

ATTACHMENT A
PROPOSED AMENDED GOLDEN HILLS WIND PROJECT SITE CERTIFICATE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42

~~SECOND-THIRD~~ AMENDED SITE CERTIFICATE

FOR THE
GOLDEN HILLS WIND PROJECT

Issued by

OREGON ENERGY FACILITY SITING COUNCIL
625 Marion Street NE
Salem, OR 97301-3737

PHONE: 503-378-4040
FAX: 503-373-7806

Amending the
Site Certificate for the Golden Hills Wind Project
~~Of May 18, 2012~~ of February 11, 2015

DATE

TABLE OF CONTENTS

1		
2	I.	INTRODUCTION 1
3	II.	SITE CERTIFICATION 1
4	III.	DESCRIPTION 2
5	A.	THE FACILITY 2
6	1.	The Energy Facility 2
7	2.	Related or Supporting Facilities 3
8	B.	LOCATION OF THE FACILITY 5
9	C.	THE SITE AND SITE BOUNDARY 6
10	D.	CONSTRUCTION DEADLINES 6
11	IV.	SPECIFIC FACILITY CONDITIONS 7
12	A.	[PLACEHOLDER]..... 7
13	B.	ORGANIZATIONAL EXPERTISE 7
14	C.	RETIREMENT AND FINANCIAL ASSURANCE 8
15	D.	LAND USE 12
16	E.	SOIL PROTECTION 15
17	F.	PROTECTED AREAS..... 16
18	G.	SCENIC RESOURCES..... 16
19	H.	RECREATION..... 17
20	I.	PUBLIC HEALTH AND SAFETY STANDARDS FOR WIND ENERGY FACILITIES..... 17
21	J.	CUMULATIVE EFFECTS STANDARDS FOR WIND ENERGY FACILITIES..... 18
22	K.	SITING STANDARDS FOR TRANSMISSION LINES 18
23	L.	THREATENED AND ENDANGERED SPECIES..... 18
24	M.	FISH AND WILDLIFE HABITAT 19
25	V.	STANDARDS NOT APPLICABLE TO SITE CERTIFICATE ELIGIBILITY 22
26	A.	STRUCTURAL STANDARD 22
27	B.	HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES STANDARD 23
28	C.	PUBLIC SERVICES STANDARD..... 25
29	D.	WASTE MINIMIZATION STANDARD 28
30	VI.	OTHER APPLICABLE REGULATORY REQUIREMENTS 29
31	A.	REQUIREMENTS UNDER COUNCIL JURISDICTION 29
32	1.	NOISE CONTROL REGULATIONS..... 29
33	2.	REMOVAL FILL LAW 31
34	3.	WATER RIGHTS..... 31
35	4.	PUBLIC HEALTH AND SAFETY 31
36	VII.	CONDITIONS REQUIRED BY COUNCIL RULES 32
37	VIII.	SUCCESSORS AND ASSIGNS 40
38	IX.	SEVERABILITY AND CONSTRUCTION 40
39	X.	GOVERNING LAW AND FORUM 40
40	XI.	EXECUTION..... 40
41		
42	ATTACHMENT A – SITE BOUNDARY MAP	

~~SECOND-THIRD~~ AMENDED SITE CERTIFICATE
FOR THE
GOLDEN HILLS WIND PROJECT

I. INTRODUCTION

This site certificate for the Golden Hills Wind Project (“Golden Hills”) is issued and executed in the manner provided by ORS Chapter 469, by and between the State of Oregon (the “State”), acting by and through its Energy Facility Siting Council (the “Council”), and Golden Hills Wind Farm LLC (“GHWF” or the “certificate holder”).

The findings of fact, reasoning, and conclusions of law underlying the terms and conditions of this site certificate are set forth in the Council’s Final Order in the Matter of the Application for a Site Certificate for the Golden Hills Wind Project (the “Final Order on the Application” or “Final Order”) issued on May 15, 2009, the Council’s Final Order in the Matter of the Request for Amendment #1 of the Site Certificate for the Golden Hills Wind Project (“Final Order on Amendment #1”) issued May 11, 2012, the Council’s Final Order in the Matter of the Request for Amendment #2 of the Site Certificate for the Golden Hills Wind Project (“Final Order on Amendment #2”), issued January 30, 2015, and the Council’s Final Order in the Matter of the Request for Amendment #3 of the Site Certificate for the Golden Hills Wind Project (“Final Order on Amendment #3”), issued September 6, 2016, and incorporated herein by this reference. In interpreting ~~this~~the amended site certificate, any ambiguity shall be clarified by reference to the following, in order of priority: (1) this amended site certificate; (2) the Final Order on Amendment #~~32~~; (3) the Final Order on Amendment #~~21~~; (4) the Final Order on Amendment #1; ~~(54)~~ the Final Order on the Application; and ~~(65)~~ the record of the proceedings that led to all the Final Orders.

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

II. SITE CERTIFICATION

1. To the extent authorized by State law and subject to the conditions set forth herein, the State approves and authorizes the certificate holder to construct, operate and retire a wind energy facility, together with certain related or supporting facilities, at the site in Sherman County, Oregon, as described in Section III of this site certificate. ORS 469.401(1).
2. This site certificate is effective until it is terminated under OAR 345-027-0110 or the rules in effect on the date that termination is sought, or until the site certificate is revoked under ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered. ORS 469.401(1).
3. This site certificate does not address, and is not binding with respect to, matters that were not addressed in the Council’s Final Order on the Application for the facility or any of the subsequent Final Orders on Amendment Requests. Such matters include, but are not

1 limited to: (1) building code compliance; wage, hour and other labor regulations; local
2 government fees and charges; and other design or operational issues that do not relate to
3 siting the facility (ORS 469.401(4)); and (2) permits issued under statutes and rules for which
4 the decision on compliance has been delegated by the federal government to a State
5 agency other than the Council. ORS 469.503(3).

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

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

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

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

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

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

32 **III. DESCRIPTION**

33 **A. THE FACILITY**

34 **1. The Energy Facility**

35 ORS 469.300(11)(a)(J) defines the “energy facility” in this case as ~~high-voltage~~ high-voltage electric power
36 generating plant with an average electric generating capacity of 35 megawatts or more if the

1 power is produced from ... wind energy at a single energy facility.” The proposed “electric
2 power generating plant” would consist of up to ~~125-267~~ wind turbine locations, each consisting
3 of a turbine tower and foundation, turbine pad area, nacelle, rotor and blade assembly, and
4 step-up transformer. Wind turbines would be placed in micrositing survey corridors as shown in
5 the Application for a Site Certificate. A map of the site boundary, including micrositing
6 corridors, is included as Attachment A to this site certificate. Golden Hills would have a peak
7 electric generating capacity of up to 400 MW and an average electric generating capacity of
8 about 133-MW.

9 GHWF has not yet selected the wind turbine model or models that would be installed in the
10 facility. GHWF ~~is request~~eding a site certificate that would allow the installation of up to
11 ~~125-267 GE sle 1.5-MW turbines or any combination of turbines subject to specific restrictions.~~
12 Under maximum conditions, with turbine towers ~~measuring would measure~~ up to ~~95-80~~ meters
13 (~~312-263~~ feet) at the rotor hub, ~~and~~ the diameter of the rotor-swept area measuring up to
14 would be 126-96 meters (413-315 feet), and the total maximum turbine height measuring up to
15 158 meters (518 feet).

16 A wind turbine features a nacelle mounted on a tubular steel tower. The nacelle houses the
17 generator and gearbox and supports the rotor and blades at the hub. The turbine tower
18 supports and provides access to the nacelle. Each turbine unit sits on a concrete pad that
19 accommodates the turbine pedestal, a step-up transformer and a turnout area for service
20 vehicles. The purpose of the step-up transformer is to increase the output voltage of the wind
21 turbine to the voltage of the power collection system. Underlying the pad would be a deep
22 concrete turbine foundation with a surface area dependent upon the type and size of wind
23 turbine selected.

24 2. Related or Supporting Facilities

25 GHWF proposes to construct the following related or supporting facilities:

- 26 • Power collection system
- 27 • Substation~~s~~
- 28 • 230 kV transmission line
- 29 • ~~500-kV transmission line~~
- 30 • Meteorological towers
- 31 • Supervisory Control and Data Acquisition (“SCADA”) System
- 32 • O&M facility
- 33 • Access roads
- 34 • Temporary laydown areas

35 **Power Collection System.** About ~~62-55~~ miles of power collection system, operating at 34.5 kV,
36 would transport the power from the wind turbines to the substation~~s~~. Some portion of the
37 power collection system may be installed above ground to avoid impacts or to accommodate
38 unforeseen geotechnical conditions.

1 **Substations.** The ~~proposed~~ facility would include ~~two one~~ substations, located near the center
2 one in the eastern section of the Golden Hills site ~~and another in the western section of the~~
3 Golden Hills site. Each ~~The~~ substation would occupy a grveled and fenced area about ~~2.5~~ acres
4 in size to facilitate ~~a~~ transformers, switching equipment and a parking area.

5 **230-kV Transmission Line.** An approximately 5-mile, 230 -kV transmission line would
6 interconnect ~~The substation in the eastern section of the Golden Hills site would interconnect~~
7 with an to the existing Hay Canyon 230 -kV PPM Energy transmission line ~~by means of an~~
8 aboveground 0.7 mile 230 -kV transmission line. From there, electricity would be transmitted
9 using the existing Hay Canyon 230 -kV line to the northern-most transmission pole structure
10 near the existing Klondike Substation where up to approximately 700 feet of new 230--kV
11 transmission line would be constructed along with associated structures and equipment
12 necessary to interconnect the facility to Bonneville Power Administration's (BPA's) transmission
13 structure located approximately 300 feet north of the Klondike Substation.

14 **500-kV Transmission Line.** ~~The substation in the western section of the Golden Hills site would~~
15 ~~interconnect with the existing BPA John Day Substation by means of an aboveground 500-kV~~
16 ~~transmission line about 11 miles long.~~

17 **Meteorological Towers.** GHWF proposes to install up to six permanent meteorological towers
18 ("met towers"). The met towers would be unguyed tubular structures about ~~85-95~~ meters (~~279~~
19 ~~312~~ -feet) tall and set in concrete foundations.

20 **SCADA System.** A fiber optic communications network would link the wind turbines to a central
21 computer at the O&M facility. The SCADA system would collect operating and performance
22 data from each wind turbine and Golden Hills as a whole and provide for remote operation of
23 the wind turbines.

24 **O&M Facility.** A 5,000-square-foot operations and maintenance ("O&M") building would be
25 constructed at one or the other of two locations proposed by GHWF. The O&M building would
26 house office and workshop areas, a control room for the SCADA system, and a kitchen,
27 bathroom and shower. The ~~5~~ five-acre O&M facility site would include parking for vehicles.
28 Domestic water use would not exceed 5,000 gallons per day, and domestic water would be
29 obtained from an on-site well. Domestic wastewater would be drained into an on-site septic
30 system.

31 **Access Roads.** Approximately ~~50-41~~ miles of new roads would be constructed to provide access
32 to the turbine strings and other facility components. Access roads would connect to grveled
33 turbine pad areas at the base of each wind turbine. The roads would be 20 feet wide and
34 constructed with crushed gravel. In addition, GHWF would improve and widen some existing
35 county and farm roads.

36 **Temporary Laydown Areas.** Up to seven principal, temporary laydown areas would be used to
37 stage construction and store supplies and equipment during construction. In addition,
38 temporary laydown areas would be required at the base of each ~~proposed~~ wind turbine. The

1 laydown areas would be covered with gravel, and the gravel would be removed and the areas
2 would be restored to their pre-construction conditions following completion of construction.

