000  
39 gallons per day, blade-washing activities. The certificate holder shall not change the source  
40 of water for the facility's domestic use without prior Council approval.

41 (76) During operation of the facility, the certificate holder and its contractors shall obtain all  
42 water required for blade-washing activities from off-site sources previously permitted for

1 such uses or from the on-site well, provided such use of well water would not cause the rate  
2 of extraction to exceed 5,000 gallons in any one-day period.

3 (77) Before beginning construction of the facility, the certificate holder shall develop a system  
4 for monitoring state highways and local roads that would serve as transporter routes for  
5 delivering equipment to the facility site for degradation, *e.g.*, major potholes, so that safe  
6 travel paths may be maintained. The monitoring system shall include site inspection and  
7 photographic cataloging of existing road conditions so that pre-construction conditions can  
8 be compared with conditions after construction has been completed. The certificate holder  
9 shall coordinate monitoring methods and preferred mitigation efforts with Sherman County  
10 Public Works and the Oregon Department of Transportation. [Amendment #1]

11 (78) After completing construction of the facility, the certificate holder shall restore state  
12 highways and county roads affected by facility construction activities to at least their pre-  
13 construction conditions, to the satisfaction of Sherman County Public Works and the  
14 Oregon Department of Transportation.

15 (79) During construction of the facility, the certificate holder shall implement the following  
16 measures to reduce traffic delays on county roads serving as transporter routes for delivery  
17 of equipment to the facility site:

18 (a) Provide notice to adjacent landowners when construction takes place to help minimize  
19 access disruptions;

20 (b) Provide proper road signage and warnings of "Equipment on Road," "Truck Access,"  
21 or "Road Crossings;"

22 (c) Implement traffic diversion equipment, such as advance signage and pilot cars,  
23 whenever possible when slow or oversized loads are being hauled;

24 (d) Encourage carpooling for the construction workforce to reduce traffic volume;

25 (e) Employ flaggers, as necessary, to direct traffic when large equipment is entering or  
26 exiting public roads to minimize risk of accidents; and

27 (f) Maintain at least one travel lane at all times so that roadways will not be closed to  
28 traffic as a result of construction vehicles entering or exiting public roads.

#### **P. WASTE MINIMIZATION, OAR 345-022-0120**

29 (80) The certificate holder shall use hazardous materials in a manner that protects public health,  
30 safety and the environment and shall comply with applicable local, state and federal  
31 environmental laws and regulations.

32 (81) If a spill or release of hazardous materials occurs during construction or operation of the  
33 facility, the certificate holder shall notify the Department within 72 hours and shall clean up  
34 the spill or release and dispose of any contaminated soil or other materials according to  
35 applicable regulations. The certificate holder shall ensure that spill kits containing items  
36 such as absorbent pads are located on equipment and storage facilities to respond to  
37 accidental spills and shall instruct employees handling hazardous materials in the proper  
38 handling, storage and cleanup of these materials.

39 (82) During construction of the facility, the certificate holder shall provide portable toilets for  
40 on-site sewage handling and shall ensure that the portable toilets are pumped and cleaned  
41 regularly by a licensed contractor that is qualified to pump and clean portable toilet  
42 facilities.

- 1 (83) During operation of the facility, the certificate holder shall discharge sanitary wastewater  
2 generated at the O&M building to a licensed on-site septic system in compliance with  
3 county permit requirements. The certificate holder shall design the septic system with a  
4 capacity that is less than 2,500 gallons per day.
- 5 (84) During construction of the facility, the certificate holder shall implement a waste  
6 management plan that includes but is not limited to the following measures:  
7 (a) Training employees to minimize and recycle solid waste;  
8 (b) Minimizing the generation of wastes from construction through detailed estimating of  
9 materials needs and through efficient construction practices;  
10 (c) Recycling steel and other metal scrap;  
11 (d) Recycling wood waste;  
12 (e) Recycling packaging wastes, such as paper and cardboard;  
13 (f) Collecting non-recyclable waste for transport to a landfill by a licensed waste hauler;  
14 and  
15 (g) Segregating all hazardous wastes, such as used oil, oily rags and oil-absorbent  
16 materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for  
17 disposal by a licensed firm specializing in the proper recycling or disposal of hazardous  
18 wastes.
- 19 (85) The certificate holder may dispose of waste concrete on site with the permission of the  
20 landowner and in accordance with OAR 340-093-0080 and other applicable regulations.  
21 The certificate holder shall dispose of waste concrete on site by placing the material in an  
22 excavated hole, covering the concrete with at least 3 feet of topsoil, and grading the area to  
23 match existing contours. If the waste concrete is not disposed of on site, the certificate  
24 holder shall arrange for proper disposal in a licensed landfill.
- 25 (86) During construction of the facility, the certificate holder shall ensure that the wash down of  
26 concrete trucks occurs only at a contractor-owned batch plant or at tower foundation  
27 locations. If such wash down occurs at tower foundation locations, then the certificate  
28 holder shall ensure that wash down wastewater does not run off the construction site into  
29 otherwise undisturbed areas and that the wastewater is disposed of on backfill piles and  
30 buried underground with the backfill over the tower foundation.
- 31 (87) During operation of the facility, the certificate holder shall implement a waste management  
32 plan that includes but is not limited to the following measures:  
33 (a) Training employees to minimize and recycle solid waste;  
34 (b) Recycling paper products, metals, glass and plastics;  
35 (c) Collecting non-recyclable waste for transport to a landfill by a licensed waste hauler;  
36 and  
37 (d) Segregating all hazardous wastes, such as used oil, oily rags and oil-absorbent  
38 materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for  
39 disposal by a licensed firm specializing in the proper recycling or disposal of hazardous  
40 wastes.
- 41 (88) During operation of the facility, the certificate holder shall engage in blade-washing  
42 activities only in accordance with the appropriate Wastewater General Permit #1700 issued  
43 by the Oregon Department of Environmental Quality and all applicable regulations.

**Q. NOISE CONTROL REGULATIONS, OAR 340-035-0035**

1 (89) To reduce noise impacts at nearby residential areas, the certificate holder shall:

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

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

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

7 (90) If the GE 1.5-MW turbines (for which the certificate holder states the maximum sound  
8 power level warranted by the manufacturer is 104 dBA) or the GE 3.0-MW turbines  
9 (provided the certificate holder is able to demonstrate, by means of the manufacturer's  
10 warranty or other means acceptable to the Department, that the maximum sound power  
11 level of the GE 3.0-MW turbine is 106 dBA) will be used at the facility, before beginning  
12 construction, the certificate holder shall present information demonstrating to the  
13 satisfaction of the Department that each of the following requirements have been met at all  
14 25 properties identified as noise sensitive properties in the site certificate application, with  
15 the exception of the property identified as R14:

16 (a) For any noise sensitive property listed in Table 12 where the predicted maximum  
17 hourly  $L_{50}$  noise level caused by the facility would equal or exceed 50 dBA, the certificate  
18 holder shall identify the final design locations of all turbines to be built and perform a noise  
19 analysis demonstrating, in accordance with OAR 340-035-0035(1)(b)(B)(iii)(IV), that the  
20 total hourly  $L_{50}$  noise level generated by the facility would not exceed 50 dBA at the  
21 appropriate measurement point. The certificate holder shall perform the noise analysis using  
22 the CADNA/A by DataKustik GmbH of Munich, Germany, and shall assume the following  
23 input parameters:

- 24 • The maximum sound power level warranted by the manufacturer or confirmed by  
25 other means acceptable to the Department
- 26 • The exact locations of the proposed turbines
- 27 • The environmental factors included in the original noise analysis, *i.e.*, the  
28 temperature, relative humidity, barrier effects and ground effects used in the original  
29 analysis. If the certificate holder has cause to believe the environmental factors  
30 included in the original noise analysis are no longer valid for a particular receiver, the  
31 certificate holder shall perform the noise analysis for that receiver using both the  
32 environmental factors included in the original noise analysis and the environmental  
33 factors the certificate holder now believes to be applicable to that receiver.

34 (b) Where the hourly  $L_{50}$  noise levels caused by the facility would exceed 36 dBA but not  
35 exceed 50 dBA at any noise sensitive property listed in Table 12, the certificate holder has  
36 obtained a legally effective easement or real covenant pursuant to which the owner of the  
37 property authorizes the certificate holder's operation of the facility to increase ambient  
38 statistical noise levels  $L_{10}$  and  $L_{50}$  by more than 10 dBA at the appropriate measurement  
39 point. A legally effective easement or real covenant shall: (i) include a legal description of  
40 the burdened property (the noise sensitive property); (ii) be recorded in the real property  
41 records of the county; (iii) expressly benefit the certificate holder; (iv) expressly run with  
42 the land and bind all future owners, lessees or holders of any interest in the burdened  
43 property; and (v) not be subject to revocation without the certificate holder's written  
44 approval.



1 (c) If, for any noise sensitive property listed in Table 12 where the hourly L<sub>50</sub> noise levels  
2 caused by the facility would exceed 36 dBA but not exceed 50 dBA, the certificate holder  
3 has not obtained a legally effective easement or real covenant as described in (b) above, the  
4 certificate holder shall identify the final design locations of all turbines to be built and  
5 perform a noise analysis demonstrating, in accordance with OAR 340-035-  
6 0035(1)(b)(B)(iii)(IV), that the total noise generated by the facility would meet the ambient  
7 noise degradation test at the appropriate measurement point on those noise sensitive  
8 properties. The certificate holder shall perform the noise analysis using the CADNA/A by  
9 DataKustik GmbH of Munich, Germany, and shall assume the following input parameters:

- 10 • The maximum sound power level warranted by the manufacturer or confirmed by  
11 other means acceptable to the Department
- 12 • The exact locations of the proposed turbines
- 13 • The environmental factors included in the original noise analysis, *i.e.*, the  
14 temperature, relative humidity, barrier effects and ground effects used in the original  
15 analysis. If the certificate holder has cause to believe the environmental factors  
16 included in the original noise analysis are no longer valid for a particular receiver, the  
17 certificate holder shall perform the noise analysis for that receiver using both the  
18 environmental factors included in the original noise analysis and the environmental  
19 factors the certificate holder now believes to be applicable to that receiver.

20 (91) If turbines other than the GE 1.5-MW turbines (for which the certificate holder states the  
21 maximum sound power level warranted by the manufacturer is 104 dBA) or the GE 3.0-  
22 MW turbines (for which the certificate holder has assumed a maximum sound power level  
23 of 106 dBA) will be used at the facility, before beginning construction of the facility the  
24 certificate holder shall identify the final design locations of all turbines to be built, perform  
25 a complete new noise analysis for all turbines, and generate a new table listing each noise  
26 sensitive property, ~~as defined in OAR 340-035-0015(3), identified in the site certificate~~  
27 application, with the exception of the property identified as R14, and the predicted  
28 maximum hourly L<sub>50</sub> noise level at each noise sensitive property. The certificate holder  
29 shall perform the noise analysis using the CADNA/A by DataKustik GmbH of Munich,  
30 Germany, and shall assume the following input parameters:

- 31 • The maximum sound power level warranted by the manufacturer or confirmed by other  
32 means acceptable to the Department
- 33 • The exact locations of the proposed turbines
- 34 • The environmental factors included in the original noise analysis, *i.e.*, the temperature,  
35 relative humidity, barrier effects and ground effects used in the original analysis. If the  
36 certificate holder has cause to believe the environmental factors included in the original  
37 noise analysis are no longer valid for a particular receiver, the certificate holder shall  
38 perform the noise analysis for that receiver using both the environmental factors  
39 included in the original noise analysis and the environmental factors the certificate  
40 holder now believes to be applicable to that receiver.

41 After generating the new table identifying noise sensitive properties and the predicted  
42 maximum hourly L<sub>50</sub> noise level at each noise sensitive property, the certificate holder shall  
43 meet Conditions (90)(a), (90)(b) and (90)(c) with respect to the noise sensitive properties  
44 identified in that table.

**R. REMOVAL-FILL LAW**

1 [No conditions]

**S. GROUND WATER ACT**

2 [No conditions]

**T. PUBLIC HEALTH AND SAFETY**

3 (92) During operation of the facility, the certificate holder shall maintain built-in fire prevention  
4 measures in each turbine that would shut down the turbine automatically before mechanical  
5 problems create excess heat or sparks.

6 (93) During construction and operation of the facility, the certificate holder shall develop and  
7 implement fire management plans in consultation with local fire control authorities to  
8 minimize the risk of fire and to respond appropriately to any fires that occur on the facility  
9 site. In developing the fire management plans, the certificate holder should take into  
10 account the dry nature of the region and should address risks on a seasonal basis.

11 (94) During construction and operation of the facility, the certificate holder shall ensure that  
12 each on-site company vehicle contains a fire extinguisher, water spray can, shovel,  
13 emergency response procedures book, and two-way radio for immediate communication  
14 with the O&M facility.

15 (95) During construction of the facility, the certificate holder shall clear vegetation from a  
16 laydown area adjacent to each wind turbine where welding, cutting, grinding, or other  
17 flame- or spark-producing operations are likely to occur.

18 (96) Upon beginning operation of the facility, the certificate holder shall provide to all local fire  
19 departments maps of the facility site. During operation of the facility, the certificate holder  
20 shall provide to all local fire departments the names and telephone numbers of facility  
21 personnel available to respond on a 24-hour basis in case of an emergency on the facility  
22 site.

23 (97) During operation of the facility, the certificate holder shall ensure that all on-site employees  
24 receive annual fire prevention and response training by qualified instructors or members of  
25 the local fire department and that all employees are instructed to keep vehicles on roads and  
26 off dry grassland, except when off-road operation is required for emergency purposes.

27 (98) During operation of the facility, the certificate holder shall ensure that water-carrying  
28 trailers ("water buffaloes") are maintained at strategic locations around the facility site and  
29 that a water buffalo is always present at a job site where there is substantial risk of fire.  
30 Each water buffalo shall be equipped with one-inch hoses, have a capacity of 500 gallons of  
31 water, and be equipped with a 5-horsepower pump with a pumping rate of 60 gallons per  
32 minute. Each water buffalo shall be capable of being towed by on-site service vehicles or  
33 pickup trucks.

34 (99) The certificate holder shall take reasonable steps to reduce or manage exposure to  
35 electromagnetic fields (EMF), consistent with Council findings presented in the "Report of  
36 EMF Committee to the Energy Facility Siting Council," March 30, 1993, and subsequent  
37 findings. Effective on the date of this site certificate, the certificate holder shall provide

1 information to the public, upon request, about EMF levels associated with the energy  
2 facility and related transmission lines.

- 3 (100) At least 30 days before beginning preparation of detailed design and specifications for the  
4 electrical transmission lines, the certificate holder shall consult with the Oregon Public  
5 Utility Commission staff to ensure that its designs and specifications are consistent with  
6 applicable codes and standards.

## V. CONDITIONS REQUIRED BY COUNCIL RULES

7 This section lists conditions specifically required by OAR 345-027-0020 (Mandatory  
8 Conditions in Site Certificates), OAR 345-027-0028 (Monitoring Conditions), and OAR Chapter  
9 345, Division 26 (Construction and Operation Rules for Facilities). All references to the Office  
10 of Energy or Office shall be construed to refer to the Department of Energy. These conditions  
11 should be read together with the specific facility conditions included in Section IV to ensure  
12 compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to protect  
13 the public health and safety. The certificate holder shall comply with all site certificate  
14 conditions.

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

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

- 21 (102) OAR 345-027-0020(2): Except as provided in OAR 345-027-0023(6), before beginning  
22 construction, the certificate holder shall submit to the Office of Energy a legal description  
23 of the site.

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

26 (a) Substantially as described in the site certificate;

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

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

- 31 (104) OAR 345-027-0020(4): The certificate holder shall begin and complete construction of  
32 the facility by the dates specified in the site certificate.

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

41 (a) The certificate holder has construction rights on that part of the site; and

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

5 (106) OAR 345-027-0020(6): If the Council requires mitigation based on an affirmative finding  
6 under any standards of Division 22 or Division 24 of this chapter, the certificate holder  
7 shall consult with affected state agencies and local governments designated by the Council  
8 and shall develop specific mitigation plans consistent with Council findings under the  
9 relevant standards. The certificate holder must submit the mitigation plans to the Office and  
10 receive Office approval before beginning construction or, as appropriate, operation of the  
11 facility.

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

16 (108) OAR 345-027-0020(8): Before beginning construction of the facility, the certificate  
17 holder shall submit to the State of Oregon, through the Council, a bond or letter of credit,  
18 satisfactory to the Council, in an amount specified in the site certificate to restore the site to  
19 a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of  
20 credit in effect at all times until the facility has been retired. The Council may specify  
21 different amounts for the bond or letter of credit during construction and during operation  
22 of the facility.

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

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

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

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

- 1 (113) OAR 345-027-0020(13): The certificate holder shall notify the Office, the State Building  
2 Codes Division and the Department of Geology and Mineral Industries promptly if site  
3 investigations or trenching reveal that conditions in the foundation rocks differ significantly  
4 from those described in the application for a site certificate. After the Office receives the  
5 notice, the Council may require the certificate holder to consult with the Department of  
6 Geology and Mineral Industries and the Building Codes Division and to propose mitigation  
7 actions.
- 8 (114) OAR 345-027-0020(14): The certificate holder shall notify the Office, the State Building  
9 Codes Division and the Department of Geology and Mineral Industries promptly if shear  
10 zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the  
11 site.
- 12 (115) OAR 345-027-0020(15): Before any transfer of ownership of the facility or ownership of  
13 the site certificate holder, the certificate holder shall inform the Office of the proposed new  
14 owners. The requirements of OAR 345-027-0100 apply to any transfer of ownership that  
15 requires a transfer of the site certificate.
- 16 (116) OAR 345-027-0020(16): If the Council finds that the certificate holder has permanently  
17 ceased construction or operation of the facility without retiring the facility according to a  
18 final retirement plan approved by the Council, as described in OAR 345-027-0110, the  
19 Council shall notify the certificate holder and request that the certificate holder submit a  
20 proposed final retirement plan to the Office within a reasonable time not to exceed 90 days.  
21 If the certificate holder does not submit a proposed final retirement plan by the specified  
22 date, the Council may direct the Office to prepare a proposed a final retirement plan for the  
23 Council's approval. Upon the Council's approval of the final retirement plan, the Council  
24 may draw on the bond or letter of credit described in section (8) to restore the site to a  
25 useful, non-hazardous condition according to the final retirement plan, in addition to any  
26 penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of  
27 the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate  
28 holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous  
29 condition. After completion of site restoration, the Council shall issue an order to terminate  
30 the site certificate if the Council finds that the facility has been retired according to the  
31 approved final retirement plan.
- 32 (117) OAR 345-027-0023(4): If the energy facility or related or supporting facility is a  
33 transmission line, the certificate holder shall restore the reception of radio and television at  
34 residences and commercial establishments in the primary reception area to the level present  
35 prior to operations of the transmission line, at no cost to residents experiencing interference  
36 resulting from the transmission line.
- 37 (118) OAR 345-027-0023(5): If the facility includes any high voltage transmission line under  
38 Council jurisdiction:  
39 (a) The certificate holder shall design, construct and operate the transmission line in  
40 accordance with the requirements of the National Electrical Safety Code (American  
41 National Standards Institute, Section C2, 1997 Edition); and  
42 (b) The certificate holder shall develop and implement a program that provides  
43 reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or

1 structures of a permanent nature that could become inadvertently charged with electricity  
2 are grounded or bonded throughout the life of the line.

3 (119) OAR 345-027-0023(6): If the proposed energy facility is a pipeline or a transmission line  
4 or has, as a related or supporting facility, a pipeline or transmission line, the Council shall  
5 specify an approved corridor in the site certificate and shall allow the certificate holder to  
6 construct the pipeline or transmission line anywhere within the corridor, subject to the  
7 conditions of the site certificate. If the applicant has analyzed more than one corridor in its  
8 application for a site certificate, the Council may, subject to the Council's standards,  
9 approve more than one corridor. Before beginning operation of the facility, the certificate  
10 holder shall submit to the Office a legal description of the permanent right-of-way where  
11 the applicant has built the pipeline or transmission line within an approved corridor. The  
12 site of the pipeline or transmission line subject to the site certificate is the area within the  
13 permanent right-of-way.

14 (120) OAR 345-027-0028: The following general monitoring conditions apply:

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

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

24 (c) For each monitoring program described in sections (a) and (b), the certificate holder  
25 shall have quality assurance measures approved by the Office before beginning  
26 construction or, as appropriate, before beginning commercial operation.

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

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

43 (122) OAR 345-026-0080: The certificate holder shall report according to the following  
44 requirements:

1 (a) General reporting obligation for non-nuclear facilities under construction or  
2 operating:

3 (i) Within six months after beginning construction, and every six months thereafter  
4 during construction of the energy facility and related or supporting facilities, the certificate  
5 holder shall submit a semiannual construction progress report to the Council. In each  
6 construction progress report, the certificate holder shall describe any significant changes to  
7 major milestones for construction. The certificate holder shall include such information  
8 related to construction as specified in the site certificate. When the reporting date coincides,  
9 the certificate holder may include the construction progress report within the annual report  
10 described in this rule;

11 (ii) The certificate holder shall, within 120 days after the end of each calendar year  
12 after beginning construction, submit an annual report to the Council addressing the subjects  
13 listed in this rule. The Council secretary and the certificate holder may, by mutual  
14 agreement, change the reporting date.