3 The certificate holder shall satisfy the following administrative condition:

4 (III.A.1) The certificate holder shall construct a facility substantially as described in the
5 site certificate and may select up to 125 GE 1.5 megawatt or some
6 combination of other turbines, subject to the following restrictions and
7 compliance with other site certificate conditions. Before beginning construction,
8 the certificate holder shall provide to the Department a description of the
9 turbine types selected for the facility demonstrating compliance with this
10 condition.

11 (a) The total number of turbines at the facility must not exceed 267-125
12 turbines.

13 (b) The combined peak generating capacity of the facility must not exceed
14 400 megawatts.

15 (c) The turbine hub height must not exceed 95-80 meters and the maximum
16 blade tip height must not exceed 128-158 meters.

17 (d) The minimum blade tip clearance must be 19.832 meters above ground.

18 (e) The maximum combined weight of metals in the tower (including ladders
19 and platforms) and nacelle must not exceed 324-336 U.S. tons per
20 turbine.

21 (f) The certificate holder shall request an amendment of the site certificate
22 to increase the combined peak generating capacity of the facility beyond
23 400 megawatts, to increase the number of wind turbines to more than
24 267 turbines, to install wind turbines with a hub height greater than 80
25 meters or a blade tip height greater than 128 meters, or to install
26 turbines with a maximum combined weight of metals in the tower
27 (including ladders and platforms) and nacelle greater than 324 U.S. tons
28 per turbine.

29 B. LOCATION OF THE FACILITY

30 The facility will occupy about 2930,000-29,500 acres and be located near Wasco in Sherman
31 County, Oregon. More particularly, the site would occupy portions of Sections 1-17, Township 1
32 South, Range 17 East, Sections 6-7, Township 1 South, Range 18 East, Sections 29-31, Township
33 1 North, Range 18 East, Sections 5-9, 14-23, and 25-36, Township 1 North, Range 17 East,
34 Sections 1-3, 12-14, 23-26, and 35-36, Township 1 North, Range 16 East, Sections 29-32,
35 Township 2 North, Range 17 East, Sections 25-27 and 34-36, Township 2 North, Range 16 East.
36 Attachment A of this site certificate contains a map of the site boundary. Sections 9, 10, 14-16,
37 22-26 and 34-36, Township 2 North, Range 16 East; Sections 29-32, Township 2 North, Range
38 17 East; Sections 1-3, 13, 24, 25 and 36, Township 1 North, Range 16 East; Sections 5-8, 14-22,

~~25 and 27-36, Township 1 North, Range 17 East; Sections 1-14, 16 and 17, Township 1 South, Range 17 East; and Sections 6-8, Township 1 South, Range 18 East, Willamette Meridian, Sherman County, Oregon.~~

C. THE SITE AND SITE BOUNDARY

The certificate holder shall satisfy the following administrative condition:

(III.C.1) Before beginning construction, but not more than two years before beginning construction, and after considering all micro-siting factors, the certificate holder shall provide to the Department, the Oregon Department of Fish and Wildlife (“ODFW”) and the Planning Director of Sherman County detailed maps of the facility site, showing the final locations where the certificate holder proposes to build facility components and a table showing the acres of temporary and permanent habitat impact by habitat category and subtype. The maps shall include the locations of temporary laydown areas and areas of temporary ground disturbance associated with the construction of all ~~F~~ facility component ~~transmission lines~~. The detailed maps of the final facility layout site shall indicate the habitat categories of all areas that would be affected during construction. In classifying the affected habitat into habitat categories, the certificate holder shall consult with ODFW. The certificate holder shall not begin ground disturbance in an affected area until the habitat assessment has been approved by the Department. The Department may employ a qualified contractor to confirm the habitat assessment by on-site inspection.

D. CONSTRUCTION DEADLINES

The certificate holder shall satisfy the following administrative conditions:

(III.D.1) The certificate holder shall begin construction of the facility within by June 18, 201~~86~~. Under OAR 345-015-0085(9), an amended site certificate is effective upon execution by the Council Chair and the ~~applicant~~ certificate holder. The Council may grant an extension of the deadline to begin construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted. [Updated for Amendment No. 32]

(III.D.2) The certificate holder shall complete construction of the facility by June 18, 2021~~19~~. Construction is complete when (1) the facility is substantially complete as defined by the certificate holder’s construction contract documents; (2) -acceptance testing has been satisfactorily completed; and (3) the energy facility is ready to begin continuous operation consistent with the site certificate. The certificate holder shall promptly notify the Department of the date of completion of construction. The Council may grant an extension of the deadline for completing construction in accordance with OAR 345-027-0030 or any

1 successor rule in effect at the time the request for extension is submitted.
2 [Updated for Amendment No. 32]

3 (III.D.3) Before beginning construction, the certificate holder shall notify the Department
4 in advance of any work on the site that does not meet the definition of
5 “construction” in ORS 469.300(6), excluding surveying, exploration or other
6 activities to define or characterize the site, and shall provide to the Department
7 a description of the work and evidence that its value is less than \$250,000.

8 **IV. SPECIFIC FACILITY CONDITIONS**

9 The conditions listed in this section include conditions based on representations in the
10 Application for a Site Certificate, Requests for Amendments 1, 2, and 3, and all supporting
11 records. These conditions are required under OAR 345-027-0020(10). The certificate holder
12 must comply with these conditions in addition to the conditions listed in Sections III, V, VI and
13 VII. This section includes other specific facility conditions the Council finds necessary to ensure
14 compliance with the siting standards of OAR Chapter 345, Divisions 22 and 24, and to protect
15 the public health and safety. For conditions that require subsequent review and approval of a
16 future action, ORS 469.402 authorizes the Council to delegate the future review and approval
17 to the Department if, in the Council’s discretion, the delegation is warranted under the
18 circumstances of the case.

19 **A. [PLACEHOLDER]**

20 **B. ORGANIZATIONAL EXPERTISE**

21 (IV.B.1) The certificate holder shall report promptly to the Department any change in its
22 corporate relationship with Orion Renewable Energy Group LLC. The certificate
23 holder shall report promptly to the Department any change in its access to the
24 resources, expertise and personnel of Orion Renewable Energy Group LLC.

25 (IV.B.2) Before beginning construction, the certificate holder shall notify the Department
26 of the identity and qualifications of the major design, engineering and
27 construction contractor(s) for the facility. The certificate holder shall select
28 contractors that have substantial experience in the design, engineering and
29 construction of similar facilities. The certificate holder shall report to the
30 Department any change of major contractors.

31 (IV.B.3) If the certificate holder chooses a third-party contractor to operate the facility,
32 the certificate holder shall submit to the Council the identity of the contractor so
33 the Council may review the qualifications and capability of the contractor to
34 meet the standards of OAR 345-022-0010. If the Council finds that a new
35 contractor meets these standards, the Council shall not require an amendment
36 to the site certificate for the certificate holder to hire the contractor.

- 1 (IV.B.4) Any matter of noncompliance under the site certificate shall be the responsibility
2 of the certificate holder. Any notice of violation issued under the site certificate
3 shall be issued to the certificate holder. Any civil penalties assessed under the
4 site certificate shall be levied on the certificate holder.
- 5 (IV.B.5) The certificate holder shall contractually require the engineering and
6 procurement contractor and all independent contractors and subcontractors
7 involved in the construction and operation of the facility to comply with all
8 applicable laws and regulations and with the terms and conditions of the site
9 certificate. Such contractual provision shall not operate to relieve the certificate
10 holder of responsibility under the site certificate.
- 11 (IV.B.6) The certificate holder shall obtain, or shall ensure that its contractors obtain,
12 necessary federal, State and local permits or approvals required for the
13 construction, operation and retirement of the facility. The certificate holder shall
14 work with local and State fire officials to ensure compliance with all fire code
15 regulations regarding public buildings.
- 16 (IV.B.7) During construction, the certificate holder shall have an on-site assistant
17 construction manager who is qualified in environmental compliance to ensure
18 compliance with all construction-related site certificate conditions. During
19 operation, the certificate holder shall have a facility manager who is qualified in
20 environmental compliance to ensure compliance with all ongoing site certificate
21 conditions. The certificate holder shall notify the Department of the name,
22 telephone number, fax number and e-mail address of these managers and shall
23 keep the Department informed of any change in this information.
- 24 (IV.B.8) Within 72 hours after discovery of conditions or circumstances that may violate
25 the terms or conditions of the site certificate, the certificate holder shall report
26 the conditions or circumstances to the Department.

27 **C. RETIREMENT AND FINANCIAL ASSURANCE**

- 28 (IV.C.1) The certificate holder shall retire the facility if the certificate holder permanently
29 ceases construction or operation of the facility. The certificate holder shall retire
30 the facility according to a final retirement plan approved by the Council, as
31 described in OAR 345-027-0110, and prepared pursuant to Condition (IV.C.2).
- 32 (IV.C.2) Two years before closure of the energy facility, the certificate holder shall submit
33 to the Department a proposed final retirement plan for the facility and site,
34 pursuant to OAR 345-027-0110, including:
- 35 (a) A plan for retirement that provides for completion of retirement within
36 two years after permanent cessation of operation of the energy facility
37 and that protects the public health and safety and the environment;

1 (b) A description of actions the certificate holder proposes to take to restore
2 the site to a useful, non-hazardous condition suitable for agricultural use;
3 and

4 (c) A detailed cost estimate, a comparison of that estimate with the dollar
5 amount secured by a bond or letter of credit and any amount contained
6 in a retirement fund, and a plan for assuring the availability of adequate
7 funds for completion of retirement.

8 (IV.C.3) The certificate holder shall prevent the development of any conditions on the
9 site that would preclude restoration of the site to a useful, non-hazardous
10 condition to the extent that prevention of such site conditions is within the
11 control of the certificate holder.

12 (IV.C.4) Before beginning construction, the certificate holder shall submit to the State
13 through the Council a bond or letter of credit in the amount described herein
14 naming the State, acting by and through the Council, as beneficiary or payee. If
15 the certificate holder elects to build the facility in a single phase, the initial bond
16 or letter of credit amount is ~~\$14,084,425,000~~ ~~\$16,491,000~~ (in 2008 dollars),
17 adjusted to the date of issuance as described in (b), or the amount determined
18 as described in (a). If the certificate holder elects to build the facility in more
19 than one phase, the amount of the initial bond or letter of credit for each phase
20 of construction shall be the amount determined as described in (a). The
21 certificate holder shall adjust the amount of each bond or letter of credit on an
22 annual basis thereafter as described in (b).

23 (a) The certificate holder may adjust the amount of each bond or letter of
24 credit based on the final design configuration of the facility by applying
25 the unit costs and general costs illustrated in Table IV.C.1 of the Final
26 Order on the Application to the final design and calculating the financial
27 assurance amount as described in that order, adjusted to the date of
28 issuance as described in (b) and subject to approval by the Department.

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

32 (i) Adjust the subtotal component of the bond or letter of credit
33 amount (expressed in 2008 dollars) to present value, using the
34 U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight,
35 as published in the Oregon Department of Administrative
36 Services' "Oregon Economic and Revenue Forecast" or by any
37 successor agency (the "Index") and using the annual average
38 index value for 2008 dollars and the quarterly index value for the
39 date of issuance of the new bond or letter of credit. If at any time
40 the Index is no longer published, the Council shall select a
41 comparable calculation to adjust 2008 dollars to present value.

- 1 (ii) Calculate the adjusted performance bond amount as 1 percent of
2 the new subtotal (i).
- 3 (iii) Add the subtotal (i) to the adjusted performance bond amount
4 (ii) for the adjusted gross cost.
- 5 (iv) Calculate the adjusted administration and project management
6 costs as 10 percent of the adjusted gross cost (iii).
- 7 (v) Calculate the adjusted future developments contingency as
8 10 percent of the adjusted gross cost (iii).
- 9 (vi) Add the adjusted gross cost (iii) to the sum of adjusted
10 administration and project management costs (iv) and the
11 adjusted future developments contingency (v) and round the
12 resulting total to the nearest \$1,000 to determine the adjusted
13 financial assurance amount.
- 14 (c) The certificate holder shall use a form of bond or letter of credit
15 approved by the Council.
- 16 (d) The certificate holder shall use an issuer of the bond or letter of credit
17 approved by the Council.
- 18 (e) The certificate holder shall describe the status of the bond or letter of
19 credit in the annual report submitted to the Council under Condition
20 (VII.21.a.ii).
- 21 (f) The bond or letter of credit shall not be subject to revocation or
22 reduction before retirement of the facility site.
- 23 (IV.C.5) If the certificate holder elects to use a bond to meet the requirements of
24 Condition (IV.C.4), the certificate holder shall ensure that the surety is obligated
25 to comply with the requirements of applicable statutes, Council rules and this
26 site certificate when the surety exercises any legal or contractual right it may
27 have to assume construction, operation or retirement of the energy facility. The
28 certificate holder shall also ensure that the surety is obligated to notify the
29 Council that it is exercising such rights and to obtain any Council approvals
30 required by applicable statutes, Council rules and this site certificate before the
31 surety commences any activity to complete construction, operate or retire the
32 energy facility.
- 33 (IV.C.6) The certificate holder shall report to the Department any release of hazardous
34 substances, pursuant to Oregon Department of Environmental Quality (“DEQ”)
35 regulations, within one working day after the discovery of such release. This
36 obligation shall be in addition to any other reporting requirements applicable to
37 such a release.

- 1 (IV.C.7) If the certificate holder has not remedied a release consistent with applicable
2 Oregon DEQ standards within six months after the date of the release, the
3 certificate holder shall submit to the Council for its approval an independently
4 prepared estimate of the additional cost of remediation or correction within
5 such six-month period.
- 6 (a) Upon approval of an estimate by the Council, the certificate holder shall
7 increase the amount of its bond or letter of credit by the amount of the
8 estimate.
- 9 (b) In no event, however, shall the certificate holder be relieved of its
10 obligation to exercise all due diligence in remedying a release of
11 hazardous substances.
- 12 (IV.C.8) All funds received by the certificate holder from the salvage of equipment and
13 buildings shall be committed to the restoration of the energy facility site to the
14 extent necessary to fund the approved site restoration and remediation.
- 15 (IV.C.9) The certificate holder shall pay the actual cost to restore the site to a useful,
16 non-hazardous condition at the time of retirement, notwithstanding the
17 Council's approval in the site certificate of an estimated amount required to
18 restore the site.
- 19 (IV.C.9) If the Council finds that the certificate holder has permanently ceased
20 construction or operation of the facility without retiring the facility according to a
21 final retirement plan approved by the Council, as described in OAR 345-027-0110
22 and prepared pursuant to Condition (IV.C.2), the Council shall notify the certificate
23 holder and request that the certificate holder submit a proposed final retirement
24 plan to the Department within a reasonable time not to exceed 90 days.
- 25 (a) If the certificate holder does not submit a proposed final retirement plan
26 by the specified date or if the Council rejects the retirement plan that the
27 certificate holder submits, the Council may direct the Department to
28 prepare a proposed a final retirement plan for the Council's approval.
- 29 (b) Upon the Council's approval of the final retirement plan prepared
30 pursuant to (a), the Council may draw on the bond or letter of credit
31 described in Condition (IV.C.4) and shall use the funds to restore the site
32 to a useful, non-hazardous condition according to the final retirement
33 plan, in addition to any penalties the Council may impose under OAR
34 Chapter 345, Division 29.
- 35 (c) If the amount of the bond or letter of credit is insufficient to pay the
36 actual cost of retirement, the certificate holder shall pay any additional
37 cost necessary to restore the site to a useful, non-hazardous condition.

1 (d) After completion of site restoration, the Council shall issue an order to
2 terminate the site certificate if the Council finds that the facility has been
3 retired according to the approved final retirement plan.

4 **D. LAND USE**

5 (IV.D.1) The certificate holder shall construct the public road improvements described in
6 the Application for a Site Certificate to meet or exceed road standards for the
7 road classifications in the County’s Transportation System Plan and Zoning
8 Ordinance because roads will require a more substantial section to bear the
9 weight of the vehicles and turbine components than would usually be
10 constructed by the County.

11 (IV.D.2) The certificate holder shall ensure that no equipment or machinery is parked or
12 stored on any county road except while in use.

13 (IV.D.3) The site certificate holder shall, in consultation with affected landowners, design
14 and construct private access roads to minimize the division of existing farm units.

15 (IV.D.4) The certificate holder shall not locate any aboveground facility structure
16 (including wind turbines, O&M building, substations and met towers, but not
17 including aboveground power collection and transmission lines and poles and
18 junction boxes) within 50 feet from any property line or within 50 feet from the
19 right of way of any arterial or major collector road.

20 (IV.D.5) Aboveground transmission line structures shall not occupy areas that show gross
21 indicators of landslide activity or marginal stability.

22 (IV.D.6) Collector lines in the Natural Hazards Combining Zone (“NH zone”) shall be
23 placed under ground except in instances where it is more practical to install
24 aboveground power collection lines and provided that the aboveground power
25 collection lines will be designed to minimize slope stability and other NH zone
26 hazards. The site-specific geotechnical investigation required prior to
27 construction shall address native soil and bedrock stability concerns at cuts, fills
28 and culvert crossings, and shall include design and construction
29 recommendations to minimize the potential for destabilizing marginally stable
30 slopes and the potential for stream erosion.

31 (IV.D.7) Prior to start of construction, the certificate holder shall submit for Sherman
32 County Planning Department concurrence the plans and profiles described at
33 SCZO 3.7.5(e).

34 (IV.D.8) Construction staging areas shall be limited to areas outside the Natural Hazards
35 CombiningNH zZone.

- 1 (IV.D.9) Roads or streets in the ~~HH~~Natural Hazards Combining Z-zone shall be stabilized
2 by planking, gravel or pavement as deemed necessary, and roadways shall be
3 built without installation of excessive fill, diversion of water or excessive cuts
4 unless the site investigation determines that such conditions will not be
5 detrimental to the area or create unwarranted maintenance problems or
6 additional hazards.
- 7 (IV.D.10) The certificate holder shall locate access roads and temporary construction
8 laydown and staging areas, including those associated with construction of
9 transmission lines or placement of conductors on third-party transmission lines,
10 to minimize disturbance with farming practices and, wherever feasible, as
11 determined in consultation with affected landowners, shall place turbines and
12 transmission interconnection lines along the margins of cultivated areas to
13 reduce the potential for conflict with farm operations. The certificate holder
14 shall place aboveground transmission and collector lines and poles and junction
15 boxes along property lines and public road rights-of-way to the extent
16 practicable.
- 17 (IV.D.11) During operation of the facility, the certificate holder, in cooperation with
18 landowners, shall avoid impact on cultivated land to the extent reasonably
19 possible when performing facility repair and maintenance activities.
- 20 (IV.D.12) Where necessary and feasible, the certificate holder shall provide access across
21 construction trenches to fields within the facility site and otherwise provide
22 adequate and timely access to properties during critical periods in the farming
23 cycle, such as harvest.
- 24 (IV.D.13) Before beginning construction of the facility, the certificate holder shall record a
25 Farm Management Easement covering the properties on which the certificate
26 holder locates wind power generation facilities. The certificate holder shall
27 record the easements in the real property records of Sherman County and shall
28 file a copy of the recorded easement with the Sherman County Planning
29 Director.
- 30 (IV.D.14) The certificate holder shall remove from Special Farm Assessment the portions
31 of parcels on which facilities are located and shall pay all property taxes due and
32 payable after the Special Farm Assessment is removed from such properties.
- 33 (IV.D.15) Within 90 days after beginning operation, the certificate holder shall provide to
34 the Department and to the Sherman County Planning Director the actual latitude
35 and longitude location or Stateplane NAD 83(91) coordinates of each turbine
36 tower, connecting lines and transmission lines. In addition, the certificate holder
37 shall provide to the Department and to the Sherman County Planning Director, a
38 summary of as-built changes in the facility compared to the original plan, if any.

- 1 (IV.D.16) The certificate holder shall work with the Sherman County Weed Control
2 manager to take appropriate measures to prevent the invasion, during and after
3 the facility's construction, of any weeds on the Sherman County noxious weed
4 list.
- 5 (IV.D.17) The certificate holder shall cooperate with the Sherman County Road
6 Department to ensure that any unusual damage or wear caused by the use of
7 the county's roads by the developer during the construction of the facility will be
8 the responsibility of the developer. The Road Department will provide an
9 assessment of road conditions in the facility area prior to the start of
10 construction of the facility and an evaluation of the roads following completion
11 of the facility to determine any significant change in condition. In addition, no
12 equipment or machinery of the developers shall be parked or stored on any
13 county road except while in use.
- 14 (IV.D.18) Prior to start of construction, the certificate holder shall, in consultation with
15 Sherman County, assign a 9-1-1 5-digit rural address to every tower road that
16 intersects a State or county road. The county will provide and install the signage
17 for these addresses.
- 18 (IV.D.19) Prior to beginning construction, the certificate holder will:
- 19 (a) Designate a route or routes for the transport of wind turbine construction
20 material (including water, aggregate, concrete, machinery and tower
21 pieces), with the intention of minimizing damage to non-designated roads,
22 and provide these designations to the County Road Master;
- 23 (b) Provide to the County Road Master a written summary of possible
24 anticipated road damage to the designated route or routes, and an
25 estimate of the cost of repair to the designated route or routes;
- 26 (c) Establish and maintain an escrow account for so long as construction is
27 ongoing, funded in an amount equal to the estimated cost to repair the
28 designated route or routes consistent with the estimate provided in (b);
29 and
- 30 (d) Conduct an inspection of the roads along the designated route or routes
31 before and after construction with a representative of the Sherman
32 County Road Department and an independent third party with the
33 required expertise to inspect and evaluate paved and graveled roads. In
34 the event a dispute arises, the third party shall be the final arbiter. The
35 cost of the hiring of the third party shall be borne by the applicant.
- 36 (IV.D.20) Before beginning construction of facility access roads, the certificate holder shall
37 confer with the Sherman County Road Master regarding any utility permits
38 needed for county road right-of-ways and obtain permits for construction of all

1 approach roads onto county roads, all in accordance with Sherman County
2 Ordinance No. 35-2007.

3 (IV.D.21) The certificate holder shall comply with Sherman County Zoning Ordinance
4 Section 4.14.4, Access Connection and Driveway Design, in connection with
5 construction of the O&M facility and substations.