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

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

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

26 (ii) Reliability and Efficiency of Power Production: For electric power plants,

27 (A) The plant availability and capacity factors for the reporting year. If equipment  
28 failures or plant breakdowns had a significant impact on those factors, the certificate holder  
29 shall describe them and its plans to minimize or eliminate their recurrence;

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

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

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

40 (iv) Industry Trends: A discussion of any significant industry trends that may affect  
41 the operations of the facility;

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

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

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

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

11 (123) OAR 345-026-0100: The certificate holder shall promptly notify the Office of Energy of  
12 any changes in major milestones for construction, decommissioning, operation or  
13 retirement schedules. Major milestones are those identified by the certificate holder in its  
14 construction, retirement or decommissioning plan.

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

22 (125) OAR 345-026-0170: The certificate holder shall notify the Office of Energy within 72  
23 hours of any occurrence involving the facility if:

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

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

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

## 29 VI. CONDITIONS RELATING TO AMENDMENT #2

30 (126) Prior to any disturbance in the areas of the site added in the Final Order for Amendment  
31 #2, the certificate holder shall deliver to the Department the results of a spring survey of  
32 Crossing G, conducted during the appropriate bloom time for Northern wormwood and  
Henderson's ricegrass.

33 (127) The certificate holder shall avoid any disturbance, including the placement of poles for  
34 the collector line, within 25 feet of the stream channel in the area identified as Crossing G  
35 in the Request for Amendment #2.

## 36 VII. ~~VI~~ SUCCESSORS AND ASSIGNS

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



**VIII. ~~VII.~~ SEVERABILITY AND CONSTRUCTION**

1 If any provision of this agreement and certificate is declared by a court to be illegal or in  
2 conflict with any law, the validity of the remaining terms and conditions shall not be affected,  
3 and the rights and obligations of the parties shall be construed and enforced as if the agreement  
4 and certificate did not contain the particular provision held to be invalid. In the event of a  
5 conflict between the conditions contained in this site certificate and the Council's final order, the  
6 conditions contained in this site certificate shall control.

**IX. ~~VIII.~~ GOVERNING LAW AND FORUM**

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

**X. ~~IX.~~ EXECUTION**

9 This site certificate may be executed in counterparts and will become effective upon  
10 signature by the Chair of the Energy Facility Siting Council and the authorized representative of  
11 the certificate holder. [Amendment #1]

12 **IN WITNESS WHEREOF**, this site certificate has been executed by the State of Oregon, acting  
13 by and through its Energy Facility Siting Council, and by Portland General Electric Company.  
14 [Amendment #1]

ENERGY FACILITY SITING COUNCIL

PORTLAND GENERAL ELECTRIC  
COMPANY

By: \_\_\_\_\_  
David Ripma, Chair  
Oregon Energy Facility Siting Council

By: \_\_\_\_\_  
Print: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

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## **Attachment 2: Redline of Wildlife Monitoring and Mitigation Plan**



**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**  
**[DECEMBER 21, 2006]**

Deleted: JUNE 30, 2006

1  
2 This plan describes wildlife monitoring that the certificate holder shall conduct during  
3 operation of the Biglow Canyon Wind Farm ("Biglow")<sup>1</sup>. The monitoring objectives are to  
4 determine whether operation of the facility causes significant fatalities of birds and bats and to  
5 determine whether the facility results in a loss of habitat quality. The Biglow facility consists of  
6 up to 225 wind turbines with a maximum generating capacity of 450 MW, up to 10 permanent  
7 meteorological towers and other related or supporting facilities as described in the site certificate.  
8 Biglow may be built in phases.  
9

10 The certificate holder shall use experienced personnel to manage the monitoring required  
11 under this plan and properly trained personnel to conduct the monitoring, subject to approval by  
12 the Oregon Department of Energy ("Department") as to professional qualifications. For all  
13 components of this plan except the Raptor Nesting Surveys and the Wildlife Incident Response  
14 and Handling System, the certificate holder shall direct a qualified independent third-party  
15 biological monitor, as approved by the Department, to perform monitoring tasks.  
16

17 The Wildlife Monitoring and Mitigation Plan for Biglow has the following components:  
18

- 19 1) Fatality Monitoring Program including:  
20 a) Removal Trials  
21 b) Searcher Efficiency Trials  
22 c) Fatality Monitoring Search Protocol  
23 d) Statistical Analysis  
24  
25 2) Raptor Nesting Surveys  
26  
27 3) Avian Use and Behavior Surveys  
28  
29 4) Wildlife Incident Response and Handling System  
30  
31  
32  
33  
34

35 Following is a discussion of the components of the monitoring plan, statistical analysis  
36 methods for fatality data, data reporting and potential mitigation.  
37

38 The selection of the mitigation actions that the certificate holder may be required to  
39 implement under this plan should allow for flexibility in creating appropriate responses to

<sup>1</sup> This document does not address all mitigation. The Application for Site Certificate includes proposed actions taken to avoid and reduce impacts. The Revegetation Plan addresses actions to restore habitat damaged by construction. The Habitat Mitigation Plan address actions to mitigate for the permanent loss of habitat from the "footprint" of the facility as well as assumed reduction in habitat quality due to "displacement" of bird species that rely on grassland habitat. The Proposed Order contains conditions the certificate holder must meet.

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**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**

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1 monitoring results that cannot be known in advance. If the Department determines that  
2 mitigation is needed, the certificate holder shall propose appropriate mitigation actions to the  
3 Department and shall carry out mitigation actions approved by the Department, subject to review  
4 by the Oregon Energy Facility Council ("Council").

5  
6 **1. Fatality Monitoring**

7  
8 **(a) Definitions and Methods**

9  
10 Seasons

11 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

14  
15 Search Plots

16  
17 The certificate holder shall conduct fatality monitoring within search plots. The  
18 certificate holder, in consultation with the Oregon Department of Fish and Wildlife ("ODFW"),  
19 shall select search plots based on the following sampling scheme, consistent with the sample size  
20 requirements for that phase of the facility, as outlined below: All end-of-row and 2<sup>nd</sup>-to-end-of-  
21 row wind turbines closest to the John Day River will be searched within the 8 proposed turbine  
22 corridors closest to the John Day River. Among the remaining turbines in that phase of the  
23 facility, representative turbines (e.g., every third turbine) will be sampled based on a systematic  
24 sample, consistent with the sample size described below. Turbine corridors will be broken into  
25 square or circular search plots that contain one turbine each. The edge of each plot will be no  
26 closer to the center of the turbine tower than the distance equal to the distance from the ground to  
27 the rotor tip when the rotor is in the 12 o'clock position ("maximum tip height").

28  
29 The certificate holder shall provide maps of the search plots to the Department and  
30 ODFW before beginning fatality monitoring at the facility. The certificate holder will use the  
31 same search plots for each search conducted during each specific monitoring year. During the  
32 second monitoring year, the same end-of-row turbines nearest the John Day River will be  
33 sampled, but new samples will be selected from the turbines not sampled during the first  
34 monitoring year.

35  
36 Sample Size for Standardized Carcass Searches

37  
38 The sample size for fatality monitoring is the number of turbines searched per monitoring  
39 year. The facility may be built in phases. For the first phase of development, standardized carcass  
40 searches (fatality monitoring) during the first two monitoring years will be conducted in search  
41 plots that include a minimum of 40 percent of the wind turbines in that phase but not fewer than

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**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**

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1 50 turbines, unless the entire phase is fewer than 50 turbines, in which event all turbines will be  
2 sampled.

3  
4 The sample size for future phases of the facility, if they are built, will be based on  
5 whether, under Section 1(g) of this plan, mitigation is required based on the results of fatality  
6 monitoring of the first phase.

7  
8 If no mitigation is required under Section 1(g) of this plan based on the results of fatality  
9 monitoring of the first phase, then the sample size for monitoring future phases of the facility  
10 may be reduced appropriately if the Department concurs.

11  
12 However, if mitigation is required under Section 1(g) of this plan based on the results of  
13 fatality monitoring of the first phase, then the certificate holder shall propose an appropriate  
14 sample size for monitoring the next phase of the facility. The need for, and scope of, fatality  
15 monitoring for subsequent phases are subject to the approval of the Department.

16  
17 Scheduling and Sampling Frequency

18  
19 Fatality monitoring will begin upon the commencement of commercial operation of the  
20 facility. If the facility is constructed in phases, fatality-monitoring studies for each phase will  
21 begin upon commercial operation of that phase.

22  
23 For each phase, the first fatality monitoring year will commence on the first day of the  
24 month following the commercial operation date of that phase of the facility and will conclude  
25 twelve months later (for example, if commercial operation begins in October of 2007, the  
26 monitoring year will commence on November 1, 2007, and conclude on October 31, 2008).  
27 Subsequent monitoring years of that phase will follow the same schedule (for example, the  
28 second monitoring year would begin November 1, 2008) unless the second fatality-monitoring  
29 year is postponed with the concurrence of the Department.

30  
31 In each monitoring year, the certificate holder shall conduct fatality-monitoring searches  
32 at the rates of frequency shown below. Over the course of one monitoring year, the certificate  
33 holder would conduct 16 searches<sup>2</sup>, 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)

34  
35

<sup>2</sup> Fewer than 16 searches may be conducted if searches are not possible due to safety reasons or severe weather.

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1            Duration of Fatality Monitoring

2  
3            Fatality monitoring of the first phase of the facility will be complete after two monitoring  
4 years, except as follows: A “worst-case” analysis will be used to resolve any uncertainty in the  
5 results of the two years of monitoring data for purposes of determining the mitigation  
6 requirements for the facility. If the first two years of monitoring data indicate the potential for  
7 unexpected impacts of a type that cannot be resolved appropriately by “worst-case” analysis and  
8 appropriate mitigation, additional, targeted monitoring may be conducted for the first phase of  
9 the facility for up to an additional two years before determining the mitigation requirements for  
10 the facility, or, alternatively, sample sizes larger than those outlined above will be used in  
11 monitoring of subsequent phases of development of the facility.

12  
13            Meteorological Towers

14  
15            The facility will most likely use unguyed meteorological towers. Unguyed towers are  
16 known to cause little if any bird and bat mortality. Therefore, monitoring will not occur at  
17 unguyed meteorological towers. If the meteorological towers are guyed, the certificate holder  
18 shall search all towers on the same monitoring schedule as fatality monitoring. The certificate  
19 holder will use circular search plots. The radius of the circular search plots will extend a  
20 minimum of 5 meters beyond the most distant guy wire anchor point.

21  
22            (b) Removal Trials

23  
24            The objective of the removal trials is to estimate the length of time avian and bat  
25 carcasses remain in the search area. Carcass removal studies will be conducted during each  
26 season in the vicinity of the search plots. Estimates of carcass removal rates will be used to  
27 adjust carcass counts for removal bias. “Carcass removal” is the disappearance of a carcass from  
28 the search area due to predation, scavenging or other means such as farming activity. Removal  
29 rates will be estimated by habitat and season.

30  
31            During the first phase, the certificate holder shall conduct carcass removal trials within  
32 each of the seasons defined above during the years in which fatality monitoring occurs. During  
33 the first year in which fatality monitoring occurs, trials will occur in at least eight different  
34 calendar weeks in a year, with at least one calendar week between starting dates. Trials will be  
35 spread throughout the year to incorporate the effects of varying weather, farming practices and  
36 scavenger densities. At least two trials will be started in each season. Each trial will use at least  
37 20 carcasses. For each trial, at least 5 small bird carcasses and at least 5 large bird carcasses will  
38 be distributed in cultivated agriculture habitat and at least 3 small bird carcasses and at least 3  
39 large bird carcasses will be distributed in non-cultivated habitat (grassland/shrub-steppe and  
40 CRP). In a year, about 100 carcasses will be placed in cultivated agriculture and about 60 in non-  
41 cultivated grassland/shrub-steppe and CRP for a total of about 160 trial carcasses. The number of  
42 removal trials may be reduced to one per season (80 trial carcasses) during the second year of  
43 fatality monitoring, subject to approval by the Department, if the certificate holder can  
44 demonstrate that the calculation of fatality rates will continue to have statistical validity with the  
45 reduced sample size.



**BIGLOW CANYON WIND FARM: WILDLIFE MONITORING AND MITIGATION PLAN**

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1 The need for, and scope of, removal trials for subsequent phases may be modified based  
2 on the variability of results of removal trials for the first phase, subject to the approval of the  
3 Department.

4  
5 The "small bird" size class will use carcasses of house sparrows, starlings, commercially  
6 available game bird chicks or legally obtained native birds to simulate passerines. The "large  
7 bird" size class will use carcasses of raptors provided by agencies, commercially available adult  
8 game birds or cryptically colored chickens to simulate raptors, game birds and waterfowl. If  
9 fresh bat carcasses are available, they may also be used.

10  
11 To avoid confusion with turbine-related fatalities, planted carcasses will not be placed in  
12 fatality monitoring search plots. Planted carcasses will be placed in the vicinity of search plots  
13 but not so near as to attract scavengers to the search plots. The planted carcasses will be located  
14 randomly within the carcass removal trial plots.

15  
16 Carcasses will be placed in a variety of postures to simulate a range of conditions. For  
17 example, birds will be: 1) placed in an exposed posture (e.g., thrown over the shoulder), 2)  
18 hidden to simulate a crippled bird (e.g., placed beneath a shrub or tuft of grass) and, 3) partially  
19 hidden. Trial carcasses will be marked discreetly for recognition by searchers and other  
20 personnel. Trial carcasses will be left at the location until the end of the carcass removal trial.

21  
22 It is expected that carcasses will be checked as follows, although actual intervals may  
23 vary. Carcasses will be checked for a period of 40 days to determine removal rates. They will be  
24 checked about every day for the first 4 days, and then on day 7, day 10, day 14, day 20, day 30  
25 and day 40. This schedule may vary depending on weather and coordination with the other  
26 survey work. At the end of the 40-day period, the trial carcasses and scattered feathers will be  
27 removed.

28  
29 (c) Searcher Efficiency Trials

30  
31 The objective of searcher efficiency trials is to estimate the percentage of bird and bat  
32 fatalities that searchers are able to find. The certificate holder shall conduct searcher efficiency  
33 trials on the fatality monitoring search plots in both grassland/shrub-steppe and cultivated  
34 agriculture habitat types. Searcher efficiency will be estimated by habitat type and season.  
35 Estimates of searcher efficiency will be used to adjust carcass counts for detection bias.

36  
37 During the first phase, searcher efficiency trials will be conducted in each season as  
38 defined above, during the years in which the fatality monitoring occurs. Trials will be spread  
39 throughout the year to incorporate the effects of varying weather, farming practices and  
40 scavenger densities. At least two trials will be conducted in each season. Each trial will use about  
41 20 carcasses, although the number will be variable so that the searcher will not know the total  
42 number of trial carcasses being used in any trial. For each trial, both small bird and large bird  
43 carcasses will be used in about equal numbers. "Small bird" and "large bird" size classes and  
44 carcass selection are as described above for the removal trials. A greater proportion of the trial  
45 carcasses will be distributed in cultivated agriculture habitat than in non-cultivated habitat  
46 (grassland/shrub steppe and CRP). In a year, about 100 carcasses will be placed in cultivated

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1 agriculture and about 60 in non-cultivated grassland/shrub steppe and CRP for a total of about  
2 160 trial carcasses. The number of searcher efficiency trials may be reduced to one per season  
3 (80 trial carcasses) during the second year of fatality monitoring, subject to approval by the  
4 Department, if the certificate holder can demonstrate that the calculation of fatality rates will  
5 continue to have statistical validity with the reduced sample size.

6  
7 The need for, and scope of, searcher efficiency trials for subsequent phases may be  
8 modified based on the variability of results of searcher efficiency trials for the first phase, subject  
9 to the approval of the Department.

10  
11 Personnel conducting searches will not know in advance when trials are conducted; nor  
12 will they know the location of the trial carcasses. If suitable trial carcasses are available, trials  
13 during the fall season will include several small brown birds to simulate bat carcasses. Legally  
14 obtained bat carcasses will be used if available.

15  
16 On the day of a standardized fatality monitoring search (described below) but before the  
17 beginning of the search, efficiency trial carcasses will be placed at random locations within areas  
18 to be searched. If scavengers appear attracted by placement of carcasses, the carcasses will be  
19 distributed before dawn.

20  
21 Searcher efficiency trials will be spread over the entire season to incorporate effects of  
22 varying weather and vegetation growth. Carcasses will be placed in a variety of postures to  
23 simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture  
24 (thrown over the shoulder), 2) hidden to simulate a crippled bird and 3) partially hidden.

25  
26 Each non-domestic carcass will be discreetly marked so that it can be identified as an  
27 efficiency trial carcass after it is found. The number and location of the efficiency trial carcasses  
28 found during the carcass search will be recorded. The number of efficiency trial carcasses  
29 available for detection during each trial will be determined immediately after the trial by the  
30 person responsible for distributing the carcasses.

31  
32 If new searchers are brought into the search team, additional detection trials will be  
33 conducted to ensure that detection rates incorporate searcher differences.

34  
35 (d) Coordination with the Klondike III Wind Project

36  
37 The proposed Klondike III Wind Project lies to the south of the Biglow on similar terrain  
38 and habitat. If the Council approves site certificates for both facilities and requires similar  
39 wildlife monitoring, coordination of removal trials and searcher efficiency trials would be  
40 possible. Subject to the approval of both certificate holders and the Department, the number of  
41 trials at each site and the number of trial carcasses used at each site can be reduced by combining  
42 the removal data and efficiency data from both facilities, if the certificate holder can demonstrate  
43 that the calculation of fatality rates will continue to have statistical validity for both facilities and  
44 that combining the data will not affect any other requirements of the monitoring plans for either  
45 facility.

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1 (e) Fatality Monitoring Search Protocol

2  
3 The objective of fatality monitoring is to estimate the number of bird and bat fatalities  
4 that are attributable to facility operation and associated variances. The certificate holder shall  
5 conduct fatality monitoring using standardized carcass searches.

6  
7 The certificate holder shall use a worst-case analysis to resolve any uncertainty in the  
8 results and to determine whether the data indicate that additional mitigation should be  
9 considered. The Department may require additional, targeted monitoring if the data indicate the  
10 potential for significant impacts that cannot be addressed by worst-case analysis and appropriate  
11 mitigation.

12  
13 The certificate holder shall estimate the number of avian and bat fatalities attributable to  
14 operation of the facility based on the number of avian and bat fatalities found at the facility site.  
15 All carcasses located within areas surveyed, regardless of species, will be recorded and, if  
16 possible, a cause of death determined based on blind necropsy results. If a different cause of  
17 death is not apparent, the fatality will be attributed to facility operation. The total number of  
18 avian and bat carcasses will be estimated by adjusting for removal and searcher efficiency bias.

19  
20 Personnel trained in proper search techniques ("the searchers") will conduct the carcass  
21 searches by walking parallel transects within the search plots.<sup>3</sup> Transects will be initially set at 6  
22 meters apart in the area to be searched. A searcher will walk at a rate of about 45 to 60 meters  
23 per minute along each transect searching both sides out to three meters for casualties. Search area  
24 and speed may be adjusted by habitat type after evaluation of the first searcher efficiency trial.  
25 The searchers will record the condition of each carcass found, using the following condition  
26 categories:

- 27
- 28 ■ Intact – a carcass that is completely intact, is not badly decomposed and shows no
  - 29 sign of being fed upon by a predator or scavenger
  - 30 ■ Scavenged – an entire carcass that shows signs of being fed upon by a predator or
  - 31 scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains, legs,
  - 32 pieces of skin, etc.)
  - 33 ■ Feather Spot – 10 or more feathers at one location indicating predation or scavenging
  - 34 or 2 or more primary feathers
- 35

36 All carcasses (avian and bat) found during the standardized carcass searches will be  
37 photographed as found, recorded and labeled with a unique number. Distance from observer to  
38 the carcass will be measured (to the nearest 0.25 meters), as will the perpendicular distance from  
39 the transect line to the carcass. Each carcass will be bagged and frozen for future reference and  
40 possible necropsy. A copy of the data sheet for each carcass will be kept with the carcass at all  
41 times. For each carcass found, searchers will record species, sex and age when possible, date and  
42 time collected, location, condition (e.g., intact, scavenged, feather spot) and any comments that  
43 may indicate cause of death. Searchers will map the find on a detailed map of the search area  
44 showing the location of the wind turbines and associated facilities such as power lines. The

<sup>3</sup> Where search plots are adjacent, the search area may be rectangular.

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1 certificate holder shall coordinate collection of state endangered, threatened or protected species  
2 with ODFW. The certificate holder shall coordinate collection of federal endangered, threatened  
3 or protected species with the U.S. Fish and Wildlife Service (USFWS). The certificate holder  
4 shall obtain appropriate collection permits from ODFW and USFWS.

5  
6 The searchers might discover carcasses incidental to formal carcass searches (e.g., while  
7 driving within the project area). For each incidentally discovered carcass, the searcher shall  
8 identify, photograph, record data and collect the carcass as would be done for carcasses within  
9 the formal search sample during scheduled searches

10  
11 If the incidentally discovered carcass is found within a formal search plot, the fatality  
12 data will be included in the calculation of fatality rates. If the incidentally discovered carcass is  
13 found outside a formal search plot, the data will be reported separately.

14  
15 The certificate holder shall coordinate collection of incidentally discovered state  
16 endangered, threatened or protected species with ODFW. The certificate holder shall coordinate  
17 collection of incidentally discovered federal endangered, threatened or protected species with the  
18 USFWS.