6 (IV.D.22) Prior to construction, Certificate Holder shall demonstrate that the final location
7 of turbines within the micrositing corridors approved by the Council will satisfy
8 setback requirements prescribed by Section 4 of the Sherman County Wind
9 Setback Ordinance (Ordinance No. 39-2007) unless the Council or Oregon
10 Department of Energy has approved a variance to such setback for the turbine or
11 the Certificate Holder has negotiated a setback agreement with the affected
12 adjacent property owner or wind project developer. [Amendment #1]

13 **E. SOIL PROTECTION**

14 (IV.E.1) The certificate holder shall conduct all construction work in compliance with an
15 Erosion and Sediment Control Plan (the "ESCP") satisfactory to the Oregon DEQ
16 and as required under the National Pollutant Discharge Elimination System
17 Storm Water Discharge General Permit #1200-C. The certificate holder shall
18 include in the ESCP any procedures necessary to meet local erosion and
19 sediment control requirements or storm water management requirements.

20 (IV.E.2) Where temporary impacts will occur in cultivated areas, the certificate holder
21 shall salvage approximately three feet of topsoil and stockpile this topsoil in
22 windrows. The certificate holder shall protect the windrows with plastic sheeting
23 or mulch. Upon removal of the temporary features, the certificate holder shall
24 cultivate the subsoil to a depth of at least 12 inches (except where bedrock
25 prohibits achieving this depth) and then redistribute the salvaged topsoil to
26 match adjacent grades.

27 (IV.E.3) During facility operation, the certificate holder shall routinely inspect and
28 maintain all roads, pads and trenched areas and, as necessary, maintain or repair
29 erosion control measures. The certificate holder shall restore areas that are
30 temporarily disturbed during facility maintenance or repair activities to
31 predisturbance condition or better.

32 (IV.E.4) Prior to construction, the certificate holder shall develop a plan to control the
33 introduction and spread of noxious weeds during facility construction and
34 operation. The plan shall be developed in consultation with the Department, the
35 Sherman County Weed Control manager, and ODFW. The plan shall be approved
36 by the Department prior to construction. The plan shall focus on weed species
37 listed on the Sherman County noxious weed list, but shall also include
38 preventative measures to combat noxious weeds of concern in the area.

1 ~~(Updated for Amendment No. 3) During construction and operation of the~~
2 ~~facility, the certificate holder shall implement a plan, developed in consultation~~
3 ~~with the Sherman County Weed Control manager, to control the introduction~~
4 ~~and spread of noxious weeds.~~

5 (IV.E.5) During construction, the certificate holder shall ensure that the wash down of
6 concrete trucks occurs only at a contractor-owned batch plant or at tower
7 foundation locations. If such wash down occurs at tower foundation locations,
8 then the certificate holder shall ensure that wash down wastewater does not run
9 off the construction site into otherwise undisturbed areas and that the
10 wastewater is disposed of on backfill piles and buried underground with the
11 backfill over the tower foundation.

12 (IV.E.6) During facility operation, if blade-washing becomes necessary, the certificate
13 holder shall ensure that there is no runoff of wash water from the site or
14 discharges to surface waters, storm sewers or dry wells. The certificate holder
15 shall not use acids, bases or metal brighteners with the wash water. The
16 certificate holder may use biodegradable, phosphate-free cleaners sparingly.

17 **F. PROTECTED AREAS**

18 [No conditions]

19 **G. SCENIC RESOURCES**

20 (IV.G.1) To reduce the visual impact of the facility, the certificate holder shall:

- 21 (a) Mount nacelles on smooth steel structures painted uniformly in a neutral
22 color to blend with the surrounding landscape;
- 23 (b) Paint substation structures in a neutral color to blend with the
24 surrounding landscape;
- 25 (c) Not allow any advertising to be used on any part of the facility;
- 26 (d) Use only those signs required for facility safety or required by law, except
27 that the certificate holder may erect a sign to identify the facility; and
- 28 (e) Maintain any signs allowed under this condition in good repair.

29 (IV.G.2) The certificate holder shall design and construct the O&M facility to be generally
30 consistent with the character of similar buildings used by commercial farmers or
31 ranchers in the area and shall paint the building in a neutral color to blend with
32 the surrounding landscape.

33 (IV.G.3) During operation of the facility, the certificate holder shall not use exterior
34 nighttime lighting except:

- 1 (a) The minimum turbine tower lighting required or recommended by the
- 2 Federal Aviation Administration (the “FAA”);
- 3 (b) Security lighting at the O&M facility and substations, provided that such
- 4 lighting is shielded or directed downward to reduce glare;
- 5 (c) Minimum lighting necessary for repairs or emergencies; and
- 6 (d) As otherwise required by federal, State or local law.

7 **H. RECREATION**

8 [No conditions]

9 **I. PUBLIC HEALTH AND SAFETY STANDARDS FOR WIND ENERGY FACILITIES**

- 10 (IV.1.1) The certificate holder shall follow manufacturer’s recommended handling
- 11 instructions and procedures to prevent damage to turbine or turbine tower
- 12 components that could lead to failure.

- 13 (IV.1.2) The certificate holder shall install and maintain self-monitoring devices on each
- 14 turbine, connected to a fault annunciation panel or SCADA system at the O&M
- 15 facility to alert operators to potentially dangerous conditions. The certificate
- 16 holder shall equip each turbine with vibration-sensing equipment that will shut
- 17 down the turbine in the event of abnormal levels of vibration.

- 18 (IV.1.3) The certificate holder shall construct turbine towers with no exterior ladders or
- 19 access to the turbine blades and shall install locked tower access doors. The
- 20 certificate holder shall keep tower access doors locked at all times except when
- 21 authorized personnel are present.

- 22 (IV.1.4) The certificate holder shall have an operational safety-monitoring program and
- 23 shall inspect all turbines and turbine tower components on a regular basis. The
- 24 certificate holder shall maintain or repair turbine and turbine tower components
- 25 as necessary to protect public safety.

- 26 (IV.1.5) For turbine types having pad-mounted step-up transformers, the certificate
- 27 holder shall install the transformers at the base of each tower in locked cabinets
- 28 designed to protect the public from electrical hazards and to avoid creation of
- 29 artificial habitat for raptor prey.

- 30 (IV.1.6) To protect the public from electrical hazards, the certificate holder shall enclose
- 31 the facility substations with appropriate fencing and locked gates.

- 32 (IV.1.7) Before beginning construction, the certificate holder shall submit to the FAA and
- 33 the Oregon Department of Aviation (“ODA”) a Notice of Proposed Construction
- 34 or Alteration identifying the proposed final locations of the turbines and related
- 35 or supporting facilities and shall provide a copy of this notice to the Department.

1 The certificate holder shall notify the Department of the FAA's and ODA's
2 responses as soon as they have been received.

3 (IV.I.8) The certificate holder shall construct all facility components in compliance with
4 the following setback requirements:

5 (a) The certificate holder shall maintain a minimum distance of 110 percent
6 of maximum blade tip height, measured from the centerline of the
7 turbine tower to the nearest edge of any public road right-of-way. The
8 certificate holder shall assume a minimum right-of-way width of 60 feet.

9 (b) The certificate holder shall maintain a minimum distance of 1,320 feet,
10 measured from the centerline of the turbine tower to the center of the
11 nearest residence existing at the time of tower construction.

12 (c) The certificate holder shall maintain a minimum distance of 110 percent of
13 maximum blade tip height, measured from the centerline of the turbine
14 tower to the nearest boundary of the certificate holder's lease area.

15 **J. ~~SITING STANDARDS FOR WIND ENERGY FACILITIES~~ CUMULATIVE EFFECTS STANDARDS**
16 **FOR WIND ENERGY FACILITIES**

17 [No conditions]

18 **K. SITING STANDARDS FOR TRANSMISSION LINES**

19 (IV.K.1) The certificate holder shall install the underground segments of the 34.5-kV
20 collector system at a minimum depth of three feet.

21 **L. THREATENED AND ENDANGERED SPECIES**

22 (IV.L.1) The certificate holder shall report the results of the database review and
23 consultation to the Department and to ODFW and, if there have been new
24 documentations of nesting bald eagles or peregrine falcons within two miles of
25 the facility, the certificate holder shall implement appropriate measures to
26 protect the species from adverse impact, as approved by the Department and
27 ODFW.

28 (IV.L.2) The certificate holder shall implement measures to mitigate impacts to sensitive
29 wildlife habitat during construction including, but not limited to, the following:

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

32 (b) Ensuring that a qualified person instructs construction personnel to be
33 aware of wildlife in the area and to take precautions to avoid injuring or
34 destroying wildlife or significant wildlife habitat; and

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

3 (IV.L.3) Prior to the beginning of construction but no more than two years prior to the
4 beginning of construction of the facility the certificate holder shall perform new
5 field surveys for threatened and endangered species following the survey
6 protocol set forth in the Application for Site Certificate. The certificate holder
7 shall report the results of the field surveys to the Department, ODFW, and the
8 Oregon Department of Agriculture. If the surveys identify the presence of
9 threatened or endangered species within the site boundary, the certificate
10 holder shall implement appropriate measures to avoid a significant reduction in
11 the likelihood of survival or recovery of the species, as approved by the
12 Department, ODFW, and the Oregon Department of Agriculture. (Updated for
13 Amendment No. 3)

14 **M. FISH AND WILDLIFE HABITAT**

15 (IV.M.1) Prior to construction, the certificate holder shall finalize and implement the
16 Habitat Mitigation and Revegetation Plan (HMRP), included as Attachment E to
17 the Final Order on Amendment No. 3, as approved by the Department in
18 consultation with ODFW. ~~The certificate holder shall implement the Habitat~~
19 Mitigation and Revegetation Plan submitted by the certificate holder in its
20 August 2008 application supplement and attached to the Final Order as
21 Attachment B, and as amended from time to time. Such amendments may be
22 made without amendment of the site certificate. The Council authorizes the
23 Department to agree to amendments, and the Council retains the authority to
24 approve, reject, or modify any amendments of the HMRP agreed to by the
25 Department. (Updated for Amendment No. 3)

26 The finalized HMRP shall incorporate the maps, habitat classifications, and
27 anticipated temporary and permanent habitat impact assessment completed as
28 per site certificate Condition III.C.1. Prior to start of construction, the certificate
29 holder shall acquire the legal right to create, enhance, maintain and protect a
30 habitat mitigation area so long as the site certificate is in effect by means of
31 outright purchase, conservation easement or similar conveyance and shall
32 provide a copy of the documentation to the Department. The nominal lease term
33 shall be at least 30 years, with an option to extend if the facility continues
34 operations past year 30. The mitigation area shall be as shown in figures 1, 2 and
35 3 of Attachment B to the Final Order. Any different mitigation area shall require
36 prior approval of the Department in consultation with ODFW. (Updated for
37 Amendment No. 3)

38 (IV.M.2) The certificate holder shall restore areas outside the permanent footprint that
39 are disturbed during construction according to the methods and monitoring
40 procedures described in the revegetation plan included in the Final Order as

1 Attachment B and as amended from time to time. Mitigation and restoration
2 requirements in the plan shall apply to all laydown areas and other areas of
3 temporary disturbance, including those associated with construction of
4 transmission lines.

5 (IV.M.3) Permanent met towers shall not have guy wires.

6 (IV.M.4) The certificate holder shall survey the status of known raptor nests within 0.5
7 miles before ground-disturbing activities begin. If an active nest is found, and
8 ground-disturbing activities are scheduled to begin before the end of the
9 sensitive nesting and breeding season (mid-April to mid-August), the certificate
10 holder will not engage in ground-disturbing activities within a 0.25-mile buffer
11 around the nest until the nest fledges young or the nest fails, unless ODFW
12 approves an alternative plan. If ground-disturbing construction activities
13 continue into the sensitive nesting and breeding season for the following year,
14 the certificate holder will not engage in ground-disturbing activities within the
15 0.25-mile buffer if the nest site is found to be active until the nest fledges young
16 or the nest fails, unless ODFW approves an alternate plan.

17 (IV.M.5) The certificate holder will survey the status of known loggerhead shrikes nests
18 and visit sites where non-nesting loggerhead shrikes were observed in order to
19 determine old and new nest sites. Ground-disturbing activities will be sequenced
20 with active raptor nests, using a 150-meter buffer.

21 (IV.M.6) Trees in Category 3 upland tree habitat shall not be physically harmed or
22 removed.

23 (IV.M.7) The certificate holder shall conduct wildlife monitoring as described in the
24 Wildlife Monitoring and Mitigation Plan that is included as Attachment A to the
25 Final Order and as amended from time to time.

26 (IV.M.8) The certificate holder shall design and construct all aboveground transmission
27 line support structures following the practices suggested by the Avian Powerline
28 Interaction Committee (APLIC 1996, referenced in the Application for a Site
29 Certificate, at P-33) and shall install anti-perching devices on transmission pole
30 tops and cross arms where the poles are within the site or are located within
31 one-quarter mile of any wind turbine.

32 (IV.M.9) The certificate holder may construct turbines and other facility components
33 within the 900-foot corridors shown on Figures P-1 through P-10 of the
34 Application for a Site Certificate and August 2008 supplement, ~~subject to the~~
35 ~~following requirements addressing potential habitat impact:~~

36 ~~(a)~~ The certificate holder shall not construct any facility components within areas of
37 Category 1 or Category 2 habitat and shall avoid temporary disturbance of
38 Category 1 or Category 2 habitat, except for those acreages allowed in Table 1

~~IV.M.1 in the Final Order for RFA No. 3. (Updated for Amendment No. 3)(b)
The certificate holder shall design and construct facility components that
are the minimum size needed for safe operation of the energy facility.~~

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

Species	Sensitive Period	Early Release Date
Swainson's hawk	April 1 to August 15	May 31
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

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

During the year in which construction of any phase occurs, the certificate holder shall use a protocol approved by ODFW to determine whether there are any active nests of these species within a half-mile of any areas that would be disturbed during construction. If a nest is occupied by any of these species after the beginning of the sensitive period, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading or other major ground disturbance) or allow high levels of construction traffic within 1300 feet of the nest site, 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.

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 noncompliance 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

1 construction before the ending day of the sensitive period with the approval of
2 ODFW, but after the young are fledged. The certificate holder shall use a
3 protocol approved by ODFW to determine when the young are fledged (meaning
4 the young are independent of the core nest site).

5 (IV.M.11) The certificate holder shall conduct two (2) years of raptor nest surveys with at
6 least one (1) year of the surveys occurring prior to the beginning of construction.
7 The raptor nest surveys shall be conducted following the instructions set forth in
8 the Raptor Nest Survey Protocol for Golden Hills Wind Project included as
9 Attachment C to the Second Amended Site Certificate. The certificate holder
10 shall provide a written report on the raptor nest surveys to the Department and
11 ODFW. If the surveys identify the presence of raptor nests within the survey
12 area, the certificate holder shall implement appropriate measures, consistent
13 with the Habitat Mitigation and Revegetation Plan, and as approved by the
14 Department in consultation with ODFW, to assure that design, construction, and
15 operation of the facility are consistent with the Fish and Wildlife Habitat
16 standard. (Updated for Amendment No. 3)

17 **V. STANDARDS NOT APPLICABLE TO SITE CERTIFICATE ELIGIBILITY**

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

23 **A. STRUCTURAL STANDARD**

24 (V.A.1) The certificate holder shall submit a site-specific geotechnical investigation
25 report to the Oregon Department of Geology & Mineral Industries (“DOGAMI”).
26 The investigation and report shall conform to the Oregon State Board of
27 Geologist Examiners guidelines titled “Guidelines for Engineering Geologic
28 Reports” and “Guidelines for Site-Specific Seismic Hazard Reports for Essential
29 and Hazardous Facilities and Major and Special-Occupancy Structures in
30 Oregon.” The certificate holder shall provide the Department with the report
31 and with evidence of concurrence by DOGAMI prior to start of construction.

32 (V.A.2) The certificate holder shall instruct the consulting geologist and engineer to
33 study slope stability issues and include conclusions and recommendations about
34 slope stability in the site-specific geotechnical report.

35 (V.A.3) The certificate holder shall design and construct the facility in accordance with
36 requirements set forth by the State’s Building Code Division and any other
37 applicable codes and design procedures.

1 (V.A.4) The certificate holder shall design, engineer and construct the facility to avoid
2 dangers to human safety presented by non-seismic hazards. As used in this
3 condition, “non-seismic hazards” include settlement, landslides, flooding and
4 erosion.

5 (V.A.5) The certificate holder shall ensure that wind turbine corridors and major
6 structures are constructed with sufficient setbacks from all steeper slopes to
7 minimize the potential for creating unstable or marginally stable conditions.

8 **B. HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES STANDARD**

9 (V.B.1) The certificate holder shall design the facility to avoid impacts to sites 35SH217,
10 35SH220, GH site 6 (above ground resource), 35SH219 and GH Isolate 6.

11 (V.B.2) For sites 35SH215, 35SH216 and 35SH221, the certificate holder shall avoid
12 impacts to these sites during construction and subsequent operations. The
13 certificate holder shall develop a Cultural Resource Management Plan (the
14 “CRMP”) that includes a 30-meter buffer area around these listed sites
15 designated as a “no-work zone” for all ground-disturbing activities. The
16 certificate holder shall submit the CRMP to the State Historic Preservation Office
17 (the “SHPO”) for concurrence and shall provide to the Department
18 documentation confirming SHPO concurrence prior to start of construction.

19 (V.B.3) The certificate holder shall consult with the SHPO regarding the development of
20 a CRMP that will address the protection of aboveground historic resources and
21 belowground archeological resources. The CRMP shall include established
22 protocol and procedures for unanticipated discoveries, such as the discovery of
23 new archeological sites or Native American human remains during ground-
24 disturbing activities, and shall document how these protocols will follow State
25 laws and rules at ORS 358.905-961, ORS 390.235, OAR 736-051-0090 and
26 ORS 97.740-760 as in effect on the date of this site certificate.

27 (V.B.4) Before beginning construction of any phase of the facility, the certificate holder
28 shall provide to the Department a map showing the final design locations of all
29 components of that phase of the facility and areas that would be temporarily
30 disturbed during construction, and also showing the areas surveyed by Tetra Tech
31 in preparing the Archeological Inventory for Golden Hills Wind Energy
32 Development included in the Application for a Site Certificate as Attachment S-1. If
33 there are any additional areas where ground-disturbing activities will occur that
34 were not part of the original facility area, the certificate holder shall contact the
35 SHPO to determine whether there will be additional impacts to cultural resources.

36 (V.B.5) The certificate holder shall ensure that a qualified archaeologist instructs
37 construction personnel on the identification of cultural resources

- 1 (V.B.6) If any cultural resources are discovered during construction activities, all work at
2 that location shall cease immediately and the certificate holder shall contact the
3 SHPO to determine whether it is necessary to have an archeologist travel to the
4 worksite and assess the discovery or monitor construction activities.
- 5 (V.B.7) “No access” buffers shall be identified on construction plans and temporarily
6 demarcated in the field before and during construction. The facility
7 Environmental Inspector shall monitor flagged “no access” buffers around
8 archeological sites during construction to prevent accidental damage to cultural
9 resources. These flags or markers shall not be moved or removed during
10 construction activities, and construction personnel shall be advised of these
11 restrictions.
- 12 (V.B.8) The certificate holder shall ensure that construction personnel cease all ground-
13 disturbing activities in the immediate area if any archaeological or cultural
14 resources are found during construction of the facility until a qualified
15 archaeologist can evaluate the significance of the find. No construction
16 personnel will be allowed in the discovery area except for facility management in
17 consultation with the SHPO. The certificate holder shall notify the Department
18 and the SHPO of the find. If the SHPO determines that the resource is significant,
19 the certificate holder shall make recommendations to the Council for mitigation,
20 including avoidance or data recovery, in consultation with the Department, the
21 SHPO, the appropriate Oregon tribes and other appropriate parties. The
22 certificate holder shall not restart work in the affected area until the certificate
23 holder has demonstrated to the Department that it has complied with State
24 archaeological protection and archaeological permit laws in coordination with
25 the SHPO.
- 26 (V.B.9) The certificate holder shall ensure that construction personnel proceed carefully
27 in the vicinity of the mapped alignment of the Oregon Trail. If any intact physical
28 evidence of the trail is discovered, the certificate holder shall avoid any
29 disturbance to the intact segments by redesign, reengineering or restricting the
30 area of construction activity. The certificate holder shall promptly notify the
31 Department and the SHPO of the discovery. The certificate holder shall consult
32 with the Department and with the SHPO to determine appropriate mitigation
33 measures.
- 34 (V.B.10) Upon completion of construction, the certificate holder shall consult with the
35 Oregon Historic Trails Advisory Council regarding the appropriate content of an
36 interpretive sign. After such consultation, the certificate holder shall place in a
37 publicly accessible location a sign giving notice of the historic background of the
38 facility site and surrounding areas.

1 **C. PUBLIC SERVICES STANDARD**

2 (V.C.1) During operation of the facility, the certificate holder shall obtain water for on-
3 site use from one well located at the O&M facility, subject to compliance with
4 applicable permit requirements. During operation of the facility, the certificate
5 holder shall not use more than 5,000 gallons of water per day from the on-site
6 well.

7 (V.C.2) During construction and operation of the facility, the certificate holder shall
8 install on-site security and shall require on-site security personnel to establish a
9 line of communication with the Sherman County Sheriff's Office to regularly
10 report on the status of on-site security operations.

11 (V.C.3) Before beginning construction the certificate holder shall develop and implement
12 a fire safety and response plan for both construction and operation phases in
13 consultation with the Oregon State Fire Marshal, the Sherman County Emergency
14 Services, North Sherman Fire and Rescue, Moro Rural Fire Protection District and
15 other first-response agencies the facility will rely upon for fire protection services.
16 A copy of the plan must be provided to the Department at least 30 days before
17 beginning construction. The plan must be updated at least annually by the
18 agencies identified in (a) below and a copy provided to the agencies identified in
19 (a), (b), and (c) and to the Department within 30 days of the update. The fire
20 safety and response plan shall address, at a minimum, the following:

- 21 (a) Identification of agencies that participated in developing the plan;
- 22 (b) Identification of agencies that are designated as first response agencies
23 or are included in any mutual aid agreements with the facility;
- 24 (c) A list of any other mutual aid agreements or fire protection associations
25 in the vicinity of the facility;
- 26 (d) Complete contact information for each agency listed in (a), (b), and
27 (c) above, including at least two facility contacts available on a 24-hour
28 basis;
- 29 (e) Communication protocols for both routine and emergency events and
30 the incident command system to be used in the event a fire response by
31 multiple agencies is needed at the facility;
- 32 (f) Access and fire response at the facility site during construction and
33 operations. Fire response plans during construction shall address regular
34 and frequent communication amongst the agencies regarding the
35 number and location of construction sites within the site boundary,
36 access roads that are completed and those still under construction,
37 location of water receptacles, and a temporary signage system until
38 permanent addresses and signs are in place;