19  
20 The certificate holder shall develop and follow a protocol for handling injured birds. Any  
21 injured native birds found on the facility site will be carefully captured by a trained project  
22 biologist or technician and transported to Jean Cypher (wildlife rehabilitator) in The Dalles, the  
23 Blue Mountain Wildlife Rehabilitation Center in Pendleton or the Audubon Bird Care Center in  
24 Portland in a timely fashion.<sup>4</sup> The certificate holder shall pay costs, if any are charged, for time  
25 and expenses related to care and rehabilitation of injured native birds found on the site, unless  
26 the cause of injury is clearly demonstrated to be unrelated to the facility operations.

27  
28 (f) Statistical Methods for Fatality Estimates

29  
30 The estimate of the total number of wind facility-related fatalities is based on:

- 31  
32 (1) The observed number of carcasses found during standardized searches during the two  
33 monitoring years for which the cause of death is attributed to the facility.<sup>5</sup>  
34  
35 (2) Searcher efficiency expressed as the proportion of planted carcasses found by  
36 searchers.  
37  
38 (3) Non-removal rates expressed as the estimated average probability a carcass is  
39 expected to remain in the study area and be available for detection by the searchers  
40 during the entire survey period.

<sup>4</sup> The people and centers listed here may be changed with Department approval.

<sup>5</sup> If a different cause of death is not apparent, the fatality will be attributed to facility operation.

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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 90-meter 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
- $m_r$  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)

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) 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 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 unless a different assumption about carcass removal is made with the approval of the Department. Under these assumptions, this detection probability is estimated by:

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

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

$$m = \frac{m_i}{C} \tag{5}$$

The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds, (3) large birds, (4) raptors, (5) target grassland birds, (6) nocturnal avian migrants, 7) avian State Sensitive Species listed under OAR 635-100-0040, and 8) bats. 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  $\bar{c}$ ,  $\bar{i}$ , p,  $\hat{x}$  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<sup>th</sup> and upper 95<sup>th</sup> 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 avian 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.

(g) Mitigation

Mitigation may be appropriate if analysis of the fatality data collected after two monitoring years shows fatality rates for avian species that 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 the species groups after the initial 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 Biglow:

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
Target grassland birds (All native bird species that rely on grassland habitat and are either resident species, occurring year round, or species that nest in the area, excluding horned lark, burrowing owl and northern harrier.)	0.59
State sensitive avian species listed under OAR 635-100-0040 (Excluding raptors listed above.)	0.20

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Bat species as a group	2.50
Guyed Meteorological Tower Mortality	
Raptor T&E species and raptor species of special concern, as a group (Swainson's hawk, ferruginous hawk, golden eagle and burrowing owl; bald eagle, peregrine falcon, and any other federal threatened or endangered raptor species)	0.20/ guyed tower
Avian State Sensitive Species listed under OAR 635-100-0040 (Excluding raptors)	0.20/ guyed tower

1  
2 In addition, mitigation may be appropriate if fatality rates for individual species  
3 (especially State Sensitive Species) are higher than expected and at a level of biological concern.  
4 If the data show that a threshold of concern for a species group has been exceeded or that the  
5 fatality rate for any individual species is at a level of biological concern, mitigation shall be  
6 required if the Department determines that mitigation is appropriate based on analysis of the data  
7 and any other significant information available at the time. If mitigation is appropriate, the  
8 certificate holder, in consultation with ODFW, shall propose mitigation measures designed to  
9 benefit the affected species. This may take into consideration whether mitigation required or  
10 provided for other impacts, such as raptor nesting or grassland bird displacement, would also  
11 benefit the affected species.

12  
13 The certificate holder shall implement mitigation as approved by the Council. The  
14 Department may recommend additional, targeted data collection if the need for mitigation is  
15 unclear based on the information available at the time. The certificate holder shall implement  
16 such data collection as approved by the Council.

17  
18 Mitigation shall be designed to benefit the affected species group. Mitigation may  
19 include, but is not limited to, protection of nesting habitat for the affected group of native species  
20 through a conservation easement or similar agreement. Tracts of land that are intact and  
21 functional for wildlife are preferable to degraded habitat areas. Preference should be given to  
22 protection of land that would otherwise be subject to development or use that would diminish the  
23 wildlife value of the land. In addition, mitigation measures might include: enhancement of the  
24 protected tract by weed removal and control; increasing the diversity of native grasses and forbs;  
25 planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for  
26 raptors; reducing cattle grazing; improving wildfire response; and local research that would aid  
27 in understanding more about the species and conservation needs.

28  
29 If the threshold for bats species as a group is exceeded, the Certificate Holder shall  
30 contribute to Bat Conservation International or to a Pacific Northwest bat conservation group  
31 (\$10,000 per year for three years) to fund new or ongoing research in the Pacific Northwest to  
32 better understand impacts to the bat species impacted by the facility and to develop possible  
33 ways to reduce impacts to the affected species.

34  
35 In addition, mitigation may be appropriate if fatality rates for a State Sensitive bat species  
36 listed under OAR 635-100-0040 are higher than expected and at a level of concern. If the data  
37 show that a threshold of concern for a species group has been exceeded or that the fatality rate  
38 for any individual species is at a level of concern, mitigation shall be required if the Department  
39 determines that mitigation is appropriate based on analysis of the data and any other significant  
40 information available at the time. If mitigation is appropriate, the certificate holder, in

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1 consultation with ODFW, shall propose mitigation measures designed to benefit the affected  
2 species. The certificate holder shall implement mitigation as approved by the Council.

3  
4 **2. Raptor Nest Surveys**

5  
6 The objectives of raptor nest surveys are to estimate the size of the local breeding  
7 populations of tree or other above-ground-nesting raptor species in the vicinity of the facility and  
8 to determine whether operation of the facility results in a reduction of nesting activity or nesting  
9 success in the local populations of the following raptor species: Swainson's hawk, ferruginous  
10 hawk and golden eagle.

11  
12 **(a) Survey Protocol**

13  
14 For the species listed above, aerial and ground surveys will be used to gather nest success  
15 data on active nests, nests with young and young fledged. The certificate holder will share the  
16 data with state and federal biologists. The certificate holder shall conduct two years of post-  
17 construction raptor nest surveys for each phase of construction and long-term raptor nest surveys  
18 for the completed facility during the sensitive nesting and breeding season. One year of post-  
19 construction surveys will be done in the first nesting season after construction of the phase is  
20 completed. The second year of post-construction surveys will be done after construction of the  
21 phase is completed at a time recommended by the certificate holder and approved by the  
22 Department. Long-term surveys will be conducted starting in the fifth year following completion  
23 of the last post-construction survey and each five years thereafter for the life of the facility. The  
24 certificate holder may collaborate with other certificate holders in the vicinity of the facility in  
25 the development of useful information about future impacts on raptor nesting activity and nesting  
26 success.

27  
28 Prior to the raptor nesting surveys, the locations of known raptor nests will be reviewed  
29 from the Biglow and Klondike Wind Project pre-construction surveys as well as any nest survey  
30 data collected after construction. All known nest sites and any new nests observed within the  
31 Biglow site and within two miles of the Biglow site will be given identification numbers. Nest  
32 locations will be recorded on U.S. Geological Survey 7.5-minute quadrangle maps. Global  
33 positioning system coordinates will be recorded for each nest and integrated with the baseline  
34 database. Locations of inactive nests will also be recorded as they may become occupied during  
35 future years.

36  
37 During each raptor nesting monitoring year, the certificate holder shall conduct a  
38 minimum of one helicopter survey in late May or early June within the Biglow site and a 2-mile  
39 zone around the turbines to determine nest occupancy. Determining nest occupancy will likely  
40 require two visits to each nest: The second visit may be done by air or by ground as appropriate.  
41 For occupied nests of the species identified above, the certificate holder shall determine nesting  
42 success by a minimum of one ground visit to determine species, number of young and nesting  
43 success. "Nesting success" means that the young have successfully fledged (the young are  
44 independent of the core nest site). Nests that cannot be monitored due to the landowner denying  
45 access will be checked from a distance where feasible.

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1 (b) Mitigation  
2

3 The certificate holder shall analyze the raptor nesting data collected after two monitoring  
4 years to determine whether a reduction in either nesting success or nest use has occurred in the  
5 vicinity of Biglow. If the analysis indicates a reduction in nesting success by Swainson's hawk,  
6 ferruginous hawk or golden eagle within two miles of the facility (including the Biglow site),  
7 then the certificate holder shall propose appropriate mitigation and shall implement mitigation as  
8 approved by the Council. At a minimum, if the analysis shows that any of these species has  
9 abandoned a nest territory within the facility site or within ½ mile of the facility site, or has not  
10 fledged any young over the two-year period within the facility site or within ½ mile of the  
11 facility site, the certificate holder shall assume the abandonment or unsuccessful fledging is the  
12 result of the facility unless another cause can be demonstrated convincingly. If the Biglow  
13 facility and the Klondike facility are both required to provide mitigation for the same nest, the  
14 two certificate holders shall coordinate the required mitigation with the approval of the  
15 Department.  
16

17 Given the very low buteo nesting densities in the area, statistical power to detect a  
18 relationship between distance from a wind turbine and nesting parameters (*e.g.*, number of  
19 fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged  
20 based on trends in the data, results from other wind energy facility monitoring studies and  
21 literature on what is known regarding the populations in the region.  
22

23 If the analysis shows that mitigation is appropriate, the certificate holder shall propose  
24 mitigation for the affected species in consultation with the Department and ODFW, and shall  
25 implement mitigation as approved by the Council. Mitigation should be designed to benefit the  
26 affected species or contribute to overall scientific knowledge and understanding of what causes  
27 nest abandonment or nest failure. Mitigation may be designed to proceed in phases over several  
28 years. It may include, but is not limited to, additional raptor nest monitoring, protection of  
29 natural nest sites from human disturbance or cattle activity (preferably within the general area of  
30 the facility), or participation in research projects designed to improve scientific understanding of  
31 the needs of the affected species. Mitigation may take into consideration whether mitigation  
32 required or provided for other impacts, such as fatality impacts or grassland bird displacement,  
33 would also benefit the raptor species whose nesting success was adversely affected.  
34

35 3. Avian Use and Behavior Surveys  
36

37 The certificate holder shall conduct a before/after avian behavior and monitoring study to  
38 determine whether operation of Biglow reduces bird use and abundance in the area (often referred to  
39 as displacement). The results of this study will aid in estimating indirect avian impacts of Biglow  
40 and guide potential mitigation.  
41

42 The before/after study will use two of the observation stations that were used during the  
43 baseline study (H and I) and two new survey stations (A5 and A6). Avian use and behavior will be  
44 monitored at these four stations about 6 times each month from November 2005 – August 15, 2006  
45 (pre-construction period) and about 6 times each month during two post-construction monitoring  
46 years (after construction of wind turbines located near these survey stations).

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1  
2 These four stations are located in the northeastern portion of the Biglow area near the John  
3 Day River canyon. The areas surrounding these survey stations were subject to numerous  
4 micro-siting decisions during facility layout. Primary micro-siting decisions included shortening and  
5 re-orientating turbine corridors to avoid native habitat, maintaining a minimum one-mile distance  
6 from the centerline of the John Day River, and avoiding locating turbines on steep slopes.  
7

8 Each survey will consist of one 30-minute observation period at each of these four stations  
9 using the same protocol that was used for baseline data collection. In particular, raptor and  
10 waterfowl use estimates and behavior relative to turbine locations, and flight path maps will be  
11 compared between the pre- and post-construction periods to provide information on raptor and  
12 waterfowl displacement and to estimate indirect impacts on raptors and waterfowl.  
13

14 In addition to surveys at these four stations, searchers will also record live birds observed  
15 and their behavior in relation to turbines before or after each standardized carcass search (as  
16 described in Section 1(e) above). Observations will be recorded during 5-minute surveys at each  
17 turbine sampled during the fatality monitoring program, using standard variable circular plot point  
18 count survey methods. Collection and recording of these additional observations of live birds will be  
19 carried out in a manner that does not distract searchers from carrying out the standardized carcass  
20 searches.  
21

22 All of these avian use and behavior data, as well as raptor and waterfowl mortality observed  
23 at the turbines near these stations, will be used to understand direct and indirect impacts of the  
24 Biglow facility on raptors, waterfowl and other species.  
25

## 26 4. Biglow Wildlife Incident Response and Handling System

27

28 The Wildlife Incident Response and Handling System is a monitoring program set up for  
29 responding to and handling avian and bat casualties found by construction and maintenance  
30 personnel during construction and operation of the facility. This monitoring program includes the  
31 initial response, the handling and the reporting of bird and bat carcasses discovered incidental to  
32 construction and maintenance operations ("incidental finds"). Construction and maintenance  
33 personnel will be trained in the methods needed to carry out this program.  
34

35 All carcasses discovered by construction or maintenance personnel will be photographed,  
36 recorded and collected.  
37

38 If construction or maintenance personnel find carcasses within the plots for protocol  
39 searches, they will notify a qualified biologist, as approved by the Department, who will collect  
40 the carcasses. The fatality data will be included in the calculation of fatality rates.  
41

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42 If construction or maintenance personnel discover incidental finds that are not within  
43 plots for fatality monitoring protocol searches, they will notify a qualified biologist, and the  
44 carcass will be collected by a carcass-handling permittee (a person who is listed on state and  
45 federal scientific or salvage collection permits). Data for these incidental finds will be reported  
46 separately from standardized fatality monitoring data.

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1  
2 The certificate holder shall coordinate collection of state endangered, threatened or  
3 protected species with ODFW. The certificate holder shall coordinate collection of federal  
4 endangered, threatened or protected species with the USFWS.

5  
6 **5. Data Reporting**

7  
8 The certificate holder will report the monitoring data and analysis to the Department.  
9 Monitoring data include fatality monitoring program data, raptor nest survey data, avian use and  
10 behavior survey data and data on incidental finds by fatality searchers and Biglow personnel.  
11 The report may be included in the annual report required under OAR 345-026-0080 or may be  
12 submitted as a separate document at the same time the annual report is submitted. In addition, the  
13 certificate holder shall provide to the Department any data or record generated in carrying out  
14 this monitoring plan upon request by the Department.

15  
16 The certificate holder shall immediately notify USFWS and ODFW, respectively, in the  
17 event that any federal or state endangered or threatened species are killed or injured on the  
18 facility site.

19  
20 The public will have an opportunity to receive information about monitoring results and  
21 to offer comment. Within 30 days after receiving the annual report of monitoring results, the  
22 Department will make the report available to the public on its website and will specify a time in  
23 which the public may submit comments to the Department.<sup>6</sup>

24  
25 **6. Amendment of the Plan**

26  
27 This Wildlife Monitoring and Mitigation Plan may be amended from time to time by  
28 agreement of the certificate holder and the Council. Such amendments may be made without  
29 amendment of the site certificate. The Council authorizes the Department to agree to  
30 amendments to this plan and to mitigation actions that may be required under this plan. The  
31 Department shall notify the Council of all amendments and mitigation actions, and the Council  
32 retains the authority to approve, reject or modify any amendment of this plan or mitigation action  
33 agreed to by the Department.

<sup>6</sup> 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.

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## **Attachment 3: Redline of Revegetation Plan**



**BIGLOW CANYON WIND FARM: REVEGETATION PLAN**

**[DECEMBER 21, 2006]**

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1 **BACKGROUND**

2  
3 This plan describes methods and standards for revegetating areas temporarily  
4 disturbed as a result of construction of the proposed Biglow Canyon Wind Farm  
5 (Biglow), sited about 2.5 miles northeast of Wasco, Oregon. The objective of this plan is  
6 to restore temporarily disturbed areas to pre-construction condition or better. The site  
7 certificate for the facility requires restoration of these areas.

8  
9 Biglow is located on privately owned agricultural land used primarily for dry  
10 wheat production and, to a lesser extent, cattle grazing. The grazed land is grassland,  
11 shrub-steppe rangeland and/or fallow wheat stubble fields. A few large tracts of land have  
12 been enrolled in the Conservation Reserve Program (CRP).

13  
14 This plan specifies seed mixes, planting methods, and weed control techniques  
15 developed specifically for Biglow through consultations with the affected agencies (e.g.,  
16 Natural Resources Conservation Service), reviews of current literature, and site visits by  
17 revegetation specialists. This plan also specifies monitoring procedures to evaluate the  
18 success of revegetation efforts, including recommended remedial action should initial  
19 revegetation efforts prove unsuccessful.

20  
21 **REVEGETATION PROCEDURES**

22  
23 The following methods are to be used in areas of temporary ground and/or  
24 vegetation disturbance in the Conservation Reserve Program (CRP) grasslands and native  
25 grassland and shrub-steppe upland habitats throughout the Biglow site. Because no  
26 disturbance to wetland habitats is expected, this plan does not specify wetland  
27 revegetation methods.

28  
29 **Cultivated Areas**

30 The site certificate holder shall reseed with dry land wheat those cultivated  
31 agricultural areas temporarily disturbed by construction activities. The species  
32 composition, seed and fertilizer application rates, and application method for dry land  
33 wheat shall be coordinated with the appropriate landowner and/or farmer.

34  
35 **Seed Mixture**

36 Temporarily disturbed areas in non-cultivated/fallow areas are primarily CRP  
37 lands, with some additional grassland and shrub steppe. A seed mixture was developed in  
38 consultation with Mary Beth Smith at the local Natural Resources Conservation Service  
39 office based upon anticipated high value to both big game and non-game wildlife, and the  
40 historic vegetative climax community for the area (Table 1).

41  
42  
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# BIGLOW CANYON WIND FARM: REVEGETATION PLAN

[DECEMBER 21, 2006]

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## 1 Seed Planting Methods

2 Planting shall occur in February- early April (after the last chance of frost because  
3 forbs are being used in the seed mixture) for disturbance that occurs during the winter  
4 and spring. Planting shall occur in October-November for disturbance that occurs after  
5 the spring seeding window. Disturbed, unseeded ground may require chemical or  
6 mechanical weed control in May or June before weeds have a chance to go to seed. In  
7 general, a weed-free seedbed shall be prepared using conventional tillage equipment.  
8 Herbicide shall be sprayed to control weedy and/or noxious species, following the  
9 Oregon Department of Agriculture's Guidelines. Summer fallowing may be required.

10  
11 Areas to be seeded shall be disked twice in early spring and spot-sprayed on the  
12 ground with an herbicide. This area shall then be harrowed prior to seeding. A  
13 conventional seed drill shall be used, except in areas where a rangeland drill is deemed  
14 more applicable, with a spacing less than 12 inches and at a depth of 1/8-1/4 inch. A  
15 packing type roller shall be used to properly compact the soil over the planted seed. The  
16 prescribed seed mixture (Table 1) shall be drilled at a rate of 12 pounds pure live seed per  
17 acre. If fallowing the area is to be used to increase soil moisture content, then the same  
18 procedure shall be followed, but without seeding. Seeding would then occur the  
19 following spring.

## 20 MONITORING

21  
22  
23 The site certificate holder shall direct a qualified botanist or revegetation  
24 specialist, as approved by the Department, to conduct monitoring of seeded grassland,  
25 shrub-steppe and CRP areas.

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26  
27 In the fall of the year following each seeding, and continuing annually thereafter  
28 until the vegetation success criteria have been met, the qualified investigator shall  
29 examine a representative cross-section of the revegetated sites. At each site, the  
30 investigator shall evaluate the percent cover for the following classes:

- 31
- 32 • native forbs and grasses;
- 33 • non-native forbs and grasses;
- 34 • shrubs; and
- 35 • bare ground and rock.
- 36

37 After the success criteria have been met, the qualified investigator shall revisit the  
38 sites at least every five years for the life of the Biglow project to ensure that the habitat  
39 has not degraded. The site certificate holder shall report the investigator's findings and  
40 recommendations regarding revegetation progress and success to the Department on an  
41 annual basis as part of the annual report on Biglow.

42  
43  
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# BIGLOW CANYON WIND FARM: REVEGETATION PLAN

[DECEMBER 21, 2006]

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## SUCCESS CRITERIA

Non-cultivated areas will be deemed successfully revegetated when total canopy cover of all vegetation exceeds 30 percent<sup>1</sup>, and at least 25 percent of the ground surface is covered by native species and species in the seed mixture.

In each monitoring report to the Department, the certificate holder shall provide an assessment of revegetation success in grassland, shrub-steppe and CRP restoration areas. The Department may require reseeding or other corrective measures in those areas that do not meet the success criteria. The Department may exclude small areas from the reseeding requirement, if erosion from construction activities is low, if total vegetative cover (of native and non-native species together) exceeds 30 percent and if weed encroachment has made native seed establishment impossible. Cultivated agricultural areas are successfully revegetated if 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.

## AMENDMENT OF PLAN

This Revegetation Plan may be amended by agreement of the site certificate holder and the Energy Facility Siting Council (Council) or the Oregon Department of Energy (ODOE). Such amendments may be made without amendment of the site certificate. The Council authorizes the ODOE to agree to amendments to this plan. The ODOE 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 ODOE.

Common Name	Scientific Name	Pounds of pure live seed/ Acre
Luna pubescent wheatgrass	<i>Thinopyrum intermedium</i>	1
Sherman big bluegrass	<i>Poa ampla</i>	1
Magnar basin wildrye	<i>Leymus cinereus</i>	1
Whitmar beardless wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>Inermis</i>	2
Small burnett	<i>Sanguisorba minor</i>	0.5
Alfalfa	<i>Medicago sativa</i>	1
Sanfoin	<i>Psoralea onobrychis</i>	0.5
Sandberg bluegrass	<i>Poa secunda</i>	2
Idaho fescue	<i>Festuca idahoensis</i>	2
Basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>Tridentate</i>	1
TOTAL		12

<sup>1</sup> NRCS Draft Guidelines for CRP Stand Certification

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**Attachment 4: Redline of Habitat Mitigation Plan**



**BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN**  
**[DECEMBER 21, 2006]**

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1 I. Introduction

2  
3 This Habitat Mitigation Plan ("plan") describes methods and standards for  
4 enhancement of an area of land near the Biglow Canyon Wind Farm ("Biglow") to  
5 mitigate for certain impacts of Biglow on wildlife habitat. The applicant has proposed an  
6 approximate 117-acre habitat mitigation site ("mitigation site" or "site") as described  
7 below. The certificate holder shall enhance the mitigation site as described in this plan  
8 and shall place the site into a conservation easement for the life of the Biglow facility.  
9

10 The objective of the enhancement methods is to improve the habitat value of the  
11 mitigation area and to protect the area for wildlife use for the life of the facility. This plan  
12 has been prepared to guide the habitat enhancement efforts on the mitigation site. The  
13 plan specifies the primary actions the certificate holder must undertake and the goals,  
14 monitoring procedures, and success criteria to evaluate enhancement success.  
15

16 Prior to any construction of Biglow, the site certificate holder shall acquire the  
17 legal right to create, maintain and protect this habitat mitigation area for the life of the  
18 facility by means of an outright purchase, conservation easement or similar conveyance  
19 and shall provide a copy of the documentation to the Department of Energy  
20 ("Department"). Prior to any construction of Biglow, the site certificate holder shall  
21 complete an "Implementation Plan" approved by the Department that describes in detail  
22 how the Habitat Mitigation Plan will be enacted. During construction of Biglow, the site  
23 certificate holder will implement the Habitat Mitigation Plan so that all mitigation efforts  
24 in the plan are complete by the end of construction of Biglow's first phase.  
25

26 II. Description of the Permanent Impacts

27  
28 Biglow would permanently affect a maximum of about 181 acres. Most of the  
29 area of permanent impact (about 169 acres) would be within currently cultivated  
30 agricultural fields. This area is lower-value habitat (Category 6). Biglow would occupy –  
31 or have a permanent impact on – a maximum of about 11.92 acres of higher-value  
32 Category 3 or Category 4 habitat. The actual area of each habitat category that Biglow  
33 will permanently occupy will depend on the final design layout of the facility after  
34 consideration of micrositing factors.  
35

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36 Data collected at other wind energy facilities indicate that the operation of wind  
37 turbines may adversely affect the quality of nearby habitat that is important or essential  
38 for grassland avian species. This is often referred to as a "displacement" impact.  
39 Conducting a study at Biglow to determine whether operation of the facility had a  
40 displacement effect on grassland birds would take several years. If the study concluded  
41 that an adverse impact had occurred, additional mitigation would be needed. In lieu of  
42 conducting a multi-year study, the certificate holder has proposed to provide additional  
43 mitigation, based on the assumed likelihood that operation of Biglow would reduce the

# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

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1 quality of nearby habitat that is important or essential for grassland bird species. The  
2 affected habitat near the Biglow wind turbines includes grassland, Conservation Reserve  
3 Program ("CRP") and shrub-steppe habitat in Categories 3 and 4.

4  
5 As defined by the fish and wildlife habitat mitigation goals and standards of the  
6 Oregon Department of Fish and Wildlife (ODFW), the affected habitat and corresponding  
7 mitigation goals are as follows:

- 8  
9
- 10 • **Category 3:** Essential habitat for fish and wildlife, or important habitat for  
11 fish and wildlife that is limited either on a physiographic province or site-  
12 specific basis, depending on the individual species or population.

13 **Mitigation Goal:** No net loss of either habitat quantity or quality.  
14 Mitigation must be in-kind.

- 15  
16
- 17 • **Category 4:** Important habitat for fish and wildlife species.

18 **Mitigation Goal:** No net loss in either existing habitat quantity or quality.  
19 Mitigation may be either in-kind or out-of-kind.  
20

### 21 III. Calculation of Impacts and Size of Mitigation Area

22  
23 The area needed to mitigate for the amount of higher-value habitat occupied by  
24 Biglow turbines and related facilities is determined by Biglow's permanent impact within  
25 each habitat category. The amount of additional area needed to mitigate for a  
26 displacement effect that is uncertain cannot be precisely calculated. To determine a  
27 reasonable area for displacement mitigation, the applicant has performed a rough  
28 calculation of potential displacement impact by assuming a 50-percent reduction in use  
29 by grassland birds within 50 meters of wind turbines in native grassland/shrub steppe  
30 habitat and a 25 percent reduction in use by grassland birds within 50 meters of wind  
31 turbines in CRP habitat. The applicant further assumed that the final design locations of  
32 wind turbines within the micro-siting corridors would be such that the maximum area of  
33 native grassland would be affected (the "worst case"). The area of impact within each  
34 affected habitat category and the corresponding mitigation area for each category are as  
35 follows:

- 36  
37
- 38 • The permanent impact is about 11.92 acres, of which about 8.41 acres are  
39 Category 3 habitat (grassland, CRP and shrub-steppe combined) and about  
40 3.51 acres are Category 4 habitat (grassland, CRP and shrub-steppe  
41 combined).

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- 42
- 43 • The calculated potential displacement impact is estimated to be about 33  
44 acres, of which about 67 percent is Category 3 CRP habitat, 2 percent is  
45 Category 3 grassland/shrub steppe habitat, 26 percent is Category 4 CRP  
46 habitat, and 4 percent is Category 4 grassland/shrub steppe habitat.

# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

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- The combined impacts equal about 45 acres. Mitigation must be sufficient to replace the quantity and quality of this combined impact in order to achieve "no net loss" in habitat quantity or quality. The mitigation site must be large enough to be capable of achieving this goal. In fact, the certificate holder has agreed to secure a 117-acre mitigation site, provided that mitigation acreage that exceeds the actual acreage of permanent and indirect impacts may be applied to any future mitigation requirements.

If the data from future Stateline transect surveys demonstrates a statistically significant displacement effect on grassland bird species that is greater than the displacement effect described in the *Stateline Wind Project Wildlife Monitoring Final Report, July 2001-December 2003*, then the certificate holder shall assume that the facility is having a greater displacement effect on grassland species than was assumed when the site certificate was issued and shall propose additional mitigation. The Department shall recommend appropriate mitigation to the Council, and the certificate holder shall implement mitigation as approved by the Council.

#### IV. Description of the Mitigation Site

The mitigation site is located to the northeast of the Biglow site, less than 0.5 miles from the John Day River and just more than 0.5 miles from the nearest wind turbine. The site contains an intermittent spring that forms a small tributary drainage immediately west of the Emigrant Springs tributary and watershed.

Thus, the mitigation site sits immediately adjacent to both the John Day River riparian corridor and the large Emigrant Springs watershed, which provides additional forage, thermal and security cover, and water. No road access exists to the site, which is relatively remote and infrequently disturbed by humans.

The site is predominantly steep-sloped with shallow rocky soils and has been both recently and historically grazed. Areas most degraded from livestock grazing include the deeper soiled areas, and the spring and associated riparian draw in the southern end of the mitigation site. Horizontal and vertical vegetative structure is largely depleted because of exposed slopes and livestock grazing impacts, and large patches of cereal rye have out-competed native species in some areas. However, the higher elevation western border consists of deeper silt loam soils, with the potential to provide a more diverse vegetative community.

Adjacent property to the west is cultivated and managed for wheat production. Adjacent property to the north and east is rangeland managed for livestock production. A four-strand barbed wire fence exists along the east boundary of the mitigation site. No fence exists along the crop field boundary to the east or along the north boundary; this area is grazed when fallow or electric fence is used during the planting and harvest period to exclude livestock. The area around the spring source and downstream lacks a vegetative buffer or a diverse vegetative community because of intensive grazing. Some

# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

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1 tall sagebrush cover exists near the stream area while cattails and aquatic succulents  
2 occur in the spring source area.

3  
4 Given the current condition of the site and livestock practices, the entire  
5 mitigation site is generally characterized as Category 4 habitat, according to ODFW's  
6 Habitat Mitigation Standards.

## 7 8 V. Site Potential for Wildlife Habitat Enhancement

9  
10 For mitigation, the applicant has proposed entering into a conservation easement  
11 or similar agreement with two landowners to enhance the mitigation site's existing  
12 grassland/ shrub-steppe and riparian habitat for the life of the Biglow facility. The  
13 mitigation site presents the opportunity to enhance grassland/ shrub-steppe quality and  
14 quantity that is limited in the area for wildlife. Properly managed, the mitigation site has  
15 the potential to provide more diverse grassland in greater quantity with greater horizontal  
16 and vertical structure. If enhanced with reseeded, deeper soiled areas would provide  
17 better nesting habitat for grassland bird species and provide higher quality forage for big  
18 game. Excluding livestock with fencing would provide better fall, winter and early spring  
19 rangeland for big game by allowing sandberg bluegrass, bluebunch wheatgrass, and  
20 various forbs to grow undisturbed in shallow-soiled slopes. Removal of cattle grazing  
21 should improve the habitat quality of the entire site, and especially the deeper soiled,  
22 spring and riparian areas. The site's steeper areas also will see some benefit from reduced  
23 grazing, especially during early spring green up. As well, livestock exclusion would  
24 enhance summer habitat for ground-nesting birds.

25  
26 The mitigation site also has the potential to provide several different quality  
27 ecotones. Grassland patches in the lower-elevation eastern portion of the site may be of  
28 greater suitability to long-billed curlews because of closer proximity to the John Day  
29 River, where observations of this species breeding have been documented.

## 30 31 VI. Proposed Enhancement

32  
33 To mitigate for the permanent loss of 11.92 acres of Category 3 and Category 4  
34 habitat as a result of Biglow turbines, roads and other facilities, the site certificate holder  
35 will reseed 11.92 acres of deep-soiled Category 4 habitat within the mitigation site along  
36 the upper, more level slopes adjacent to cultivated areas. Reseeding is expected to  
37 enhance about 11.92 acres of deep-soiled Category 4 habitat to Category 2 and Category  
38 3 grassland habitats.

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39  
40 To mitigate for the displacement effect, the site certificate holder will install  
41 fences to remove livestock grazing from the 117-acre mitigation site. In combination with  
42 other actions described below, fencing is expected to improve most of the portion of the  
43 mitigation site that is not reseeded (about 106 acres) from Category 4 to at least Category  
44 3 habitat.



# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

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1 The acreages stated above for maximum permanent and indirect displacement  
2 habitat impacts (i.e., 11.92 acres and 33 acres, respectively, or a total of less than 45  
3 acres) are based on construction of the entire Biglow facility. If only a portion of the  
4 Biglow facility is constructed, the maximum permanent and indirect displacement habitat  
5 impacts are expected to be less than 45 acres based on the assumed impact model used at  
6 the Klondike III Wind Project. Nevertheless, as part of the first phase of construction, the  
7 certificate holder has proposed to secure the entire 117-acre mitigation site, install the  
8 guzzler, enhance the spring area, and have the fencing installed to exclude livestock on  
9 the entire mitigation site. However, if only a portion of the Biglow facility is constructed  
10 and full build-out does not occur, then any mitigation acreage that exceeds the actual  
11 acreage of permanent and indirect habitat impacts may be applied to any future  
12 mitigation requirements, as outlined in the Wildlife Mitigation and Monitoring Plan and  
13 as approved by the Department.

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14  
15 If approved by the Department, the certificate holder may use the mitigation site  
16 to mitigate for impacts identified by wildlife monitoring as outlined in the Wildlife  
17 Mitigation and Monitoring Plan. If the certificate holder constructs only a portion of the  
18 Biglow facility, and if the certificate holder commits to relinquish the right to construct  
19 the remainder of the facility, then, if approved by the Department, the certificate holder  
20 may apply any mitigation acreage that exceeds the actual acreage of permanent and  
21 displacement impacts to any future mitigation requirements as outlined in the Wildlife  
22 Mitigation and Monitoring Plan.

## 23 VII. Habitat Enhancement Methods

24  
25  
26 The goal of habitat enhancement is to improve the habitat quality of the  
27 mitigation site to achieve, over time, a Category 3 quality over most of the site and a mix  
28 of Category 2 and Category 3 on 11.92 reseeded acres. The site certificate holder will use  
29 the following five methods to enhance habitat quality and quantity on the site:

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### 30 Reseeding

31  
32  
33 The site certificate holder shall prepare and seed about 11.92 acres within two defined  
34 areas located along the western edge of the mitigation site.

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35  
36 A. Seed Mixture: The site certificate holder developed a seed mixture in consultation  
37 with Mary Beth Smith at the local United States Department of Agriculture  
38 Natural Resources Conservation Service office based on anticipated high value to  
39 both big game and non-game wildlife and the historic vegetative climax  
40 community for the area (Table 1). Prior to seeding, the site certificate holder shall  
41 consult with the Department to determine if any mixture adjustments, either in  
42 species composition or ratio of seed quantity among species, would further benefit  
43 wildlife.

44  
45 B. Seed Planting Methods: If enhancement efforts occur in the winter or spring,  
46 seeding should occur sometime in February through early April, after the average

# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

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1 last frost date. If enhancement efforts occur after the spring seeding window,  
2 seeding should occur sometime in October through November. Disturbed,  
3 unseeded ground may require chemical or mechanical weed control in May or  
4 June before weeds go to seed. In general, a weed-free seedbed should be prepared  
5 using conventional tillage equipment. Herbicide should be sprayed to control  
6 weedy and/or noxious species, following Oregon Department of Agriculture's  
7 (ODOA) guidelines. Summer fallowing may be required. Areas to be seeded shall  
8 be disked twice in early spring and spot-sprayed on the ground each time with an  
9 herbicide. The disked and sprayed areas must then be harrowed prior to seeding.  
10 A conventional seed drill must be used, except in areas where a rangeland drill is  
11 deemed more applicable, with a spacing less than 12 inches and at a depth of 1/8-  
12 1/4 inch. A packing type roller must be used to properly compact the soil over the  
13 planted seed. The prescribed seed mixture (Table 1) must be drilled at a rate of 12  
14 pounds pure live seed per acre. If an area is to be fallowed to increase soil  
15 moisture content, then the same procedure must be followed, but without seeding.  
16 Seeding would then occur the following spring.  
17

**Table 1. Seed mixture to be used for reseeded deeper soiled areas of the mitigation site.**

Common Name	Scientific Name	Pounds/ Acre <sup>1</sup>
Luna pubescent wheatgrass	<i>Thinopyrum intermedium</i>	1
Sherman big bluegrass	<i>Poa ampla</i>	1
Magnar basin wildrye	<i>Leymus cinereus</i>	1
Whitmar beardless wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>Inermis</i>	2
Small burnett	<i>Sanguisorba minor</i>	0.5
Alfalfa	<i>Medicago sativa</i>	1
Sanfoin	<i>Psoralea onobrychis</i>	0.5
Sandberg bluegrass	<i>Poa secunda</i>	2
Idaho fescue	<i>Festuca idahoensis</i>	2
Basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>Tridentate</i>	1
TOTAL		12

## 18 Weed Control

19 Large patches of nuisance weed species have out-competed native species in  
20 some areas of the mitigation site. The site certificate holder shall conduct eradication or  
21 control of nuisance weed species with measures approved by the Department.  
22  
23

## 24 Livestock Control

25 The site certificate holder shall fence the entire unfenced portion of the mitigation  
26 site to control and remove cattle grazing on the mitigation site. Over 9200 feet of new  
27 fence will be installed following ODFW livestock fence specifications. The existing  
28 fence (4-strand barbed wire) located on the eastern edge of the project area, and along a  
29  
30

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<sup>1</sup> Pure live seed.

## BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

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1 small 600 feet section running east/west along a portion of the northern border of the  
2 agricultural field, will continue in use to the extent it remains effective in keeping cattle  
3 out of the mitigation site.

### 4 5 **Creation of a Water Source**

6  
7 The site certificate holder shall create a water source for wildlife use in the  
8 northern end of the project area where no water source now exists. The site certificate  
9 holder will build and install a 500-gallon capacity cistern or "guzzler" using a design  
10 approved by ODFW and the Department. The new source of water should increase  
11 wildlife density in the mitigation site.

### 12 13 **Spring Enhancement**

14  
15 The site certificate holder shall plant appropriate native species of woody shrubs  
16 near the source of the intermittent spring in the southern part of the site. Browse  
17 protection shall be provided as long as necessary. Over time, the shrubs will provide  
18 cover for wildlife as well as protect soils around the spring source.

### 19 20 **VIII. Habitat Mitigation Implementation**

21  
22 Prior to the commencement of construction, the site certificate holder shall  
23 complete a Department-approved detailed implementation plan to guide implementation  
24 of the enhancement efforts. The plan shall include maps and photographs at appropriate  
25 scale and detail that show the topography, vegetation, habitat and other site conditions of  
26 the mitigation site; the proposed locations of the primary actions required by the  
27 mitigation plan; a schedule showing when the primary actions required in the mitigation  
28 plan will occur; and a proposed monitoring plan including monitoring protocols,  
29 locations of monitoring stations, and a schedule of monitoring actions. The  
30 implementation plan will take into consideration the physical and biological features of  
31 the mitigation site such as slope, soil depth, and existing habitat conditions, the  
32 appropriate time of year to conduct actions, and the appropriate sequence of actions.

33  
34 The certificate holder shall not begin enhancement efforts until the Department  
35 has reviewed and approved the implementation plan. Enhancement efforts must be  
36 complete by the end of construction of Biglow's first phase.

### 37 38 **IX. Monitoring**

#### 39 40 **Qualifications**

41  
42 For all components of this plan the site certificate holder shall direct a qualified  
43 biological monitor, as approved by the Department, to perform monitoring tasks (the  
44 "investigator").

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#### 45 46 **Reporting Schedule and Duration/Type of Monitoring**

# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

[DECEMBER 21, 2006]

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1  
2 The site certificate holder shall provide an annual report discussing the  
3 investigator's findings and recommendations regarding habitat mitigation progress and  
4 success to the Department and ODFW. The site certificate holder shall include this report  
5 as part of the annual report on Biglow or as otherwise agreed between the site certificate  
6 holder and the Department. The site certificate holder shall monitor the mitigation site for  
7 the life of the Biglow facility.

8  
9 For the reseeded sites, the investigator will monitor every year for the first five  
10 years after the first seeding or until the site is determined by the Department to be  
11 trending toward successful restoration. Thereafter, the investigator shall revisit the  
12 reseeded sites every five years for the life of the Biglow facility, and the certificate holder  
13 shall report the findings to the Department.

14  
15 The investigator also shall monitor and perform maintenance as necessary:

- 16
- 17 • Once a year for the life of the project: The effectiveness of weed eradication  
18 and control efforts throughout the mitigation site;
  - 19 • Minimum of once a year for the life of the project: and within one week of  
20 livestock turn-out on adjacent property: The effectiveness of fencing in  
21 excluding livestock from and allowing big game access to the mitigation site;
  - 22 • Minimum of annual fall maintenance for the life of the project: The  
23 effectiveness of the new water source in providing water;
  - 24 • Once a year for the life of the project: The effectiveness of enhancement  
25 actions for the spring area in providing improved cover for wildlife and  
26 reducing erosion near the spring source;
  - 27 • Once a year for the life of the project: The overall condition of the mitigation  
28 site (including such things as the degree of erosion, the occurrence of  
29 potentially problematic weed concentrations and changes in habitat quality);  
30 and
  - 31 • Once a year for the life of the project: The general level of wildlife use,  
32 especially grassland birds, within the mitigation site.
- 33

34 In addition, the inspector shall periodically categorize the entire mitigation site in  
35 terms of ODFW habitat categories. The certificate holder shall propose a schedule for  
36 monitoring to the Department after the Department has approved the implementation plan  
37 and shall conduct monitoring as approved by the Department.

## 38 39 Success Criteria

40  
41 The enhancement goal for the displacement impact is met when:

- 42
- 43 • 95 percent of the mitigation site (excluding the 11.92 acre reseeded mitigation  
44 area for permanent impact) is Category 3 habitat or better;
  - 45 • The remaining 5 percent does not pose a threat to maintaining habitat quality;  
46 and

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**BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN**

**[DECEMBER 21, 2006]**

Deleted: JUNE 30, 2006

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- At least 70 percent of the mitigation site (excluding the 11.92 acre reseeded mitigation area for permanent impact) is grassland/shrub-steppe habitat.

Enhancement above or beyond these goals may be “credited” toward mitigation for other impacts, as outlined in the Wildlife Monitoring and Mitigation Plan, upon Department approval. Mitigation credit will be based on each successfully restored acre in excess of the mitigation acres required under the site certificate and Wildlife Monitoring and Mitigation Plan.

If mitigation and enhancement actions fail to meet the success criteria, the investigator shall recommend corrective measures for Department approval. The Department may require reseeded or other corrective measures for those areas and for those actions that do not meet the success criteria. Specific success criteria are as follows:

**A. Reseeded Sites:** A reseeded site is successfully revegetated when total canopy cover of all vegetation exceeds 30 percent and at least 25 percent of the ground surface is covered by desirable plant species. Desirable plant species are native species or desirable non-native species in the approved mitigation seed mix. After the above success criteria have been met (predominantly desirable vegetation has been established), the investigator shall verify, during subsequent visits, that the site continues to meet the success criteria for revegetation. In addition, the investigator, in consultation with ODFW, shall evaluate the percentage of the reseeded site that has been enhanced to Category 2 and Category 3 quality.