- 1 (g) The minimum designated time period of the fire season (i.e., May 1
2 through October 15) and the criteria to modify the designated fire season
3 to respond to changing conditions;
- 4 (h) The number, size, and location of onsite water receptacles to be staged
5 around the facility site for firefighting purposes during the fire season;
6 and
- 7 (i) Training needs (both for facility personnel and for first responders).
- 8 (j) Copies of mutual aid, fire protection association, or other agreements
9 entered into concerning fire protection at the facility site.
- 10 (V.C.4) During construction of the facility, the certificate holder shall ensure that
11 construction vehicles and equipment are operated on graveled areas to the
12 extent possible and that open flames, such as cutting torches, are kept away
13 from grassy areas.
- 14 (V.C.5) During construction and operation of the facility, the certificate holder shall
15 ensure that the O&M facility and all service vehicles are equipped with shovels
16 and portable fire extinguishers of a 4A50BC or equivalent rating.
- 17 (V.C.6) During construction of the facility, the certificate holder shall maintain a water
18 truck on site to respond to potential fire incidents.
- 19 (V.C.7) The certificate holder shall construct turbines on concrete pads with a minimum
20 of 10 feet of nonflammable and non-erosive ground cover on all sides. The
21 certificate holder shall cover turbine pad areas with nonflammable, non-erosive
22 material immediately following exposure during construction and shall maintain
23 the pad area covering during operation of the facility.
- 24 (V.C.8) During operation of the facility, the certificate holder shall ensure that all on-site
25 employees receive annual fire prevention and response training, including tower
26 rescue training, from qualified instructors or members of local fire districts and
27 shall ensure that all employees are instructed to keep vehicles on roads and off
28 dry grassland, except when off-road operation is required for emergency
29 purposes.
- 30 (V.C.9) Upon beginning operation of the facility, the certificate holder shall provide to
31 North Sherman Fire Protection District and Moro Rural Fire Protection District a
32 site plan indicating the identification number assigned to each turbine and the
33 location of all facility structures. During operation of the facility, the certificate
34 holder shall ensure that appropriate district personnel have an up-to-date list of
35 the names and telephone numbers of facility personnel available to respond on a
36 24-hour basis in case of an emergency on the facility site.

1 (V.C.10) Before and during beginning construction of the facility, the certificate holder
2 shall develop and implement a construction-phase traffic management plan with
3 all affected local jurisdictions.

4 (V.C.11) During construction of the facility, the certificate holder shall implement
5 measures to reduce traffic impacts, including:

- 6 (a) Providing notice to all affected local jurisdictions in advance of deliveries;
- 7 (b) Providing notice to adjacent landowners and residents of Biggs Junction
8 in advance of deliveries; and
- 9 (c) Requiring flaggers to be at appropriate locations at appropriate times
10 during construction to direct traffic and reduce accident risks.

11 (V.C.12) Prior to start of construction, the certificate holder shall obtain from the
12 Sherman County Road Department an assessment of road conditions in the
13 facility area prior to the start of construction of the facility. The certificate holder
14 shall also obtain from the county road department an evaluation of the roads
15 following completion of the facility to determine any significant change in
16 condition. The certificate shall cooperate with the Sherman County Road
17 Department to ensure that any unusual damage or wear caused by the use of
18 the county's roads by the developer during the construction of the facility will be
19 the responsibility of the developer. In addition, no equipment or machinery of
20 the developers shall be parked or stored on any county road except while in use.

21 (V.C.13) Prior to beginning construction, the certificate holder will

- 22 (a) Designate a route or routes for the transport of wind turbine
23 construction material (including water, aggregate, concrete, machinery
24 and tower pieces), with the intention of minimizing damage to non-
25 designated roads, and provide these designations to the County Road
26 Master;
- 27 (b) Provide to the County Road Master a written summary of possible
28 anticipated road damage to the designated route or routes, and an
29 estimate of the cost of repair to the designated route or routes;
- 30 (c) Establish and maintain an escrow account for so long as construction is
31 ongoing funded in an amount equal to the estimated cost to repair the
32 designated route or routes consistent with the estimate provided in (b);
33 and
- 34 (d) Conduct an inspection of the roads along the designated route or routes
35 before and after construction with a representative of the Sherman County
36 Road Department and an independent third party with the required
37 expertise to inspect and evaluate paved and graveled roads. In the event a
38 dispute arises, the third party shall be the final arbiter. The cost of the
39 hiring of the third party shall be borne by the certificate holder.

1 (V.C.14) The certificate holder shall work with Sherman County Emergency Manager to
2 assign a 9-1-1 5-digit rural address to every tower road that intersects a State or
3 county road. The county will provide and install the signage for these addresses.

4 **D. WASTE MINIMIZATION STANDARD**

5 (V.D.1) During construction, the certificate holder shall implement a waste management
6 plan that includes, but is not limited to, the following measures:

- 7 (a) Recycling steel and other metal scrap;
- 8 (b) Recycling wood waste;
- 9 (c) Recycling packaging wastes, such as paper and cardboard;
- 10 (d) Collecting non-recyclable waste for transport to a landfill; and
- 11 (e) Segregating all hazardous wastes, such as used oil, oily rags and oil-
12 absorbent materials, lubricant and cleaning solution containers, mercury-
13 containing lights, and lead-acid and nickel-cadmium batteries, for
14 disposal by a licensed firm specializing in the proper recycling or disposal
15 of hazardous wastes.

16 (V.D.2) During operation, the certificate holder shall implement a waste management
17 plan that includes, but is not limited to, the following measures:

- 18 (a) Training employees to minimize and recycle solid waste;
- 19 (b) Recycling paper products, metals, glass and plastics;
- 20 (c) Recycling used oil and hydraulic fluid;
- 21 (d) Collecting non-recyclable waste for transport to a landfill; and
- 22 (e) Segregating all hazardous wastes, such as used oil, oily rags and oil-
23 absorbent materials, oil and cleaning solution containers, mercury-
24 containing lights, and lead-acid and nickel-cadmium batteries, for
25 disposal by a licensed firm specializing in the proper recycling or disposal
26 of hazardous wastes.

27 (V.D.3) During construction, the certificate holder shall provide portable toilets for on-
28 site sewage handling and shall ensure that they are pumped and cleaned
29 regularly by a licensed contractor.

30 (V.D.4) During operation, the certificate holder shall discharge sanitary wastewater
31 generated at the O&M facility to a licensed on-site septic system in compliance
32 with county permit requirements. The certificate holder shall design the septic
33 system with a discharge capacity of less than 5,000 gallons per day.

1 VI. OTHER APPLICABLE REGULATORY REQUIREMENTS

2 A. REQUIREMENTS UNDER COUNCIL JURISDICTION

3 1. NOISE CONTROL REGULATIONS

4 (VI.A.1.1) To reduce noise impacts at nearby residential areas, the certificate holder shall:

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

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

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

11 (VI.A.1.2) The certificate holder shall submit, for Department approval prior to
12 construction, a complete new noise analysis for the facility [based on the final](#)
13 [design layout as designed](#) and generate a new table listing each noise-sensitive
14 property, as defined in OAR 340-035-0015(38), and the predicted maximum
15 hourly L₅₀ noise level at each noise-sensitive property. In addition, the certificate
16 holder shall provide the predicted sound levels contributed by each turbine at
17 each noise-sensitive property that does not provide a waiver of the ambient
18 noise rule. The certificate holder shall perform the analysis using the CADNA/A
19 by DataKustik GmbH of Munich, Germany, and shall base the analysis on the final
20 facility design including final choice of turbine and location of all facility
21 components. The analysis shall demonstrate to the satisfaction of the
22 Department that each of the following requirements have been met:

23 (a) For any noise-sensitive property, the certificate holder shall identify the
24 final design locations of all turbines to be built and perform a noise
25 analysis demonstrating, in accordance with OAR
26 340-035-0035(1)(b)(B)(iii)(IV), that the total hourly L₅₀ noise level
27 generated by the facility would not exceed 50 dBA at the appropriate
28 measurement point. The certificate holder shall assume the following
29 input parameters:

- 30 • The maximum sound power level warranted by the manufacturer or
31 confirmed by other means acceptable to the Department;
- 32 • The exact locations of the proposed turbines;
- 33 • Attenuation of sound due to absorption to be calculated using a
34 methodology satisfactory to the Department;
- 35 • The use of 50° F temperature and 70 percent relative humidity in the
36 analysis;

- A 2dB safety margin shall be added to turbine sound power levels;
- No credit for shielding of any residence by terrain; and
- All receptors treated as simultaneously downwind of all turbines.

(b) If the hourly L₅₀ noise levels caused by the facility at any noise-sensitive property would increase the ambient noise level at any noise-sensitive property over the full set of wind conditions ranging from cut in to full load by more than 10 dBA, the certificate holder shall obtain a legally effective easement or real covenant from that property owner pursuant to which the owner of the property authorizes the certificate holder's operation of the facility to increase ambient statistical noise levels L₅₀ and L₅₀ by more than 10 dBA at the appropriate measurement point. A legally effective easement or real covenant shall (i) include a legal description of the burdened property (the noise-sensitive property); (ii) be recorded in the real property records of the county; (iii) expressly benefit the certificate holder; (iv) expressly run with the land and bind all future owners, lessees or holders of any interest in the burdened property; and (v) not be subject to revocation without the certificate holder's written approval.

(c) If, for any noise-sensitive property where the hourly L₅₀ noise levels caused by the facility would increase by more than 10 dBA above the ambient level over the full range of wind conditions measured for that property and where the certificate holder has not obtained a legally effective easement or real covenant as described in (b), the certificate holder shall identify measures to reduce noise at that property either by eliminating or moving turbines, and shall perform the noise analysis again to demonstrate, in accordance with OAR 340-035-0035(1)(b)(B)(iii)(IV), that the total noise generated by the facility would meet the ambient noise degradation test at the appropriate measurement point at that noise-sensitive property. The certificate holder shall obtain Department concurrence of the new analysis prior to start of construction.

(VI.A.1.3) During operation, the certificate holder shall maintain a complaint response system to address noise complaints. The certificate holder shall promptly notify the Department of any complaints received regarding facility noise and of any actions taken by the certificate holder to address those complaints. Prior to start of commercial operation, the certificate holder shall notify, in writing, the owners of potentially affected noise-sensitive properties identified in Exhibit X of the completed Application for a Site Certificate. The notice shall inform the property owners of the procedure and contact information for filing a complaint regarding the noise level from the facility once it is operating. The certificate holder shall document the issuance of this notice and provide that documentation to the Department.

1 (VI.A.1.4) Prior to start of commercial operation, the certificate holder shall submit a plan
2 for complaint-based operational noise monitoring to the Department.
3 Commercial operation shall not commence until the Department has concurred
4 in writing with the complaint-based noise monitoring protocol. The plan shall
5 provide for testing at houses whose owners or occupants submit a complaint to
6 the Council or the Department. The plan shall include a schedule for completion
7 of required testing and a date certain by which written results shall be provided
8 to the Council. If the owner of the property that filed the complaint refuses to
9 grant access for the purpose of performing the noise test described in this
10 condition after reasonable attempts are made by the certificate holder to
11 receive permission for access, then the Department shall not require further
12 corrective action.

13 **2. REMOVAL FILL LAW**

14 ~~[No conditions]~~

15 **Removal-Fill Condition 1: Prior to construction, the certificate holder shall:**

- 16 1) Conduct an updated wetlands and waters delineation survey of all areas to be
17 temporarily or permanently impacted by the facility based on final layout and design.
- 18 2) Submit the delineation survey report to the department and Oregon Department of
19 State Lands and receive concurrence of the report from DSL.
- 20 3) Confirm from the results of the delineation survey and DSL concurrence that the facility
21 will not need a removal-fill permit.
- 22 4) If a removal-fill permit is necessary, file a site certificate amendment request to review
23 and process the permit request.