If all or part of the habitat within the reseeded site falls below the revegetation or enhancement success criteria levels, the investigator shall recommend corrective measures. The Department may require reseeded or other corrective measures in those areas that do not meet the success criteria.

The enhancement goal for the permanent impact is met when 70 percent of the 11.92 acre reseeded area is Category 2 habitat, the remaining 30 percent is Category 3 habitat, and undesirable plant species (weeds) and erosion are under control and do not pose concern. Enhancement above or beyond this goal may be “credited” toward mitigation for other impacts upon Department approval.

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**B. Weed control sites.** Weed control is considered to be successful when weed species are eliminated or reduced to a level (based on considerations such as number, size and health of plants, and percent ground cover) that does not interfere with the goals of the mitigation plan. To meet success criteria, reseeded with seed approved by the Department may be necessary.

**C. Fencing:** Fencing is considered to be successful when the Department deems that it has been properly constructed per ODFW specifications, and it continues to be effective at excluding livestock from entering the mitigation site. This criterion includes existing fencing.

# BIGLOW CANYON WIND FARM: HABITAT MITIGATION PLAN

[DECEMBER 21, 2006]

Deleted: JUNE 30, 2006

1 D. **New Water Source:** The new water source is considered to be successful when  
2 the Department deems that it has been properly constructed per ODFW  
3 specifications, and it continues to provide a reasonably reliable source of water  
4 for wildlife.

5  
6 E. **Spring Area Enhancement:** Enhancement of the spring area is considered to be  
7 successful when appropriate native species of woody shrubs are planted, continue  
8 to grow, and provide cover for wildlife.

## 9 10 **Success Criteria Rationale**

11  
12 The direct impact is about 11.92 acres. The proportion of the impact is about 70  
13 percent Category 3 habitat and about 30 percent Category 4 habitat. To mitigate for this  
14 habitat loss requires enhancing and protecting for the life of the Biglow facility 11.92  
15 acres within the mitigation site from current Category 4 grassland to a quality where 70  
16 percent is Category 2 grassland and 30 percent is Category 3 grassland.

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17  
18 The calculated potential grassland bird displacement impact is estimated to be  
19 about 33 acres. The proportion of the impact is about 70 percent Category 3 habitat  
20 (about 23 acres) and about 30 percent Category 4 habitat (about 10 acres). To mitigate for  
21 the Category 3 component of this habitat loss requires enhancing about 23 acres of  
22 current Category 4 habitat to Category 3 grassland habitat. Mitigation for Category 3  
23 habitat must be in-kind: Grassland habitat must be gained for grassland habitat that is  
24 lost. To mitigate for the Category 4 component requires enhancing about 10 acres from  
25 Category 4 to Category 3. However, mitigation for Category 4 habitat does not have to be  
26 in-kind.

27  
28 The total size of the mitigation site is 117 acres. Mitigation for the footprint  
29 impact requires 11.92 acres, which leaves about 105 acres in the habitat mitigation site.  
30 Mitigation for the displacement impact is about 33 acres.

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## 31 32 **X. Amendment of the Plan**

33  
34 This Habitat Mitigation Plan may be amended from time to time by agreement of  
35 the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such  
36 amendments may be made without amendment of the site certificate. The Council  
37 authorizes the Department to agree to amendments to this plan. The Department shall  
38 notify the Council of all amendments, and the Council retains the authority to approve,  
39 reject or modify any amendment of this plan agreed to by the Department.

**Attachment 5: Letter from Richard Allan, Ball Janik LLP, to  
John White, ODOE, November 6, 2006**





# BALL JANIK LLP

A T T O R N E Y S

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PORTLAND, OREGON 97204-3219

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TELEPHONE 503-228-2525  
FACSIMILE 503-295-1058

RICHARD H. ALLAN

rallan@bjllp.com

November 6, 2006

John White  
Oregon Department of Energy  
625 Marion Street, NE  
Salem, OR 97301-3737

Re: Biglow Canyon Wind Farm/Change in Transmission Line Route

Dear Mr. White:

Section III.A.2.b of the Site Certificate for the Biglow Canyon Wind Farm describes two transmission alternatives for Biglow Canyon. PGE intends to develop the Biglow Canyon Wind Farm under the second transmission alternative, with a new substation located near the center of the Biglow Canyon Wind Farm site. From that substation, a BPA transmission line would connect to BPA's John Day substation. As described in the Site Certificate, the transmission line "would be about 7 miles long and would interconnect with an electric transformer or switching facility to be installed at BPA's John Day Substation or Switchyard for delivery of electricity to BPA's high-voltage transmission system." The Site Certificate application included information regarding the alignment of that approximately 7-mile long transmission line. The Bonneville Power Administration, which will construct and own that transmission line, now anticipates a somewhat different alignment of that transmission line. The purpose of this letter is to request confirmation from the Oregon Department of Energy that the change in alignment will not require an amendment to the Site Certificate for the Biglow Canyon Wind Farm.

As you know, the Final Order for the Klondike III Wind Project found, in Section III.1(c), that a new BPA transmission line from the BPA Klondike Schoolhouse Substation to the BPA John Day Substation "is not considered a related or supporting facility." The transmission line connecting the new substation within the Biglow Canyon Wind Farm to BPA's John Day Substation is legally indistinguishable from the new BPA transmission line described in the Klondike III Final Order. Because both transmission lines are to be constructed and owned by BPA, and are being sited under federal authority, they are not EFSC jurisdictional facilities.

PGE therefore requests confirmation under OAR 345-027-0050(5) that a change in alignment of the BPA transmission line connecting the new Biglow Canyon Substation with the BPA John Day Substation does not require an amendment to the Site Certificate for the Biglow Canyon Wind Farm. PGE anticipates requesting, in its next Site Certificate amendment

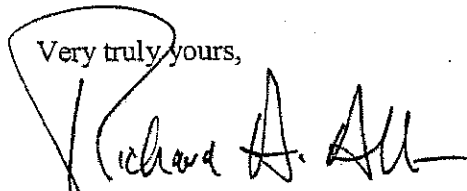
BALL JANIK LLP

John White  
November 6, 2006  
Page 2

request, that the new BPA transmission line be deleted from the description of related or supporting facilities, consistent with the treatment of the BPA transmission line in the Klondike III Final Order.

If you have any questions regarding this request, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "Richard H. Allan". The signature is written in a cursive style with a large initial "R".

Richard H. Allan

RHA:crs

cc: Rick Tetzloff, PGE  
Arya Behbehani-Divers, PGE  
Loretta Mabinton, PGE

**Attachment 6: Letter from John White, ODOE, to Richard Allan,  
Ball Janik LLP, November 14, 2006**





# Oregon

Theodore R. Kulongoski, Governor



OREGON DEPARTMENT  
OF ENERGY

625 Marion St. NE  
Salem, OR 97301-3737  
Phone: 503-378-4040  
Toll Free: 1-800-221-8035  
FAX: 503-373-7806  
[www.oregon.gov/energy](http://www.oregon.gov/energy)

RECEIVED

NOV 16 2006

BALL JANIK LLP

November 14, 2006

Mr. Richard Allan  
Ball Janik LLP  
101 Southwest Main Street, Suite 1100  
Portland, Oregon 97204-3219

Re: Biglow Canyon Wind Farm transmission line

Dear Richard:

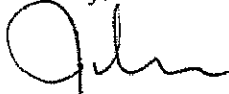
In your letter of November 6, you request a determination by the Oregon Department of Energy that the alignment of a 7-mile transmission line described in Section III.A.2.b of the Biglow Canyon site certificate may be modified without an amendment of the site certificate. Your letter states that the Bonneville Power Administration would construct and own the transmission line. This is confirmed by the Record of Decision issued by BPA on October 25, 2006. According to the ROD, BPA will build and operate a 12-mile long, 230-kV double-circuit transmission line that will serve both the Klondike III Wind Project and the Biglow Canyon Wind Farm. BPA is not bound by the Biglow Canyon site certificate in constructing the transmission line, and therefore we agree that BPA's modification of the alignment does not require a site certificate amendment. This determination is based on the understanding that the transmission line would not be built or operated by Portland General Electric.

We also agree that in the anticipated request for Amendment #2, PGE should clarify the ownership of the transmission line. In the site certificate application, Orion Sherman County Wind Farm LLC stated that it would "possibly construct an overhead transmission line approximately 7 miles long" from a new substation to be built "near the center of the Facility site" to BPA's John Day Substation (Application, p. C-2). In a footnote, Orion said: "It is possible the 7-mile transmission line would not be required because BPA might allow interconnection directly at the Facility substation. However, this determination has not yet been made and the Applicant therefore seeks to permit both the substation and the transmission line." In the amendment request, PGE should verify that BPA will allow interconnection at the project substation (a letter from BPA confirming this would help complete the record) and that, therefore, the certificate holder does not need to build the transmission line. The amendment request also should describe the interconnection infrastructure that would be part of the project.

Mr. Richard Allan  
November 14, 2006  
Page 2

In addition, PGE should review the application and the Council's final order on the application to identify findings which were based on the applicant's request to include the 7-mile transmission line as a related or supporting facility under the site certificate. For example, the amendment request should recompute the acreages of permanent and temporary disturbance shown in Table 10 of the final order if necessary to adjust for the elimination of the transmission line. Also, the site restoration cost estimate will need to be recalculated to eliminate the cost of removing the 7-mile, 230-kV transmission line and support structures.

Sincerely,



John G. White  
Senior Analyst

cc: Rick Tetzloff  
Arya Behbehani-Divers

**Attachment 7: Bonneville Power Administration Record of Decision  
for the Klondike III/Biglow Canyon Wind Integration Project,  
October 25, 2006**





## Record of Decision for the Klondike III/Biglow Canyon Wind Integration Project

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### DECISION

The Bonneville Power Administration (BPA) has decided to implement the Proposed Action identified in the Klondike III/Biglow Canyon Wind Integration Project Final Environmental Impact Statement (FEIS) (DOE/EIS-0374, September 2006). Under the Proposed Action, BPA will offer PPM Energy, Inc. (PPM) contract terms for interconnection of the proposed Klondike III Wind Project, located in Sherman County, Oregon, with the Federal Columbia River Transmission System (FCRTS). BPA will also offer Portland General Electric (PGE)<sup>1</sup> contract terms for interconnection of its proposed Biglow Canyon Wind Farm, also located in Sherman County, Oregon, with the FCRTS, as proposed in the FEIS. To interconnect these wind projects, BPA will build and operate a 12-mile long, 230-kilovolt (kV) double-circuit transmission line between the wind projects and BPA's new 230-kV John Day Substation in Sherman County, Oregon. BPA will also expand its existing 500-kV John Day Substation.

### BACKGROUND

BPA is a federal agency that owns and operates the majority of the high-voltage electric transmission system in the Pacific Northwest. This system is known as the FCRTS. BPA has adopted an Open Access Transmission Tariff (tariff) for the FCRTS, consistent with the Federal Energy Regulatory Commission's (FERC) *pro forma* open access tariff.<sup>2</sup> Under BPA's tariff, BPA offers transmission interconnection to the FCRTS to all eligible customers on a first-come, first-served basis, with this offer subject to an environmental review under the National Environmental Policy Act (NEPA).

For all requests for interconnection of generating facilities that exceed 20 MW, BPA also acts consistently with FERC's Order No. 2003, Standardization of Large Generator Interconnection Agreement and Procedures, and Order 661, Interconnection for Wind Energy, as adopted by BPA and incorporated, with FERC approval, into BPA's tariff. Orders No. 2003 and 661 provide a uniform process and agreement for offering interconnection to wind generating facilities exceeding 20 MW. In its Order 2003 compliance filing, BPA included provisions in its Large Generator Interconnection Procedures (LGIP) that reflect BPA's obligation to complete an environmental review under NEPA of a proposed large generation interconnection before deciding whether to offer a final LGIA to the party requesting interconnection.

---

<sup>1</sup>On August 16, 2006, Portland General Electric bought the rights to develop the Biglow Canyon Wind Farm from Orion Energy, LLC. Orion submitted the original interconnection request to BPA.

<sup>2</sup> Although BPA is generally not subject to FERC's jurisdiction, BPA follows the open access tariff as a matter of national policy. This course of action demonstrates BPA's commitment to non-discriminatory access to its transmission system and ensures that BPA will receive reciprocal and non-discriminatory access to the transmission systems of utilities that are subject to FERC's jurisdiction.

---

PPM and PGE are the parties requesting interconnection. Consistent with its tariff, including the LGIP, BPA needs to respond to these interconnection requests and comply with its NEPA responsibilities.

## **DESCRIPTION OF BPA's PROPOSED ACTION**

BPA will execute a Large Generation Interconnection Agreements (LGIA) with PPM to provide interconnection services for up to 300 MW from the Klondike III Wind Project. BPA will also execute a LGIA with PGE to provide interconnection services for up to 400 MW from the Biglow Canyon Wind Farm Project. These LGIAs will provide for interconnection of PPM's and PGE's respective projects to the FCRTS and their generation of electricity in the BPA Control Area. The LGIAs also will provide for construction of interconnection facilities and continued operations and maintenance of interconnection equipment.

As part of these agreements, BPA will construct and operate an approximately 12-mile, double-circuit 230-kV transmission line in Sherman County, Oregon that will provide interconnection for the electricity from the wind projects to the FCRTS. This line will extend north from the existing PPM Klondike Schoolhouse Substation for about 5 miles, and then head generally west-northwest for about 7 miles to a new John Day 230-kV Substation. Steel tubes and lattice steel towers will be used for BPA's transmission line. The line will cross privately-owned land that is used primarily for dryland wheat farming.

BPA will build and operate the new 230-kV John Day Substation immediately adjacent to its 500-kV John Day Substation. BPA will also expand the John Day 500-kV Substation and place new equipment in this substation to allow the interconnection of the new 230-kV substation to the FCRTS.

## **DESCRIPTION OF THE WIND PROJECTS**

A reasonably foreseeable consequence of the Proposed Action is the construction and operation of the wind projects respectively proposed by PPM and PGE. Although BPA has no jurisdiction over, supervision over, ownership of, or financial involvement in the proposed wind projects, the potential environmental effects associated with these wind projects have been identified in the EIS and considered by BPA decision-makers.

The Klondike III Wind Project is a wind generation project that will be located in northern Sherman County, Oregon. This wind project, which will produce about 300 MW, is located adjacent to PPM Energy's Klondike I (24 MW) and Klondike II (75 MW) wind projects. Klondike III facilities will consist of up to 165 wind turbines and towers, about 19 miles of new roads, up to 2 operations and maintenance (O&M) facilities, and one substation. Turbine towers will be approximately 263 feet tall at turbine hub height, and will range from 388 feet to 414 feet high including blades.

To collect power generated by the individual wind turbines at the Klondike III Wind Project, a network of underground 34.5-kV power lines will be installed primarily under new and existing

roads at the project. These collector lines will route the power to a switchyard, where an above-ground double-circuit 34.5-kV collector line will carry the power about 3.5 miles to a new 5-acre project substation located adjacent to PPM's existing Klondike Schoolhouse Substation. Project power will be stepped up from 34.5-kV to 230-kV at this new substation and directed to the Klondike Schoolhouse Substation, which will connect to BPA's new 230-kV transmission line.

Construction of the Klondike III Wind Project will temporarily disturb about 295 acres of land, and project facilities will occupy about 74 acres. All wind project facilities will be on private agricultural land. PPM has negotiated long-term wind energy leases with the landowners. The wind energy leases allow PPM to permit, construct, and operate wind energy facilities for a defined period. In exchange, the landowners receive compensation. The terms of the wind energy leases allow landowners to continue their farming operations in and around the wind turbine generators and other facilities where the farming activities would not impact operation and maintenance of the wind generation equipment.

The Biglow Canyon Wind Farm is a wind generation project that also will be located in northern Sherman County, Oregon. This wind project will produce up to 400 MW and will consist of up to 225 wind turbines and towers, about 40.5 miles of new roads, an O&M facility, and a substation. Turbine towers will be up to 279 feet tall at turbine hub height, and will be up to 443 feet high including blades.

A combination of underground and above-ground 34.5-kV power lines will be installed to collect power generated by the individual wind turbines at the Biglow Canyon Wind Farm. These collector lines will be routed to a new 6-acre project substation constructed by PGE along BPA's new 230-kV transmission line. Project power will be stepped up from 34.5-kV to 230-kV at this new substation, which will connect to BPA's new line.

Construction of the Biglow Canyon Wind Farm will temporarily disturb up to 388 acres of land, and project facilities will occupy up to 177 acres. Like the Klondike III Project, all Biglow Canyon project facilities will be on private agricultural land. PGE has negotiated long-term wind energy leases with the landowners in which the energy facilities will be constructed and operated in exchange for compensation, similar to the PPM leases.

## **ALTERNATIVES CONSIDERED**

In addition to the Proposed Action, the Middle Alternative and the No Action Alternative were considered in reaching this decision. Chapter 2 of the EIS more fully describes each alternative, as well as alternatives eliminated from further consideration.

The Middle Alternative would originate from the same location as the Proposed Action, but would follow a different route to the new 230-kV substation. In general, this alternative would follow the same route as the Proposed Action for the first 3 miles beginning at PPM's Klondike Schoolhouse Substation, but would then head directly west along Medler Road for about 4 miles. This alternative would then head generally northwest to BPA's John Day 500-kV Substation. This alternative would be about 12.5 miles long and would have greater land use impacts.

The No Action Alternative is often called the no-build alternative. Under this alternative, BPA would not sign interconnection agreements with PPM and PGE, and would not construct a new BPA substation, expand the existing John Day 500-kV Substation, or construct a transmission line. The environmental impacts described for each of the BPA action alternatives would not occur. In addition, it is likely that both PPM's and PGE's proposed wind projects would not be built since there appears to be no feasible interconnection option for these projects other than the FCRTS. Over the short-term, the No Action Alternative is the environmentally preferable alternative because it would have the fewest impacts in the near term. No construction would occur. In the long term, the No Action Alternative would not provide any means to integrate the power generated from the wind projects and would not support renewable energy.

These alternatives are evaluated in detail in Chapter 4 of the EIS.

## **PUBLIC COMMENT**

BPA published a Notice of Intent (NOI) to prepare an EIS for its proposed action in the Federal Register on February 14, 2005 (70 FR 7488). BPA also mailed letters on February 11, 2005, February 24, 2005, and April 12, 2005 to potentially interested parties that explained the proposal, the environmental impact statement process, and how to participate. BPA held a public scoping meeting on March 1, 2005 in Wasco, Oregon to describe BPA's proposed action and accept any scoping comments. A second scoping meeting, also in Wasco, was held on April 27, 2005. After receiving comments requesting that the scope of the EIS be expanded, BPA published a second NOI to extend the scoping period for 30 days on December 6, 2005 (70 FR 72635).

A Notice of Availability of the Draft EIS was published in the Federal Register on May 5, 2006 (71 FR 26498). A public comment period for the Draft EIS was open until June 19, 2006. BPA held a public meeting on May 24, 2006 in Wasco, Oregon to accept public comment on the draft document. During the comment period, three individuals and two agencies submitted comment letters or comment forms. In total 58 comments were identified from the public meeting notes and comment letters and forms. BPA issued the Final EIS in September 2006 (DOE/EIS-0374). A Notice of Availability of the Final EIS was published in the Federal Register on September 22, 2006 (71 FR 55463). Chapter 10 of the Final EIS contains all comments made on the Draft EIS and includes responses to those comments.

## **RATIONALE FOR DECISION**

I have decided to implement the Proposed Action identified in the EIS. The selected alternative best satisfies the purposes identified in the EIS:

- Maintain transmission system reliability to industry standards;
- Act consistently with BPA's statutory obligations;
- Continue to meet BPA's contractual obligations;

- Minimize environmental impacts including impacts on the following resources: fisheries, wildlife, water resources, soil and vegetation, land use, recreation, visual, cultural, socioeconomics, air quality, noise and human health.
- Minimize costs; and
- Encourage development of renewable energy resources.

The Proposed Action will provide a new BPA transmission line that will be built to industry standards and will maintain system reliability. Offering LGIAs to these two entities is consistent with BPA's statutory obligations and is in accordance with BPA's Open Access Transmission Tariff. The LGIAs will include provisions as necessary to ensure the continuing safe, reliable operation of the FCRTS. While rejecting the requested interconnections would not threaten the FCRTS, rejection would be contrary to BPA's Open Access Transmission Tariff, would not encourage development of renewable resources, and would not enhance the power supply available to the nation or to the Pacific Northwest. Furthermore, I find no unusual environmental circumstances or inconsistencies with BPA's environmental and social obligations to warrant rejection of the requested interconnection.

I have considered the environmental impacts of BPA's proposed action and the two wind projects described in detail in the Final EIS and the responses to comments in Chapter 10 of the Final EIS. As described in the EIS, BPA's new 230-kV transmission line, new substation, and John Day Substation expansion would generally create no or low impacts. Constructing the transmission line along the proposed route, as opposed to the alternative route considered in detail in the EIS, is environmentally superior because it will result in less total disturbance of environmental resources and be less intrusive on the landscape.

The proposed wind projects also would generally create no or low impacts. Wildlife resources and local visual resources are the only resources to receive an impact rating other than "none" or "low." The low to moderate impacts to wildlife are from the expected bird and bat mortality and the cumulative impact of this project on wildlife when combined with other proposed wind projects in the region. The low to high impacts to visual resources reflect the effect that the transmission line and the turbine strings from both wind projects would have on viewers in the local area, but this impact diminishes with distance from the project.

## **MITIGATION**

BPA minimized potential short-term and long-term environmental and social impacts of the Proposed Action through project design and development of mitigation measures. Mitigation measures presented in the Draft EIS and updated in the Final EIS for the selected alternative are presented in the attached Mitigation Action Plan. All practicable means to avoid or minimize environmental harm are adopted.

PPM and PGE have included extensive mitigation in their wind project proposals and through the Oregon state permitting process. These mitigation measures are included in the final orders and site certificates each developer received from the state of Oregon Energy Facility Siting Council (EFSC) for their respective wind project. The final orders and site certificates have been included in the FEIS, and it is expected that the wind project developers will fully comply with

the mitigation measures identified in the final orders and site certificates, as well as the terms and conditions of all other permits issued by regulatory agencies for the wind projects.

## **PUBLIC AVAILABILITY**

This ROD will be available to all interested parties and affected persons and agencies. It is being sent to all stakeholders who requested a copy. Copies of the Klondike III/Biglow Canyon Wind Integration Project Draft and Final EISs and additional copies of this ROD are available from BPA's Public Information Center, P.O. Box 3621, Portland, Oregon, 97208-3621. Copies of these documents may also be obtained by using BPA's nationwide toll-free document request line: 1-800-622-4520, or by accessing BPA's project Web site: [http://www.efw.bpa.gov/environmental\\_services/Document\\_Library/Klondike/](http://www.efw.bpa.gov/environmental_services/Document_Library/Klondike/).

## **CONCLUSION**

I have decided it is in the best interest of BPA to interconnect the two proposed wind projects to the FCRTS. BPA therefore will execute a LGIA with PPM to interconnect up to 300 MW from the Klondike III Wind Project into the FCRTS. BPA also will execute a LGIA with PGE to interconnect up to 400 MW from the Biglow Canyon Wind Farm into the FCRTS. BPA will construct a new 230-kV transmission line and substation and will expand the existing John Day 500-kV Substation to accomplish these interconnections, as described in this ROD and the Klondike III/Biglow Canyon Wind Integration Project EIS.

Issued in Portland, Oregon.

/s/ Stephen J. Wright  
Stephen J. Wright  
Administrator and  
Chief Executive Officer

October 25, 2006  
Date

**Klondike III/Biglow Canyon Wind Integration Project  
BPA Mitigation Action Plan**

<b>Resource Category</b>	<b>Mitigation</b>
<b>Land Use</b>	BPA will compensate landowners through perpetual easements for the transmission line right-of-way and access roads, and purchase the land in fee for the substation site. BPA will compensate landowners for any crop damage that occurs during construction, operation and maintenance of the transmission line and BPA substation facilities.
<b>Transportation</b>	<p>When construction of the transmission line and substation is completed, the contractor responsible for construction will remove temporary access roads and staging areas used to access tower construction sites. The contractor will rehabilitate areas temporarily affected by construction to pre-construction conditions.</p> <p>Roadways used for transporting equipment and materials to the project site will be inspected by Sherman County and BPA prior to beginning construction, to identify any potential safety concerns, such as large potholes or inadequate pavement conditions. During construction, transport routes will be periodically inspected by the County and BPA to determine if construction-related traffic is having an adverse impact on the roadway.</p>
<b>Fish and Wildlife</b>	<p>According to Oregon Department of Fish and Wildlife (ODFW) standards, the upland tree habitat is considered irreplaceable, since it supports a species (Swainson's hawk) that ODFW considers a State Sensitive species. If the Swainson's hawk nests in this area in subsequent years, construction activities will be coordinated with ODFW and limited during the Seasonality and Sensitive Period for the species, which is June 1 through August 31 (ODFW, 1994). With this coordination and mitigation, there would be no impact to Swainson's hawks from the BPA Proposed Action.</p> <p>The following mitigation actions will apply to all transmission line and substation construction activities and will benefit all habitat types and wildlife species in the project vicinity:</p> <ul style="list-style-type: none"> <li>• Sensitive areas will include all undeveloped habitats within the transmission line corridor, since these may provide nesting or denning areas for special status/sensitive wildlife. These areas will be flagged in the field prior to construction and the construction contractors will be directed to avoid them during construction.</li> <li>• Road construction and vehicle use will be minimized where possible to minimize impacts to agricultural habitats. For instance, if construction occurs during summer, access to tower locations would not have to be graveled.</li> </ul>

Resource Category	Mitigation
	<ul style="list-style-type: none"> <li>• For habitat restoration and revegetation, seed mixes will be developed in consultation with ODFW. Restoration efforts will be discussed with the landowner to take into consideration existing land use activities and their potential impacts to the vegetation restoration efforts.</li> <li>• Measures to reduce the potential spread of noxious weeds will be developed in consultation with the Sherman County Soil and Water Conservation District. The facility will be monitored regularly to prevent the spread of noxious weeds.</li> <li>• Best management practices (BMPs) and erosion and sediment control measures will be employed during construction of the transmission line and substation to avoid and/or minimize impacts to downslope areas. Areas of unavoidable soil disturbance will be stabilized downslope with straw wattles and bio-filter bags.</li> </ul>
<p><b>Vegetation</b></p>	<p>The following mitigation actions will apply to all transmission line and substation construction activities and are anticipated to benefit all habitat vegetation/categories and wildlife species:</p> <ul style="list-style-type: none"> <li>• Maps will be prepared to show sensitive areas that are off limits during the construction phase. These areas will be flagged in the field prior to construction and the construction contractors will be directed to avoid them during construction. Sensitive areas may include vegetation types that provide nesting or denning areas for special status/sensitive wildlife.</li> <li>• Road construction and vehicle use will be minimized where possible to minimize impacts to sensitive habitats. For instance, if construction occurs during summer, access to tower locations will not have to be graveled.</li> <li>• For habitat restoration and revegetation, seed mixes will be developed in consultation with ODFW. Restoration efforts will be discussed with the landowner to take into consideration existing land use activities and their potential impacts to the vegetation restoration efforts.</li> <li>• A weed survey will be completed prior to and following construction. Measures to reduce the potential spread of noxious weeds will be developed in consultation with the Sherman County Soil and Water Conservation District. The facility will be monitored regularly to prevent the spread of noxious weeds.</li> </ul> <p>BMPs and erosion and sediment control measures will be employed during project construction to avoid and/or minimize impacts to downslope areas. Areas of unavoidable soil disturbance will be bounded downslope with straw wattles and bio-filter bags.</p>

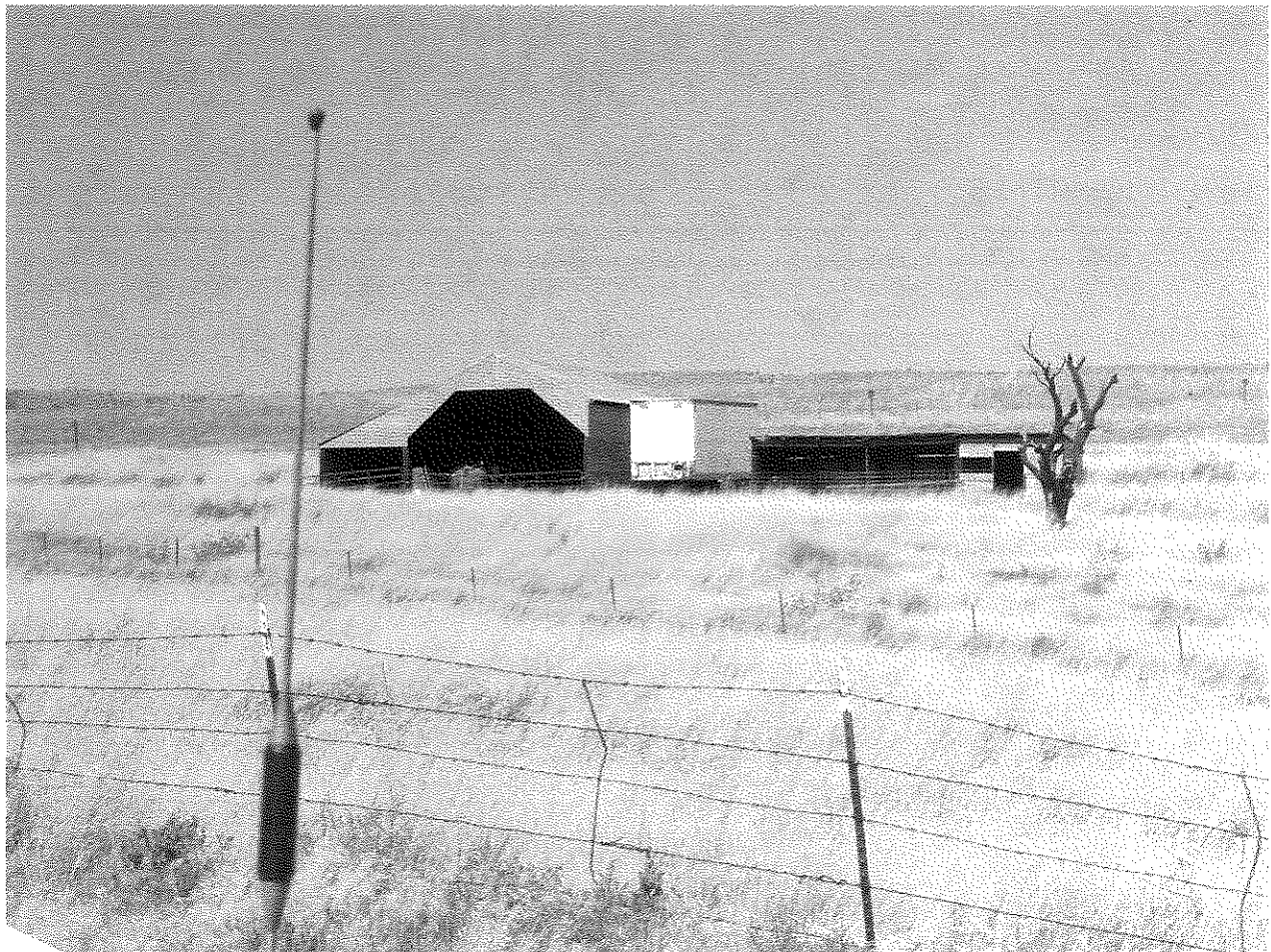
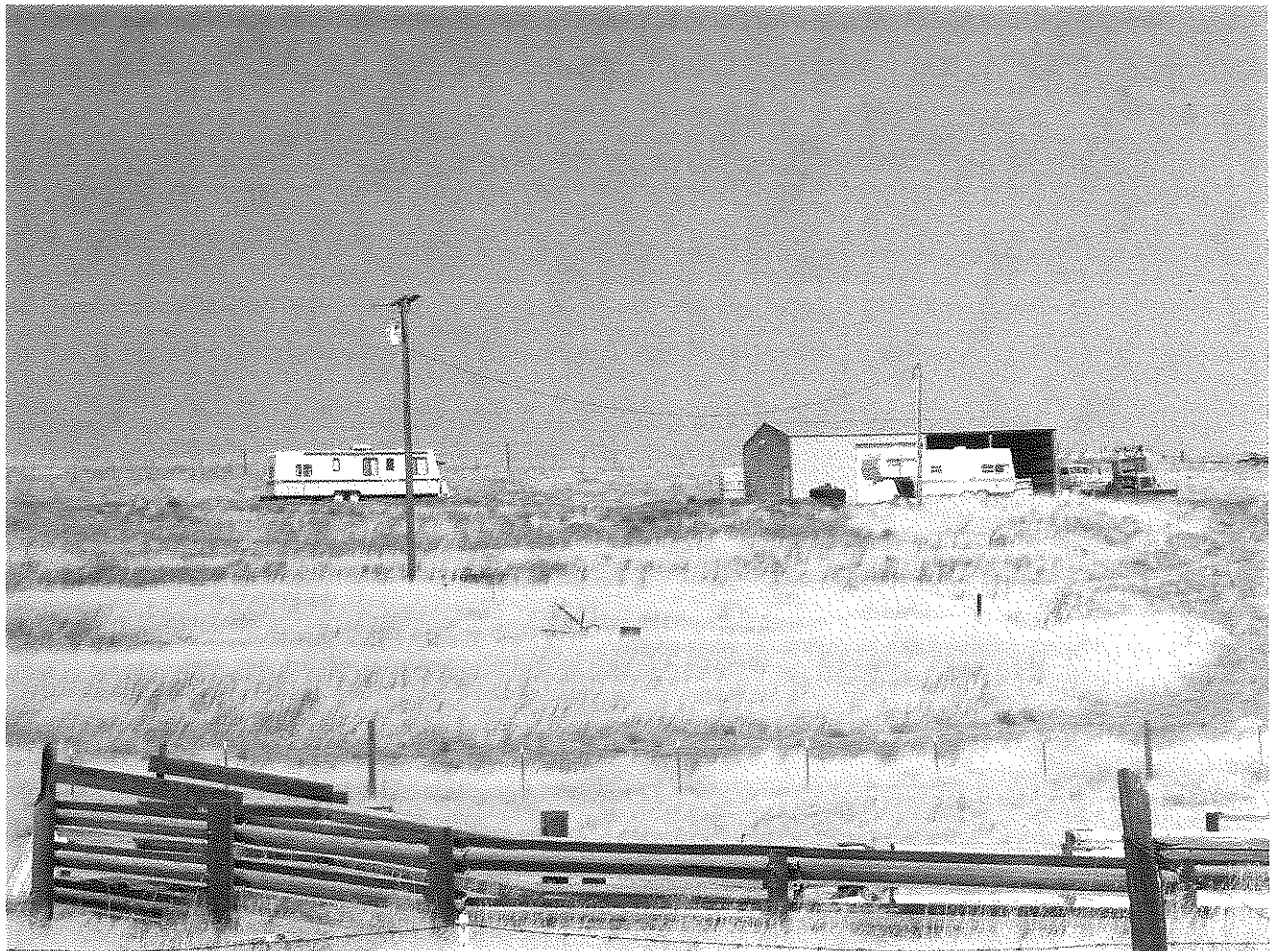


Resource Category	Mitigation
<p><b>Visual Resources</b></p>	<p>The following measures will be implemented to further reduce potential impacts.</p> <ul style="list-style-type: none"> <li>• Use of steel tubes (vs. steel lattice) for transmission line towers to the extent possible.</li> <li>• Use of non-specular conductors (i.e., a conductor that has been modified to reduce the amount of reflected light from its surface).</li> </ul>
<p><b>Cultural Resources</b></p>	<p>BPA will avoid disturbing known archaeological and historic resources. Local tribes that historically lived in the area will be consulted to identify any cultural resources to avoid.</p> <p>During construction, archaeological sites and historic homesteads will be temporarily flagged in the field and on construction maps before and during construction. If necessary, archaeological construction monitors will be present during construction in selected locations to prevent accidental damage to identified cultural resources, as well as cultural resources that may exist in portions of the project area identified by the tribes through consultation.</p> <p>In the event that undiscovered archaeological sites are inadvertently disturbed during construction, construction work will be halted at the site until an archaeologist or cultural resource specialist could assess the site and determine appropriate mitigation measures.</p>
<p><b>Noise, Public Health and Safety</b></p>	<p>BPA will develop and implement a Spill Prevention and Contingency Plan to minimize the potential for spills of hazardous material including provisions for storage of hazardous materials and refueling of construction equipment outside of riparian zones.</p> <p>To minimize the potential of fires starting from construction-related activities, roads will be established prior to construction to minimize vehicle contact with dry grass; idling vehicles in grassy areas will be avoided; and open flames, such as cutting torches, will be kept away from grassy areas. Staging areas will be graveled to minimize fire potential.</p> <p>BPA will take all appropriate precautions to prevent fires and follow the fire control regulations, including equipping all vehicles with basic fire-fighting equipment including extinguishers, shovels, and other equipment deemed appropriate for fighting grass fires. BPA will also develop a fire prevention and suppression plan. BPA prohibits the storage of flammable materials on the right-of-way. Operation and maintenance of the proposed line and substation will follow prescribed policies that minimize the potential for fire.</p> <ul style="list-style-type: none"> <li>• Prior to the start of construction, the contractor will receive environmental and safety training and prepare and submit for BPA's approval a safety plan. This plan will detail how the contractor will manage hazardous materials such as fuel, oil, solvents etc., and how emergency situations will be handled. The</li> </ul>

Resource Category	Mitigation
	<p>safety plan will be kept on site at all times during construction.</p> <ul style="list-style-type: none"> <li>• During construction, the contractor will hold meetings, as needed, to go over potential safety issues and concerns.</li> <li>• At the end of each workday, the contractor and any subcontractors will secure the site to protect equipment and the general public.</li> <li>• The contractor and any subcontractors will be trained in tower climbing rescue techniques, first aid including cardiopulmonary resuscitation, and safety equipment inspection.</li> <li>• BPA will provide notice to the landowners and the public of construction activities.</li> <li>• If implosive fittings are used to connect the conductors, BPA or the contractor will notify landowners and local government officials in advance.</li> <li>• During construction activities, the contractor will follow BPA specifications for grounding fences and other objects on and near the proposed right-of-way.</li> </ul>
Air Quality	<p>BPA will mitigate for dust during construction and follow all necessary local and federal requirements. During days when the Air Quality Index is moderate or worse, dust mitigation measures will also be used.</p> <p>The following mitigation measures could be used:</p> <ul style="list-style-type: none"> <li>• Water trucks will be used on an as-needed basis to minimize dust</li> <li>• Gravel (2-3 inch) will be placed on access roads before turbine construction</li> <li>• All construction vehicles will travel at low speeds to minimize dust</li> <li>• Chipping or “lop and scatter” will be used to dispose of small limbs and branches. No burning will be allowed.</li> <li>• All on-road vehicles will comply with Oregon State emission standards.</li> <li>• Off-road vehicles will be in good running condition, minimizing their emissions.</li> <li>• On-road diesel vehicles will use low sulfur fuel.</li> <li>• Reseeding and revegetation will minimize exposed soil prone to erosion.</li> </ul>

**Attachment 8: Photographs of Dittmer property  
(travel trailers and farm buildings)**







**Attachment 9: CH2MHill Technical Memorandum, December 4, 2006,  
“Biglow Canyon Wind Farm – Collection Line and Access Roads;  
Wetlands and Waters Determination and Rare Plant Habitat Survey”**





## Biglow Canyon Wind Farm – Collection Line and Access Roads; Wetlands and Waters Determination and Rare Plant Habitat Survey

PREPARED FOR: Rick Tetzloff/PGE  
PREPARED BY: Nichole Coulter and Jay Lorenz/CH2M HILL  
COPIES: Mike Pappalardo/CH2M HILL  
DATE: December 4, 2006

### Summary

CH2M HILL conducted a wetland and waters determination for the proposed Biglow Canyon Wind Farm in the summer of 2005. Results of previous fieldwork can be found in the EFSC Site Certificate Application (ASC) (February 2006). Additional information addressing comments to the ASC is presented in the Supplement to the ASC (March 2006).

The purpose of this determination was to investigate additional changes to the facilities layout as shown in Figure J-1 of the Supplement. CH2M HILL conducted a site visit on November 29, 2006 for the purpose of determining if wetlands or jurisdictional waters, as defined under Section 404 of the Clean Water Act and the Oregon Removal-Fill Law, are present in the pathway of new proposed access roads and additional collector line. An assessment to determine presence of habitat likely to support federal or state listed rare plant species was also conducted during the wetland and jurisdictional water field surveys. This memo serves as an amendment to the information presented in the EFSC Site Certificate reports discussed above.

No jurisdictional wetlands were identified within the study area (Figure 1). One potentially jurisdictional water was identified within the study area. Stream Crossing G is an intermittent stream, which is a tributary of Helm Creek, a tributary of the Columbia River. No federal or state listed plant habitat was identified; however, it is suggested that a spring survey be conducted to verify these findings.

Federal and state permits will be required before work can be performed in the potentially jurisdictional water. This delineation represents the best professional judgment of CH2M HILL; however, the US Army Corps of Engineers (USACE) and Oregon Division of State Lands (DSL) will make the final jurisdictional determinations for regulatory permitting.

## Methods

### Office Review

Prior to conducting the site investigation, the following documents were reviewed:

- U.S. Geological Survey (USGS) Topographic Map, Klondike, Oregon quadrangle (USGS, 1971); Quinton, Oregon quadrangle (USGS, 1976); Rufus, Oregon quadrangle (USGS, 1971); Wasco, Oregon quadrangle (USGS, 1987)
- National Wetland Inventory (NWI) Map, Klondike, Oregon quadrangle (USFWS, 1991); Quinton, Oregon quadrangle (USFWS, 1983); Rufus, Oregon quadrangle (USFWS, 1983); Wasco, Oregon quadrangle (USFWS, 1988)
- Natural Resource Conservation Service (NRCS) Soil Survey of Sherman County, Oregon (NRCS, 1992)
- Hydric Soils List: Sherman County, Oregon (NRCS, 2000)
- Oregon Natural Heritage Information Center (ORNHIC) Species List (June 2006)
- US Fish and Wildlife Service (USFWS) County Species List (July 2005)
- A map provided by PGE (November 3, 2006), showing the locations of the proposed access roads and collection line (Figure 1).

### Site investigation

The site investigation was performed to complete the following:

- Conduct a preliminary estimate of the area of wetlands and potentially jurisdictional waters within the vicinity of the proposed temporary access roads that may be affected by construction of the roads.
- Document potential habitat for sensitive plant species within the vicinity of the proposed access roads.