24 (Added for Amendment No. 3)

25 **3. ~~GROUND WATER ACT~~ WATER RIGHTS**

26 [No conditions]

27 **4. PUBLIC HEALTH AND SAFETY**

- 28 (VI.A.4.1) The certificate holder shall take reasonable steps to reduce or manage human
29 exposure to electric and magnetic fields, including, but not limited to:
- 30 (a) Constructing all aboveground transmission lines at least 200 feet from
31 any residence or other occupied structure, measured from the centerline
32 of the transmission line;

- 1 (b) Fencing all areas near the facility substations to ensure that substation
2 equipment is not accessible to the public;
- 3 (c) Providing to landowners a map of underground and overhead
4 transmission lines on their property and advising landowners of possible
5 health risks; and
- 6 (d) Designing and maintaining all transmission lines so that alternating
7 current electric fields do not exceed 9 kV per meter at one meter above
8 the ground surface in areas accessible to the public.

9 (VI.A.4.2) In advance of, and during, preparation of detailed design drawings and
10 specifications for 230 kV, 500 kV, and 34.5 kV transmission lines, the certificate
11 holder shall consult with the Utility Safety and Reliability Section of the Oregon
12 Public Utility Commission to ensure that the designs and specifications are
13 consistent with applicable codes and standards.

14 (VI.A.4.3) Prior to start of construction, the certificate holder shall submit to ODOE a
15 procedure for coordinating, with all affected local electric service utilities and
16 transmission service providers, crane movements under electric transmission
17 lines during construction and maintenance of the facility. The procedure shall
18 address subjects including, but not limited to, minimum advance notification
19 prior to any crane movement under an electric transmission or distribution line,
20 protocols for determining adequate line clearance and specific crane path
21 locations. With the procedure, the certificate holder shall provide evidence of
22 concurrence by each affected electric service utility or transmission service
23 provider. The certificate holder shall ensure that all employees, construction
24 contractors and subcontractors adhere to this procedure throughout
25 construction and maintenance of the facility.

26 **VII. CONDITIONS REQUIRED BY COUNCIL RULES**

27 This section lists conditions required by OAR 345-027-0020 (Mandatory Conditions in Site
28 Certificates), OAR 345-027-0023 (Site Specific Conditions), OAR 345-027-0028 (Monitoring
29 Conditions), and OAR Chapter 345, Division 26 (Construction and Operation Rules for Facilities).
30 These conditions should be read together with the specific facility conditions listed in
31 Sections III, ~~IV~~, V, and VI to ensure compliance with the siting standards of OAR Chapter 345,
32 Divisions 22 and 24, and to protect the public health and safety. In these conditions, the
33 definitions in OAR 345-001-0010 apply.

34 The obligation of the certificate holder to report information to the Department or the Council
35 under the conditions listed in this section and in Sections III, ~~IV~~, V, and VI is subject to the
36 provisions of ORS 192.502 et seq. and ORS 469.560. To the extent permitted by law, the
37 Department and the Council will not publicly disclose information that may be exempt from
38 public disclosure if the certificate holder has clearly labeled such information and stated the
39 basis for the exemption at the time of submitting the information to the Department or the

1 Council. If the Department or the Council receives a request for the disclosure of the
2 information, the Department or the Council, as appropriate, will make a reasonable attempt to
3 notify the certificate holder and will refer the matter to the Attorney General for a
4 determination of whether the exemption is applicable, pursuant to ORS 192.450.

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

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

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

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

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

- 25 (a) Substantially as described in the site certificate;
- 26 (b) In compliance with the requirements of ORS Chapter 469, applicable
27 Council rules, and applicable state and local laws, rules and ordinances in
28 effect at the time the site certificate is issued; and
- 29 (c) In compliance with all applicable permit requirements of other state
30 agencies.

31 (VII.4) OAR 345-027-0020(4): The certificate holder shall begin and complete
32 construction of the facility by the dates specified in the site certificate. *[See*
33 *Conditions (III.D.1) and (111.D.2).]*

34 (VII.5) OAR 345-027-0020(5): Except as necessary for the initial survey or as otherwise
35 allowed for wind energy facilities, transmission lines or pipelines under this
36 section, the certificate holder shall not begin construction, as defined in OAR
37 345-001-0010, or create a clearing on any part of the site until the certificate

holder has construction rights on all parts of the site. For the purpose of this rule, “construction rights” means the legal right to engage in construction activities. For wind energy facilities, transmission lines or pipelines, if the certificate holder does not have construction rights on all parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-0010, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and:

- (a) The certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of the transmission line or pipeline occurs during the certificate holder’s negotiations to acquire construction rights on another part of the site; or
- (b) The certificate holder would construct and operate part of a wind energy facility on that part of the site even if other parts of the facility were modified by amendment of the site certificate or were not built.

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

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

(VII.8) OAR 345-027-0020(8): Before beginning construction of the facility, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility. *[See Condition IV.C.4.]*

(VII.9) OAR 345-027-0020(9): The certificate holder shall retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder shall retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder shall pay the actual cost to restore the site to a useful, non-hazardous

- 1 condition at the time of retirement, notwithstanding the Council’s approval in
2 the site certificate of an estimated amount required to restore the site.
- 3 (VII.10) OAR 345-027-0020(10): The Council shall include as conditions in the site
4 certificate all representations in the site certificate application and supporting
5 record the Council deems to be binding commitments made by the applicant.
- 6 (VII.11) OAR 345-027-0020(11): Upon completion of construction, the certificate holder
7 shall restore vegetation to the extent practicable and shall landscape all areas
8 disturbed by construction in a manner compatible with the surroundings and
9 proposed use. Upon completion of construction, the certificate holder shall
10 remove all temporary structures not required for facility operation and dispose
11 of all timber, brush, refuse and flammable or combustible material resulting
12 from clearing of land and construction of the facility.
- 13 (VII.12) OAR 345-027-0020(12): The certificate holder shall design, engineer and
14 construct the facility to avoid dangers to human safety presented by seismic
15 hazards affecting the site that are expected to result from all maximum probable
16 seismic events. As used in this rule “seismic hazard” includes ground shaking,
17 landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement
18 and subsidence.
- 19 (VII.13) OAR 345-027-0020(13): The certificate holder shall notify the Department, the
20 State Building Codes Division and the Department of Geology and Mineral
21 Industries promptly if site investigations or trenching reveal that conditions in the
22 foundation rocks differ significantly from those described in the application for a
23 site certificate. After the Department receives the notice, the Council may require
24 the certificate holder to consult with the Department of Geology and Mineral
25 Industries and the Building Codes Division and to propose mitigation actions.
- 26 (VII.14) OAR 345-027-0020(14): The certificate holder shall notify the Department, the
27 State Building Codes Division and the Department of Geology and Mineral
28 Industries promptly if shear zones, artesian aquifers, deformations or clastic
29 dikes are found at or in the vicinity of the site.
- 30 (VII.15) OAR 345-027-0020(15): Before any transfer of ownership of the facility or
31 ownership of the site certificate holder, the certificate holder shall inform the
32 Department of the proposed new owners. The requirements of OAR
33 345-027-0100 apply to any transfer of ownership that requires a transfer of the
34 site certificate.
- 35 (VII.16) OAR 345-027-0020(16): If the Council finds that the certificate holder has
36 permanently ceased construction or operation of the facility without retiring the
37 facility according to a final retirement plan approved by the Council, as described
38 in OAR 345-027-0110, the Council shall notify the certificate holder and request

1 that the certificate holder submit a proposed final retirement plan to the Office
2 within a reasonable time not to exceed 90 days. If the certificate holder does not
3 submit a proposed final retirement plan by the specified date, the Council may
4 direct the Department to prepare a proposed a final retirement plan for the
5 Council’s approval. Upon the Council’s approval of the final retirement plan, the
6 Council may draw on the bond or letter of credit described in OAR
7 345-027-0020(8) to restore the site to a useful, non-hazardous condition
8 according to the final retirement plan, in addition to any penalties the Council
9 may impose under OAR Chapter 345, Division 29. If the amount of the bond or
10 letter of credit is insufficient to pay the actual cost of retirement, the certificate
11 holder shall pay any additional cost necessary to restore the site to a useful, non-
12 hazardous condition. After completion of site restoration, the Council shall issue
13 an order to terminate the site certificate if the Council finds that the facility has
14 been retired according to the approved final retirement plan.

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

- 17 (a) The certificate holder shall design, construct and operate the
18 transmission line in accordance with the requirements of the 2012
19 Edition of the National Electrical Safety Code ~~2007 edition~~ approved on
20 June 3, 2001, by the American National Standards Institute; and
- 21 (b) The certificate holder shall develop and implement a program that
22 provides reasonable assurance that all fences, gates, cattle guards,
23 trailers, or other objects or structures of a permanent nature that could
24 become inadvertently charged with electricity are grounded or bonded
25 throughout the life of the line.

26 (Updated for Amendment No. 3)

27 (VII.18) OAR 345-027-0023(5): If the proposed energy facility is a pipeline or a
28 transmission line or has, as a related or supporting facility, a pipeline or
29 transmission line, the Council shall specify an approved corridor in the site
30 certificate and shall allow the certificate holder to construct the pipeline or
31 transmission line anywhere within the corridor, subject to the conditions of the
32 site certificate. If the applicant has analyzed more than one corridor in its
33 application for a site certificate, the Council may, subject to the Council’s
34 standards, approve more than one corridor.

35 (VII.19) OAR 345-027-0028: The following general monitoring conditions apply:

- 36 (a) The certificate holder shall consult with affected state agencies, local
37 governments and tribes and shall develop specific monitoring programs
38 for impacts to resources protected by the standards of divisions 22 and
39 24 of OAR Chapter 345 and resources addressed by applicable statutes,

- 1 administrative rules and local ordinances. The certificate holder must
2 submit the monitoring programs to the Department of Energy and
3 receive Department approval before beginning construction or, as
4 appropriate, operation of the facility.
- 5 (b) The certificate holder shall implement the approved monitoring
6 programs described in OAR 345-027-0028(1) and monitoring programs
7 required by permitting agencies and local governments.
- 8 (c) For each monitoring program described in OAR 345-027-0028(1) and (2),
9 the certificate holder shall have quality assurance measures approved by
10 the Department before beginning construction or, as appropriate, before
11 beginning commercial operation.
- 12 (d) If the certificate holder becomes aware of a significant environmental
13 change or impact attributable to the facility, the certificate holder shall,
14 as soon as possible, submit a written report to the Department describing
15 the impact on the facility and any affected site certificate conditions.

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

30 (VII.21) OAR 345-026-0080: The certificate holder shall report according to the following
31 requirements:

- 32 (a) General reporting obligation for energy facilities under construction or
33 operating:
- 34 (i) Within six months after beginning construction, and every six
35 months thereafter during construction of the energy facility and
36 related or supporting facilities, the certificate holder shall submit
37 a semiannual construction progress report to the Department of
38 Energy. In each construction progress report, the certificate
39 holder shall describe any significant changes to major milestones
40 for construction. The certificate holder shall include such

1 information related to construction as specified in the site
2 certificate. When the reporting date coincides, the certificate
3 holder may include the construction progress report within the
4 annual report described in OAR 345-026-0080.

5 (ii) By April 30 of each year after beginning construction, the
6 certificate holder shall submit an annual report to the Department
7 addressing the subjects listed in OAR 345-026-0080. The Council
8 Secretary and the certificate holder may, by mutual agreement,
9 change the reporting date.