Qualified CH2M HILL biologists conducted the site investigations on November 29, 2006.

## Results

### Office Review

#### USGS Topographic Map

The site is located in the Klondike, Quinton, Rufus, and Wasco, Oregon 7.5-minute quadrangle of the USGS topographic maps. Seven potentially jurisdictional waters were identified on the USGS map as occurring within the study area. The potentially jurisdictional waters are labeled A-G on Figure 1.

## Sherman County Soil Survey

A review of the *Soil Survey of Sherman County, Oregon* (1992) reveals four soil types mapped within the study area (Table 1).

TABLE 1

Hydric Soils within the Study Area (Sherman County, OR)

Soil ID	Soil Name	Hydric	Hydric Inclusions
31B	Walla Walla silt loam, 1 to 7 percent	No	No
31C	Walla Walla silt loam, 7 to 15 percent	No	No
32D	Walla Walla silt loam, 15 to 35 percent	No	No

## ORNHIC Data Search

TABLE 2

Federal and State Listed Plant Species Potentially Occurring Within the Study Area

Common Name	Scientific Name	Federal Status <sup>1</sup>	State Status <sup>1</sup>	Notes on Habitat Occurrence
Robinson's onion	<i>Allium robinsonii</i>	SOC	-	No suitable habitat
Northern wormwood	<i>Artemisia campestris</i> var. <i>wormskioldii</i>	C	LE	Small areas of suitable habitat present, no Sherman county records, no 2006 observations; no associated species observed
Laurence's milk-vetch	<i>Astragalus collinus</i> var. <i>laurentii</i>	SOC	LT	No suitable habitat
Henderson's ricegrass	<i>Achnatherum hendersonii</i>	SOC	C	No suitable habitat
Hepatic monkeyflower	<i>Mimulus jungermannioides</i>	-	C	No suitable habitat
Disappearing monkeyflower	<i>Mimulus evanescens</i>	SOC	C	No suitable habitat

### <sup>1</sup> State and Federal Status Definitions

**LE**—Listed Endangered. Taxa listed by the USFWS or National Marine Fisheries Service (NMFS) as Endangered under the Endangered Species Act (ESA), or by the Departments of Agriculture (ODA) and Fish and Wildlife (ODFW) of the state of Oregon under the Oregon Endangered Species Act of 1987 (OESA). Endangered taxa are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.

**LT**—Listed Threatened. Taxa listed by the above agencies as Threatened; defined as those taxa likely to become endangered within the foreseeable future.

**C**—Candidate. Candidate taxa for which NMFS or USFWS have sufficient information to support a proposal to list under the ESA, or which is a candidate for listing by the ODA under the OESA.

**SoC**—Species of Concern. Former Category 2 candidates for which additional information is needed in order to propose as threatened or endangered under the ESA; these species are under review for consideration as Candidates for listing under the ESA.

## PGE Proposed Access Roads and Collector Line Map

The map provided by PGE indicated seven potentially jurisdictional water crossings within the study area, based on a review of the map's elevation contours. The locations of the crossings are indicated on Figure 1 as Areas A through G.

## Site Investigation

The site investigation was conducted on November 29, 2006. Weather during the site investigation was cold (30s F) and overcast, with no precipitation. Approximately 0.5 inch of snow was present on the ground at the time of the site investigation. Representative site photos are presented in Appendix A.

## Waters

Of the seven potentially jurisdictional channels identified on the USGS map (represented as A-G on Figure 1), only one of the channels was verified to be potentially jurisdictional in the field. Crossing G is an intermittent stream located along Helm Canyon stream, a perennial stream and a tributary of the Columbia River. This crossing is located west of Oehman Road and east of Scott Canyon Road (Figure 1). Vegetation within the channel included upland species such as Russian thistle (*Salsola kali*, UPL), yarrow (*Achillea millefolium*, FACU), and quack grass (*Agropyron repens*, FAC-). Indicators of hydrology including evidence of flow, bed and banks, eroded soil and exposed rock were observed at the time of the site investigation. (Appendix A, Photos 1 and 2).

Five of the potential crossings were in valleys that are well vegetated with wheat and Russian thistle. There were no signs of a bed and bank or marks of water erosion in Crossings A-F. Three additional areas, appearing in purple on Figure 1 without a letter designation, were areas previously surveyed as part of the ASC and deemed non-jurisdictional by the DSL.

A small constructed pond was located behind a push-up dam at Area F (Appendix A, Photo 1). It appears to collect surface run-off. However, no channel was discernible either above or below the pond. As a constructed feature, less than one acre, the pond is not regulated at the state level. At the federal level, the pond is not regulated because there is no surface connectivity to a navigable water, nor is there a significant ecological nexus to a navigable water.

The jurisdictional water identified at Crossing G would only be impacted if the poles of the collector line were placed within the channel. Impacts to this potentially jurisdictional water could be avoided by spanning the channel and implementing best management practices (BMPs) to ensure no fill entered the channel (with placement of sediment fencing at the toe of the slope). If impacted, mitigation for both temporary and permanent impacts to this resource would be required by the regulatory agencies. If constructed, the proposed collector line in Area G would cross the channel using an overhead line to avoid impacting the potentially jurisdictional water.

## Wetlands

No wetlands were identified within the study area.

## Rare Plant Habitat Survey

Existing literature and scientific data were reviewed to determine species distribution and potential for occurrence within the study area. The ORNHIC database and USFWS were consulted for documented and potential occurrences of candidate, proposed, and listed species in the study area.

ORNHIC and USFWS database searches revealed six listed plant species that might occur within the study area: Robinson's onion (*Allium robinsonii*), Northern wormwood (*Artemisia campestris* var. *wormskioldii*), , Laurence's milk-vetch (*Astragalus collinus* var. *laurentii*), Henderson's ricegrass (*Achnatherum hendersonii*), hepatic monkeyflower (*Mimulus jungermannioides*) and disappearing monkeyflower (*Mimulus evanescens*).

Suitable habitat for Robinson's onion, Laurence's milk-vetch, Henderson's ricegrass , hepatic monkeyflower, and disappearing monkeyflower were not identified within the study area. Small areas of habitat suitable for Northern wormwood may be present in the vicinity of Crossing G. However, no plant species associated with Northern wormwood were identified during this survey and there are no known records of this species within the study area. Based on the ORNHIC data and the 2006 habitat survey, it is highly unlikely that this species is present in the study area.

## Conclusion

An office review of USGS data, NWI and soils maps, and the PGE facilities map identified seven potentially jurisdictional stream crossings within the study area. A field visit performed on November 29, 2006 confirmed one of the seven crossings as a potentially jurisdictional water of the U.S. and the State of Oregon (see Figure 1 – Crossing G). No jurisdictional wetlands were identified within the study area. No rare plant habitat was identified within the study area, however, it is suggested that a spring survey be conducted during the appropriate bloom time for Northern wormwood and Henderson's ricegrass to verify these findings and comply with state and federal regulations.

Impacts to the potentially jurisdictional water identified at Crossing G during this field survey would be avoided if poles for the collector line were placed outside of the channel. Avoiding impacts will also obviate the need for subsequent wetland delineation reports, modifications to the existing permit authorizations, and the submittal of a mitigation and restoration plan to the resource agencies.



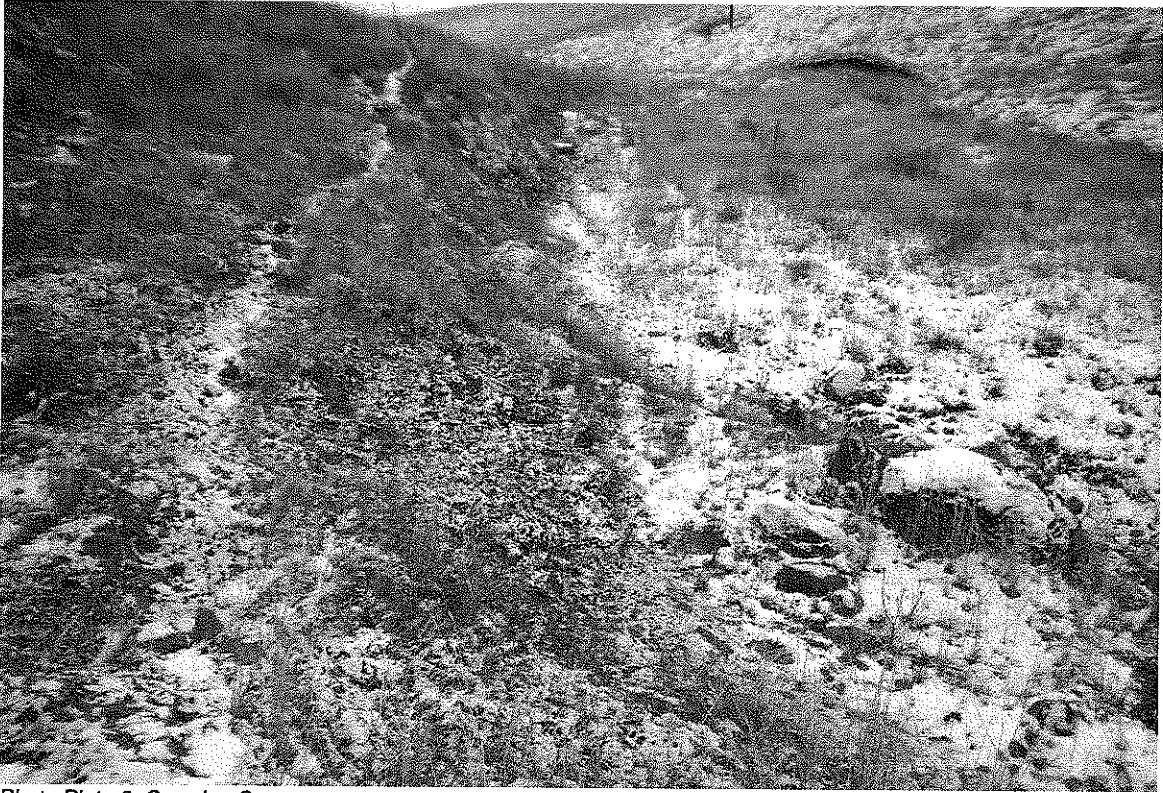








*Photo Plate 1: Crossing G*



*Photo Plate 2: Crossing G*



*Photo Plate 3: Small Constructed Pond at Area F*

**Attachment 10: West, Inc. report, "Additional Sensitive Species Surveys  
Due to Changes in the Facility Layout, November 2006"**



## Additional Sensitive Species Surveys Due to Changes in the Facility Layout November 2006

Sensitive species surveys were conducted along the new diagonal collector line route and O & M facility on 20, 21, 24 June 2006 in suitable habitat. Each area was surveyed twice. Methods followed those used in 2005 for the other project facilities (WEST 2005). The only target sensitive species observed was grasshopper sparrow. Eight grasshopper sparrows were observed in 6 groups in grassy habitats, usually with some scattered sagebrush (Figure 1). Four great-horned owls, 3 red-tailed hawks, 1 American kestrel, and 1 northern harrier were observed.

Non-cultivated habitat in the areas surveyed were generally mixed grass, with some scattered sagebrush. Sagebrush was thicker along the bottom of drainages, and some drainages (Emigrant Canyon) had flowing water and riparian vegetation. Habitat around the proposed O & M facility was planted in wheat, but the area surveyed just to the north of the O&M facility was Conservation Reserve Program grassland.

Other wildlife species observed included western meadowlark, horned lark, red-winged blackbird, Brewer's blackbird, brown-headed cowbird, mourning dove, savannah sparrow, vesper sparrow, lazuli bunting, American goldfinch, western kingbird, barn swallow, killdeer, ring-necked pheasant, California quail, and white tail deer.

Two nighttime spotlight surveys for jackrabbits were also conducted in the suitable habitat in September/early October 2006 (September 26<sup>th</sup> and October 2) following methods described in West (2005). No jackrabbits were observed during those surveys.

Other additional changes to the proposed facility for additional crane paths or modifications to the road access should not result in the need for additional sensitive species surveys (Figure 2). Most of the facility changes (e.g., new crane paths or roads) occurred in wheat fields where no sensitive species surveys were required. In cases where the roads or crane paths were located near or within non-cultivated habitat, previous surveys had already been conducted in nearly all those areas. For example, the new road locations north of the O&M facility in CRP habitat was surveyed in 2005 and 2006. One extremely narrow draw classified as shrub-steppe category 4 habitat is within 750 feet of a crane path. While technically this area has not been surveyed, given the narrowness and small size of the habitat, the large distance between other non-cultivated habitat, there is likely a very low probability of any sensitive species occupying this patch, and even lower probability of species like burrowing owls, the only grassland species that would require any construction restrictions. The new collection line in the northwest corner of Figure 2 that crosses the drainage and category 4 grassland and shrub-steppe habitat was surveyed for sensitive species in 2005 and none were documented.

## **References**

West, 2005. Wildlife And Habitat Baseline Study For The Proposed Biglow Canyon Wind Power Project, Sherman County, Oregon March 2004 – August 2005. Technical Report Dated October 2005 Submitted To Orion Energy.

Figure 1. Results of Sensitive Species Surveys along new diagonal collector line route and near the O&M facility for the Biglow Wind Farm Project.

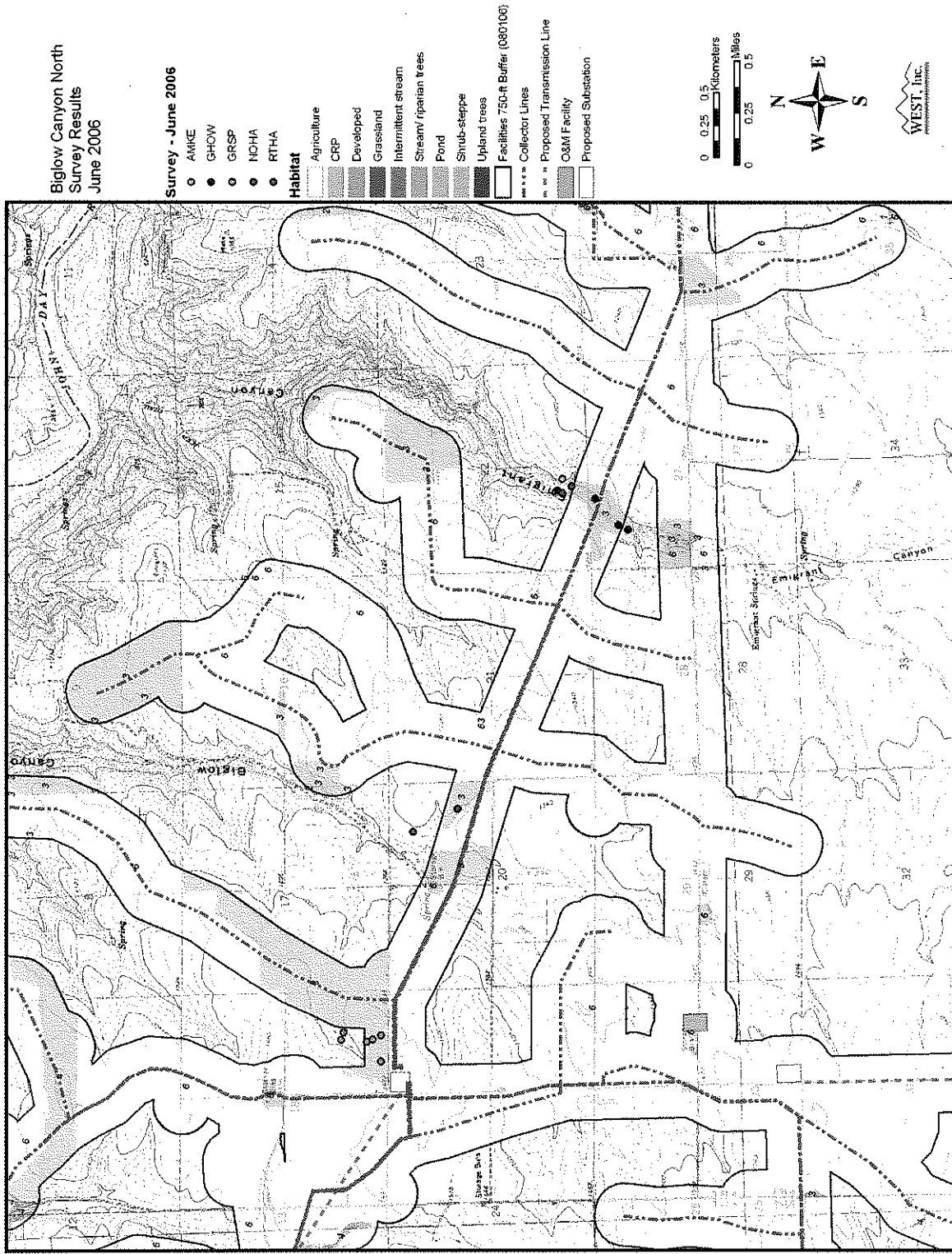
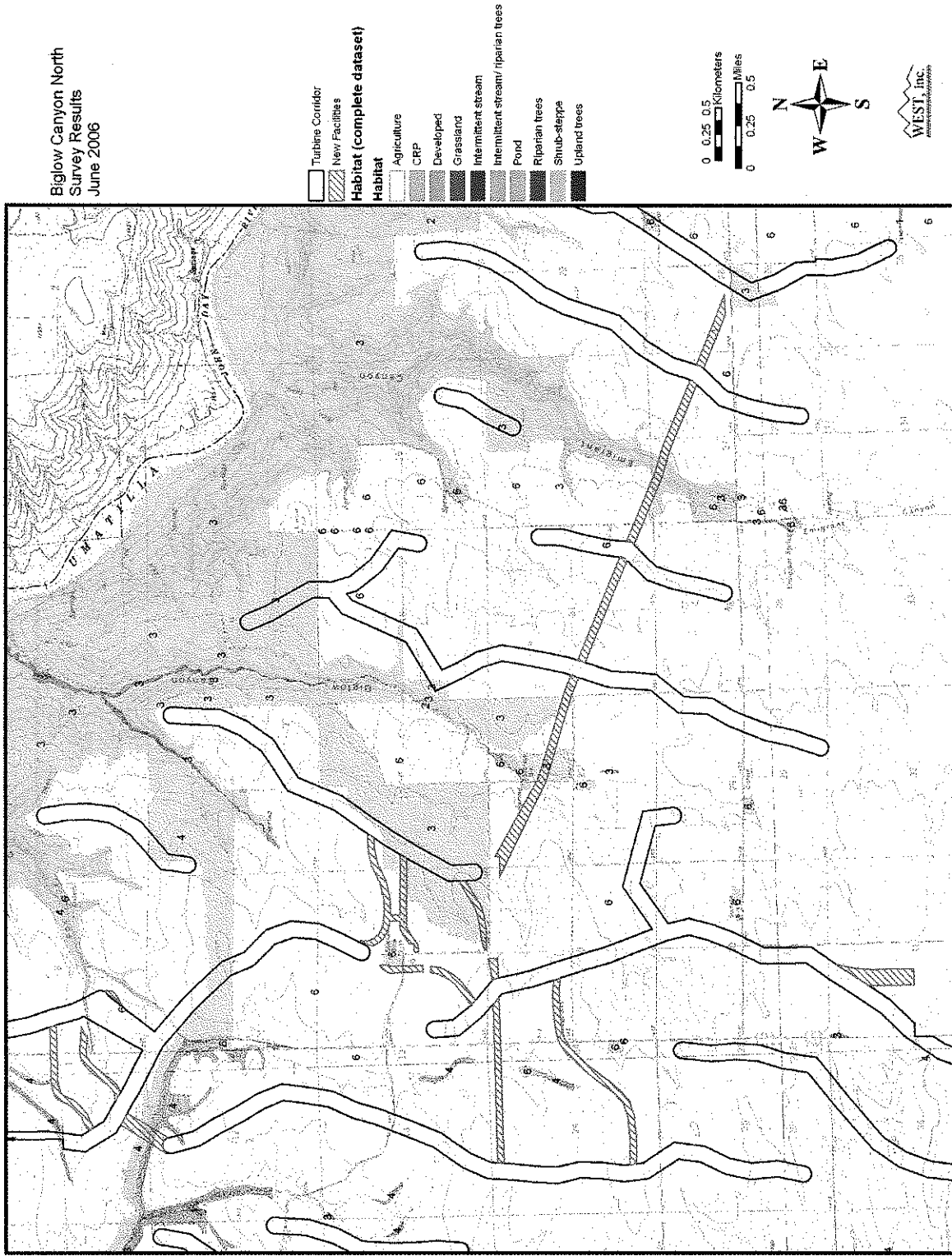


Figure 2. New project facility areas for the Biglow Wind Farm Project.





**Attachment 11: Revised calculations of temporary and permanent habitat impacts**



<b>Temporary Habitat Impacts</b>			
	Total Revised Temporary Habitat Impacts (Amendment)	Total from Biglow ASC Supplement Temporary Habitat Impacts	Increase/Decrease for Amendment Temporary Habitat Impacts
<b>Temporary Disturbance due to Proposed Facility Layout</b>	<b>405.91 acres</b>	<b>387.78 acres</b>	<b>18.13 acres</b>
<b>Category 1</b>	<b>0 acres</b>	<b>0.00 acres</b>	<b>0.00 acres</b>
Upland Trees	0 acres	0.00 acres	0.00 acres
<b>Category 2</b>	<b>0.00 acres</b>	<b>0.00 acres</b>	<b>0.00 acres</b>
Intermittent Stream/Riparian Trees	0.00 acres	0.00 acres	0.00 acres
Riparian Trees	0.00 acres	0.00 acres	0.00 acres
Shrub-steppe	0.00 acres	0.00 acres	0.00 acres
<b>Category 3</b>	<b>14.97 acres</b>	<b>14.92 acres</b>	<b>0.05 acres</b>
CRP	14.28 acres	13.47 acres	0.81 acres
Shrub-steppe	0.69 acres	1.45 acres	-0.76 acres
Intermittent Streams	0.00 acres	0.00 acres	0.00 acres
Upland Trees	0.00 acres	0.00 acres	0.00 acres
Pond	0.00 acres	0.00 acres	0.00 acres
<b>Category 4</b>	<b>4.22 acres</b>	<b>4.13 acres</b>	<b>0.09 acres</b>
CRP	3.19 acres	3.07 acres	0.12 acres
Shrub-steppe	0.34 acres	0.06 acres	0.28 acres
Grassland	0.69 acres	1.00 acres	-0.31 acres
<b>Category 5</b>	<b>0.00 acres</b>	<b>0.00 acres</b>	<b>0.00 acres</b>
<b>Category 6</b>	<b>386.72 acres</b>	<b>368.73 acres</b>	<b>17.99 acres</b>
Developed	3.88 acres	5.23 acres	-1.35 acres
High-Value Agricultural	281.56 acres		
Non-Value Agricultural	101.28 acres		
Total Agricultural	382.84 acres	363.50 acres	19.34 acres

<b>Permanent Habitat Impacts</b>			
	Total Revised Permanent Habitat Impacts (Amendment)	Total from Biglow ASC Supplement Permanent Habitat Impacts	Increase/Decrease for Amendment Permanent Habitat Impacts
<b>Permanent Disturbance due to Proposed Facility Layout</b>	<b>180.83 acres</b>	<b>172.89 acres</b>	<b>7.94 acres</b>
<b>Category 1</b>	<b>0.00 acres</b>	<b>0.00 acres</b>	<b>0.00 acres</b>
Upland Trees	0.00 acres	0.00 acres	0.00 acres
<b>Category 2</b>	<b>0.00 acres</b>	<b>0.00 acres</b>	<b>0.00 acres</b>
Intermittent Stream/Riparian Trees	0.00 acres	0.00 acres	0.00 acres
Riparian Trees	0.00 acres	0.00 acres	0.00 acres
Shrub-steppe	0.00 acres	0.00 acres	0.00 acres
<b>Category 3</b>	<b>8.41 acres</b>	<b>7.59 acres</b>	<b>0.82 acres</b>
CRP	8.24 acres	7.42 acres	0.82 acres
Shrub-steppe	0.17 acres	0.17 acres	0.00 acres
Intermittent Streams	0.00 acres	0.00 acres	0.00 acres
Upland Trees	0.00 acres	0.00 acres	0.00 acres
Pond	0.00 acres	0.00 acres	0.00 acres
<b>Category 4</b>	<b>3.51 acres</b>	<b>3.66 acres</b>	<b>-0.15 acres</b>
CRP	2.82 acres	2.70 acres	0.12 acres
Shrub-steppe	0.10 acres	0.08 acres	0.02 acres
Grassland	0.60 acres	0.88 acres	-0.28 acres
<b>Category 5</b>	<b>0.00 acres</b>	<b>0.00 acres</b>	<b>0.00 acres</b>
<b>Category 6</b>	<b>168.91 acres</b>	<b>161.64 acres</b>	<b>7.27 acres</b>
Developed	2.09 acres	4.89 acres	-2.80 acres
High-Value Agricultural	120.49 acres		
Non-Value Agricultural	46.33 acres		
Total Agricultural	166.82 acres	156.75 acres	10.07 acres



## **Attachment 12: Revised estimates of retirement costs**



**Biglow Canyon Cost Estimate for Site Restoration - Amendment 2 (2005 \$)**

Case: All 1.5-MW GE WTGs  
Last Updated: December 19, 2006

Cost Estimate Component	Unit	Quantity	Unit Cost	Extension
<b>GE 1.5-MW Turbines</b>				
Disconnect electrical and ready for disassembly	WTG	225	\$ 951	\$ 213,975
Remove turbine blades, hubs and nacelles	WTG	225	\$ 5,045	\$ 1,135,125
Remove turbine towers	net ton steel	49500	\$ 65	\$ 3,217,500
Remove and load pad transformers	WTG	225	\$ 2,180	\$ 490,500
Foundation removal	cu yd concrete	40001	\$ 31	\$ 1,240,016
Foundation area restoration and reseeding	WTG	225	\$ 1,183	\$ 266,175
<b>GE 3.0-MW Turbines</b>				
Disconnect electrical and ready for disassembly	WTG	0	\$ 951	\$ -
Remove turbine blades, hubs and nacelles	WTG	0	\$ 5,045	\$ -
Remove turbine towers	net ton steel	0	\$ 65	\$ -
Remove and load pad transformers	WTG	0	\$ 2,180	\$ -
Foundation removal	cu yd concrete	0	\$ 31	\$ -
Foundation area restoration and reseeding	WTG	0	\$ 1,183	\$ -
<b>Facility Components for Turbines</b>				
Meteorological Towers - Dismantle, load and haul	Met Tower	10	\$ 8,330	\$ 83,300
Substation - Dismantle, load and haul	Substation	1	\$ 214,719	\$ 214,719
O&M Facility - Dismantle, load and haul	O&M Facility	1	\$ 103,355	\$ 103,355
34.5-kV Aboveground Collector System - Dismantle, load and haul	mile	15	\$ 3,650	\$ 54,750
Junction Boxes - Remove to 3' below grade	Junction Box	25	\$ 1,281	\$ 32,025
Access Roads (16' wide) - Removal, grading and seeding	mile	41.54	\$ 47,334	\$ 1,966,254
Access Road Intersections & Turnarounds - Removal, grading and seeding	acre	8.88	\$ 18,498	\$ 164,262
Temporary Areas - Reseed disturbed areas during restoration work	acre	171.8	\$ 2,689	\$ 462,008
General Costs - Permits, mobilization, engineering, overhead, utility disconnects, etc.	bulk	1	\$ 430,131	\$ 430,131
<b>GROSS COST</b>				<b>\$ 10,074,096</b>
Carbon Steel Scrap Value	net ton steel	49500	\$ (149)	\$ (7,375,500)
<b>SUBTOTAL</b>				<b>\$ 2,698,596</b>
Performance Bond			1%	\$ 26,986
Administration and Project Management			10%	\$ 269,860
Future Developments Contingency			20%	\$ 539,719
<b>TOTAL (FULL COST)</b>				<b>\$ 3,535,161</b>
<b>TOTAL FINANCIAL ASSURANCE AMOUNT (ROUNDED TO NEAREST \$1,000)</b>				<b>\$ 3,535,000</b>





**Biglow Canyon Cost Estimate for Site Restoration - Amendment 2 (2005 \$)**

Case: All 3.0-MW GE WTGs  
Last Updated: December 19, 2006

Cost Estimate Component	Unit	Quantity	Unit Cost	Extension
<b>GE 1.5-MW Turbines</b>				
Disconnect electrical and ready for disassembly	WTG	0	\$ 951	\$ -
Remove turbine blades, hubs and nacelles	WTG	0	\$ 5,045	\$ -
Remove turbine towers	net ton steel	0	\$ 65	\$ -
Remove and load pad transformers	WTG	0	\$ 2,180	\$ -
Foundation removal	cu yd concrete	0	\$ 31	\$ -
Foundation area restoration and reseeding	WTG	0	\$ 1,183	\$ -
<b>GE 3.0-MW Turbines</b>				
Disconnect electrical and ready for disassembly	WTG	150	\$ 951	\$ 142,650
Remove turbine blades, hubs and nacelles	WTG	150	\$ 5,045	\$ 756,750
Remove turbine towers	net ton steel	57150	\$ 65	\$ 3,714,750
Remove and load pad transformers	WTG	150	\$ 2,180	\$ 327,000
Foundation removal	cu yd concrete	26667	\$ 31	\$ 826,677
Foundation area restoration and reseeding	WTG	150	\$ 1,183	\$ 177,450
<b>Facility Components for Turbines</b>				
Meteorological Towers - Dismantle, load and haul	Met Tower	10	\$ 8,330	\$ 83,300
Substation - Dismantle, load and haul	Substation	1	\$ 214,719	\$ 214,719
O&M Facility - Dismantle, load and haul	O&M Facility	1	\$ 103,355	\$ 103,355
34.5-kV Aboveground Collector System - Dismantle, load and haul	mile	15	\$ 3,650	\$ 54,750
Junction Boxes - Remove to 3' below grade	Junction Box	25	\$ 1,281	\$ 32,025
Access Roads (16' wide) - Removal, grading and seeding	mile	41.54	\$ 47,334	\$ 1,966,254
Access Road Intersections & Turnarounds - Removal, grading and seeding	acre	8.88	\$ 18,498	\$ 164,262
Temporary Areas - Reseed disturbed areas during restoration work	acre	153.7	\$ 2,689	\$ 413,395
General Costs - Permits, mobilization, engineering, overhead, utility disconnects, etc.	bulk	1	\$ 430,131	\$ 430,131
<b>GROSS COST</b>				<b>\$ 9,407,469</b>
Carbon Steel Scrap Value	net ton steel	57150	\$ (149)	\$ (8,515,350)
<b>SUBTOTAL</b>				<b>\$ 892,119</b>
Performance Bond			1%	\$ 8,921
Administration and Project Management			10%	\$ 89,212
Future Developments Contingency			20%	\$ 178,424
<b>TOTAL (FULL COST)</b>				<b>\$ 1,168,677</b>
<b>TOTAL FINANCIAL ASSURANCE AMOUNT (ROUNDED TO NEAREST \$1,000)</b>				<b>\$ 1,169,000</b>



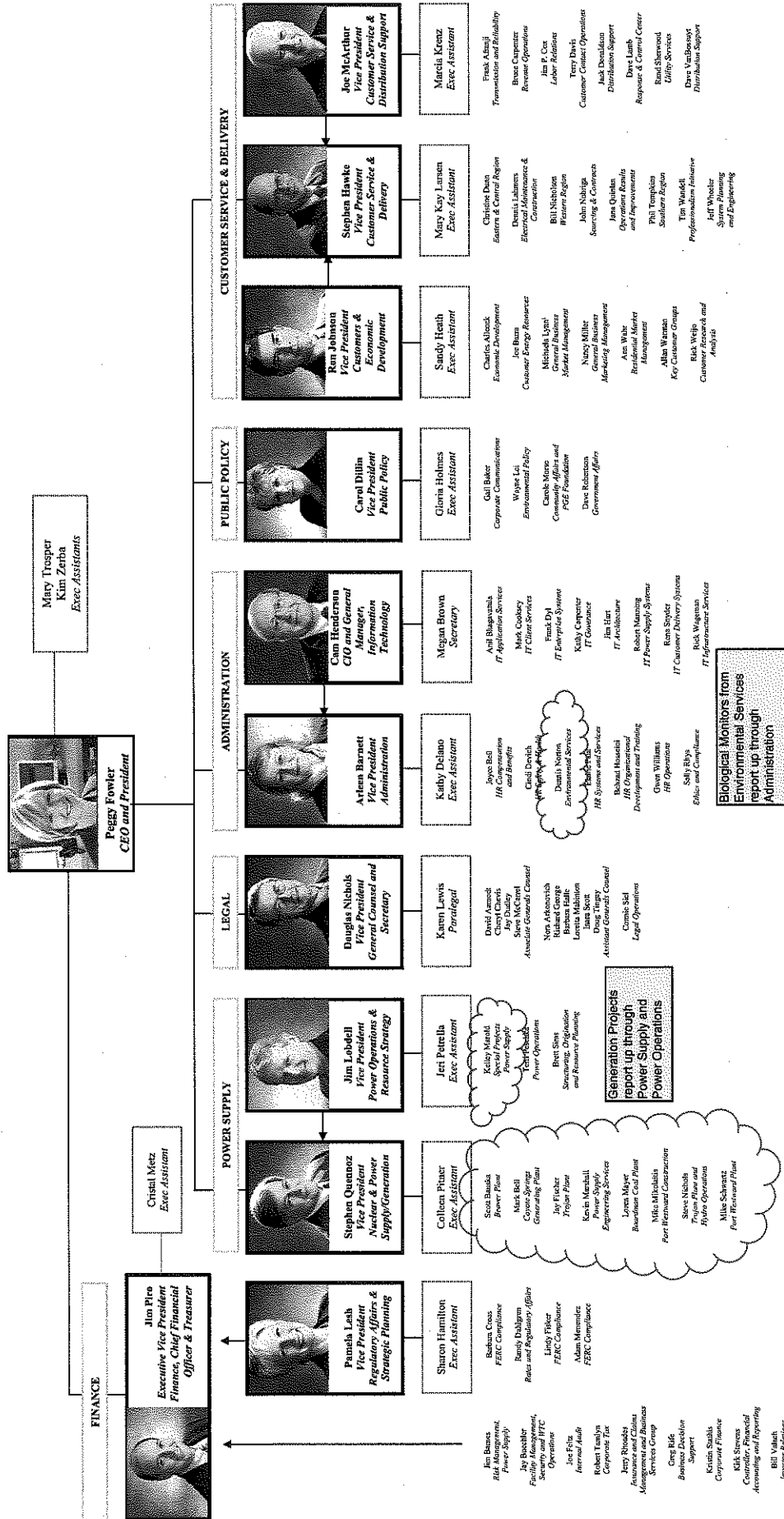
**Attachment 13: PGE Corporate Structure (chart)**



# Portland General Electric Company Organization Chart as of July 20, 2006

The chart shows direct reports listed in alphabetical order with functional responsibilities (not necessarily the name of the RC).

Changes? Contact Lori Cronwell, 503-464-7380, HR Communications, 1WTC0606.





**Attachment 14: Updated property owner list**





Property Ownership Within 500 Feet of Facility Site		
Landowner Names	Addresses	
Beers, Patrick and Lori	P.O. Box 202	Rufus, OR 97050
Bureau of Land Management	3015 NE 3rd Street	Prineville, OR 97754
Campbell, Vera Jean Trust - c/o U.S. Bank, Farm, Ranch & Timber Asset Management	P.O. Box 3588, PD-WA-T7TR	Spokane, WA 99220
Coats, Chester C. - c/o J Thomas Coats	113 "B" E 2nd St	The Dalles, OR 97058
Coats, Donald	P.O. Box 45	Wasco, OR 97065
Coats, J. Thomas Trustee & Coats, Reatha	3325 Columbia View Drive #7	The Dalles, OR 97058
Ellis, Jean	4012 NE 157th Court	Vancouver, WA 98682
Falk, Karen et al	6056 Eight Mile Road	The Dalles, OR 97058
Fields, John and Nancy	75960 Hwy 97	Wasco, OR 97065
Fox, George L. Jr. and Marlene O.	1313 N. Williams	Kennewick, WA 99336
Fridley, Barbara Ann	435 #4 Road	Goldendale, WA 98620
Fridley, Kenneth Norman & Marilyn M.	P.O. Box 46	Wasco, OR 97065
Gatter, Donna & Kaufman, Darlene	5213 NE 114th St.	Vancouver, WA 98686
Gray, Brett L. and Trena	97642 Emigrant Spring	Wasco, OR 97065
Gray, Charles L. and Barbara J.	P.O. Box 387	Wasco, OR 97065
Green Acres c/o Macnab, Patrick G. Et al	P.O. Box 271	Wasco, OR 97065
Gunderson, Beverly - c/o Eddie Gunderson Jr.	810 Hep-Spray Highway	Heppner, OR 97036
Harrison, Trent D. & Jill C.	PO Box 214	Wasco, OR 97065
Hilderbrand, John & Wanda	96247 Hilderbrand Lane	Wasco, OR 97065
Holzappel, Georgia Belle	74402 Desert Rd.	Hermiston, OR 97838
Hulse, Rosanna Trustee	P.O. Box 427	Dufur, OR 97021
Johnson, Delta M.	3325 Columbia View Drive #8	The Dalles, OR 97058
Jones, Downen & Jill et al	PO Box 204	Rufus, OR 97050
Jones, Richard E. & Irmgard L.	1600 N. Rhododendron Dr. #236	Florence, OR 97439
Jones, Robert C. Jr. - c/o Mary Alice Jones, Trustee	1928 South Century Lane	Spokane, WA 99037
Klindworth, James T.	PO Box 993	Connell, WA 99326
Klindworth, Robert B.	1605 E Capital	Ellensburg, WA 98926
Liberty Medrick Trust - c/o Leslie Suskle, Trustee	7510 Ridge Drive	Gladstone, OR 97027
Lobbato, Joseph, Patricia, and John, Co-Trustees	9870 SW Kent Court	Tigard, OR 97224
Mac Five Farm LLC	3440 NW Vaughn Street	Portland, OR 97210
Macnab, Gary & Mary and McCullough, J. Kevin & Kathryn	PO Box 294	Wasco, OR 97065
Macnab, Gary and Mary	P.O. Box 251	Wasco, OR 97065
Macnab, George L. & Junietta E. Co-Trustees	745 E. 18th	The Dalles, OR 97058
Macnab, John and Elaine	18450 Oakdale Road	Dalles, OR 97338
Macnab, Mrs. Charles	405 E. Scenic Drive	The Dalles, OR 97058
Macnab, Patrick G.	PO Box 271	Wasco, OR 97065
Macnab, Peter J.	608 Yates Street	Wasco, OR 97065
Magaw, David and James - c/o Rachel Baars	2461 Wildwood Road	Curtis, OR 97844
Martin, Thomson and Constance	P.O. Box 128	Rufus, OR 97050
Martin, William and Douglas	P.O. Box 201	Rufus, OR 97050
McCoy Land c/o Tom McCoy	93340 Hwy 206	Wasco, OR 97065
McCullough, James, Kevin and Kathryn	P.O. Box 194	Wasco, OR 97065
McKee, Gordon	130 16500 SE 1st	Vancouver, WA 98684
McLenon, Betty Mae	258 Cypress Pl.	Lorida, FL 33857-9755
McMillin, Eugene D.	622 Cedar Street	Leavenworth, WA 98826
McMillin, Stephen S.	11046 SW Riggs Road	Powell Butte, OR 97753
Medler, James E. - c/o Kelly Medler	1064 SW Gaines	Portland, OR 97239
Medler, James E. & Medler, Dean W.	2067 Hwy 52	Payette, ID 83661
Medler, James E. and Dean W. - c/o Louis Tatum Rev. Trust, Louann E. Jones	P.O. Box 426	Irrigon, OR 97844
Moffett, Lois C. Trustee	17502 102nd Ave NE, Apt 109	Bothell, WA 98011-6706
Rathburn, Lee and Betty	P.O. Box 193	Wasco, OR 97065
Reid Ranch LLC	200 W. 9th Street	The Dalles, OR 97058
Reznicek, Elmer R. & Eleanor L. Trustees	3740 SW 35th Street	Redmond, OR 97756
Richelderfer, Shirley Ann	PO Box 185	Wasco, OR 97065
Riverview Community Bank, c/o Dale M., Waid, and Paula K Conner	P.O. Box 15	Rufus, OR 97050
Scharf, Robert and Alda Trustees - Scharf Shadeland Farms	7695 Tucker Rd.	Amity, OR 97101
Sherman County School District	PO Box 66	Wasco, OR 97065
Simpson, Grant and Nancy	P.O. Box 370	Moro, OR 97039
Skiles, Patricia Ann & Kaseberg, Larry Edward - c/o Patricia Skiles	504 Veterans Drive	The Dalles, OR 97058
Smith, Delmer A. & Margaret	7611 Evergreen Road	Richland Hills, TX 76118
Stevens Family Farms - c/o Herbert A. Stevens	P.O. Box 257	Husum, WA 98623
Thomas, Dewey Trustee	P.O. Box 153	Wasco, OR 97065
Thomas, Reine	6351 NE Brighton St, Orenco Station	Hillsboro, OR 97124
Thomas, Ronald K. and Melva D.	P.O. Box 7	Wasco, OR 97065
Wasco Methodist Church & McKee, Gordon E. & Patricia L. LE	16500 SE 1st Street	Vancouver, WA 98684
Weir, James Memorial Trust - c/o Trena Gray	P.O. Box 325	Wasco, OR 97065
Wright, Dora O. - c/o Donald Coats	P.O. Box 718	Rufus, OR 97050
Zaniker, Frank K.	901 Richmond Street	The Dalles, OR 97058



**Attachment 15: "Cultural Resource Survey for the  
Biglow Canyon Wind Project,  
Sherman County, Oregon, Supplement 1,"  
Archaeological Investigations Northwest, Inc. (AINW),  
December 1, 2006**

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**CULTURAL RESOURCE SURVEY  
FOR THE BIGLOW CANYON WIND PROJECT,  
SHERMAN COUNTY, OREGON:  
SUPPLEMENT I**

Prepared for  
Portland General Electric  
Portland, Oregon

December 1, 2006

REPORT NO. 1817

**Archaeological Investigations Northwest, Inc.**

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**CULTURAL RESOURCE SURVEY  
FOR THE BIGLOW CANYON WIND PROJECT,  
SHERMAN COUNTY, OREGON:  
SUPPLEMENT I**

By  
Mini Sharma, M.S., R.P.A.,  
David V. Ellis, M.P.A.,  
Todd Ogle, M.A., R.P.A.,  
and  
Michele Punke, Ph.D., R.P.A.

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