10 (iii) To the extent that information required by OAR 345-026-0080 is
11 contained in reports the certificate holder submits to other state,
12 federal or local agencies, the certificate holder may submit
13 excerpts from such other reports to satisfy this rule. The Council
14 reserves the right to request full copies of such excerpted reports.

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

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

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

30 (iii) Fuel Use: For thermal power plants:

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

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

- 1 (iv) Status of Surety Information: Documentation demonstrating that
2 bonds or letters of credit as described in the site certificate are in
3 full force and effect and will remain in full force and effect for the
4 term of the next reporting period.
- 5 (v) Monitoring Report: A list and description of all significant
6 monitoring and mitigation activities performed during the
7 previous year in accordance with site certificate terms and
8 conditions, a summary of the results of those activities, and a
9 discussion of any significant changes to any monitoring or
10 mitigation program, including the reason for any such changes.
- 11 (vi) Compliance Report: A description of all instances of
12 noncompliance with a site certificate condition. For ease of
13 review, the certificate holder shall, in this section of the report,
14 use numbered subparagraphs corresponding to the applicable
15 sections of the site certificate.
- 16 (vii) Facility Modification Report: A summary of changes to the facility
17 that the certificate holder has determined do not require a site
18 certificate amendment in accordance with OAR 345-027-0050.
- 19 (viii) Nongenerating Facility Carbon Dioxide Emissions: For
20 nongenerating facilities that emit carbon dioxide, a report of the
21 annual fuel use by fuel type and annual hours of operation of the
22 carbon dioxide emitting equipment as described in OAR
23 345-024-0630(4).
- 24 (VII.22) OAR 345-026-0105: The certificate holder and the Department of Energy shall
25 exchange copies of all correspondence or summaries of correspondence related
26 to compliance with statutes, rules and local ordinances on which the Council
27 determined compliance, except for material withheld from public disclosure
28 under state or federal law or under Council rules. The certificate holder may
29 submit abstracts of reports in place of full reports; however, the certificate
30 holder shall provide full copies of abstracted reports and any summarized
31 correspondence at the request of the Department.
- 32 (VII.23) OAR 345-026-0170(1): The certificate holder shall notify the Department of
33 Energy within 72 hours of any occurrence involving the facility if:
- 34 (a) There is an attempt by anyone to interfere with its safe operation;
- 35 (b) A natural event such as an earthquake, flood, tsunami or tornado, or a
36 human-caused event such as a fire or explosion affects or threatens to
37 affect the public health and safety or the environment; or
- 38 (c) There is any fatal injury at the facility.

1 **VIII. SUCCESSORS AND ASSIGNS**

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

4 **IX. SEVERABILITY AND CONSTRUCTION**

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

9 **X. GOVERNING LAW AND FORUM**

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

12 **XI. EXECUTION**

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

15 **IN WITNESS WHEREOF**, this site certificate has been executed by the State of Oregon, acting by
16 and through its Energy Facility Siting Council, and by Golden Hills Wind Farm LLC.

17 ENERGY FACILITY SITING COUNCIL

GOLDEN HILLS WIND FARM LLC

18
19

20 By: _____
21 Barry Beyeler, Chair
22 Oregon Energy Facility Siting Council

By: _____
Print: _____

23

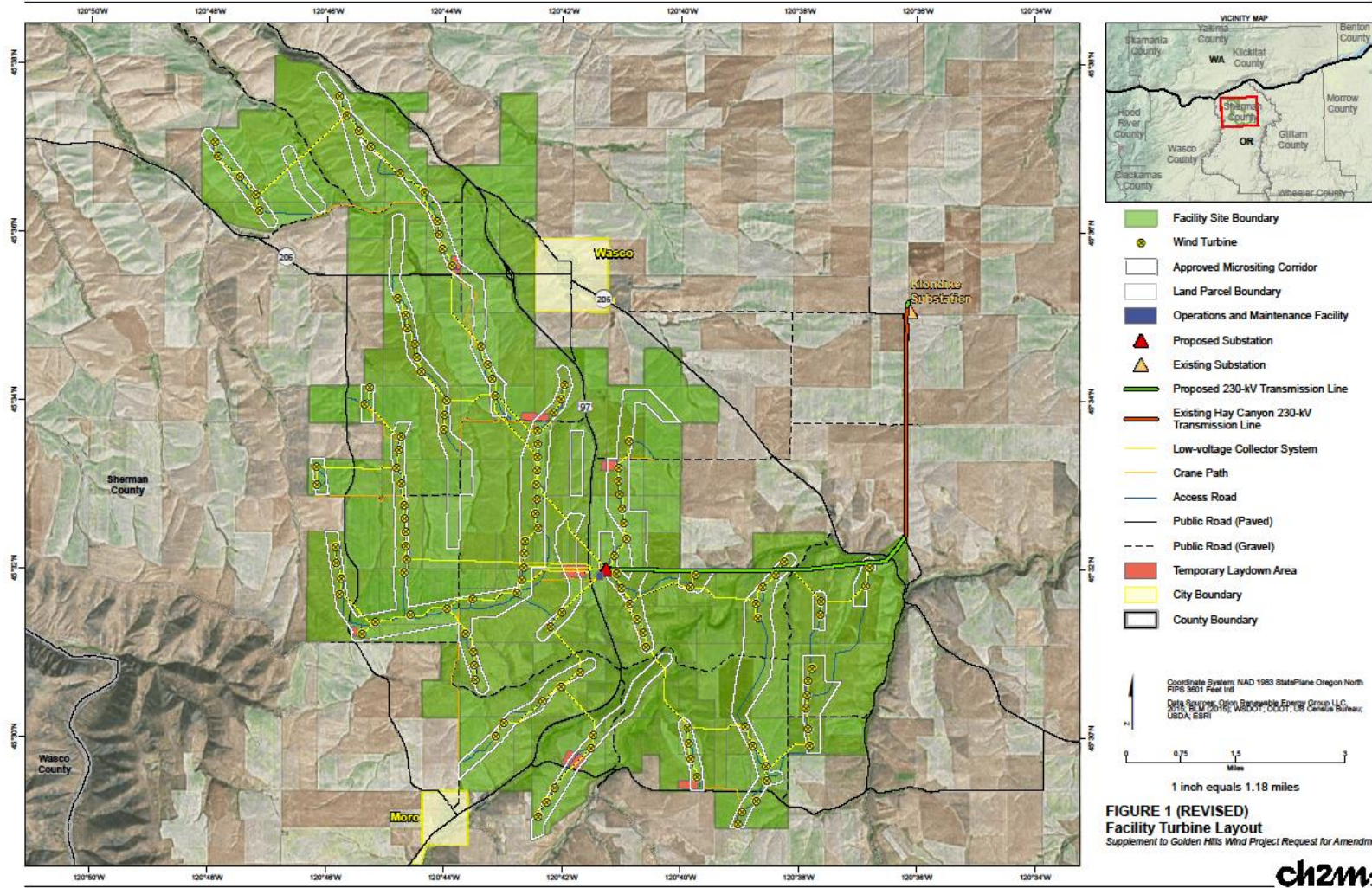
24 Date: _____

Date: _____

25

**ATTACHMENT A
SITE BOUNDARY MAP**

1
2
3
4
5
6
7
8
9
10
11
12
13



ATTACHMENT B
REQUEST FOR AMENDMENT COMMENT SUMMARY TABLE

Attachment B: Request for Amendment Comment Summary Table

Golden Hills Wind Project Request for Amendment #3 – Comment Summary Table				
Date Comment Received	Unique Record ID	Commenter Identification		
		Last Name	First Name	Organization
<i>Reviewing Agency Comments</i>				
2015-12-30	GH1AMD3Doc12	Griffin	Dennis	Oregon State Historic Preservation Office
2016-01-07	GH1AMD3Doc16	Caines	Jeff	Oregon Department of Aviation
2016-01-14	GH1AMD3Doc23	Farrow Ferman	Teara	Confederated Tribes of the Umatilla Indian Reservation
2015-12-29	GH1AMD3Doc4	Hartman	Heidi	Oregon Department of State Lands
2016-05-09	GH1AMD3Doc40	Hartman	Heidi	Oregon Department of State Lands
2016-03-04	GH1AMD3Doc30	Thompson	Jeremy	Oregon Department of Fish and Wildlife
2016-05-25	GH1AMD3Doc43	Thompson	Jeremy	Oregon Department of Fish and Wildlife
2016-05-31	GH1AMD3Doc45	Swecker	Mitch	Oregon Department of Aviation
<i>Special Advisory Group</i>				
2016-03-01	GH1AMD3Doc27	Macnab	Georgia	Sherman County Commissioners
2016-05-18	GH1AMD3Doc42	Macnab	Georgia	Sherman County Commissioners
<i>Members of the Public</i>				
2016-03-04	GH1AMD3Doc29	Gilbert	Irene	Friends of the Grande Ronde Valley

ATTACHMENT C
RAPTOR NEST SURVEY PROTOCOL (AS APPROVED IN JANUARY 2015 IN THE *FINAL ORDER ON*
***AMENDMENT NO. 2*)**



ENVIRONMENTAL & STATISTICAL CONSULTANTS

456 SW Monroe Ave, Suite 102, Corvallis, OR 97333
Phone: 541-230-1790 • www.west-inc.com • Fax: 307-637-6981

MEMORANDUM

Date: September 11, 2014
To: Golden Hills Wind Farm LLC
From: WEST, Inc.
Subject: Proposed raptor nest survey protocol for Golden Hills Wind Project

Introduction

Golden Hills Wind Farm LLC (Golden Hills) is in the process of requesting an extension of the site certificate for the Golden Hills Wind Project (GHWP) in Sherman County, OR. During review of the application to extend the site certificate, it was recommended by Oregon Department of Fish and Wildlife (ODFW) that additional raptor nest surveys be conducted prior to the start of construction utilizing currently recommended survey protocols to update the data gathered during previous surveys. Raptor nest surveys for the GHWP were last conducted in 2007 and covered the project area boundary and a 2-mile buffer, with an extended survey area to the east of the project along Grass Valley Canyon and the John Day River, which specifically targeted cliff nesting species such as golden eagles and peregrine falcons. This memo was prepared to summarize the proposed survey protocol that Golden Hills intends to implement at the GHWP to satisfy the recommendation of ODFW.

Proposed Raptor Nest Survey Methods

The objective of the raptor nest survey will be to locate nests of raptors that may be subject to disturbance and displacement effects from construction and operation of the GHWP. The initial raptor nest survey will be conducted prior to leaf out to enhance the ability of observers to located nests in deciduous trees and will be timed with the early courtship period for golden eagles. This means the initial survey will likely occur late January or early February. To better document nest occupancy at all nests located during the initial survey, a follow-up survey will be conducted later in the nesting season (~April) when most species should be actively incubating eggs or brooding young.

Nest surveys will be conducted from a helicopter flown at an altitude of tree-top level to approximately 250 ft (76 m) aboveground. Surveys will target all potential raptor nesting substrates, with an emphasis on tree and cliff nesting raptors, such as red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), great-horned owl (*Bubo virginianus*), golden



ENVIRONMENTAL & STATISTICAL CONSULTANTS

456 SW Monroe Ave, Suite 102, Corvallis, OR 97333
Phone: 541-230-1790 • www.west-inc.com • Fax: 307-637-6981

eagle (*Aquila chrysaetos*) and peregrine falcon (*Falcon peregrinus*). Other species that nest on the ground, or in cavities, will be recorded if observed, but will not be the focus of surveys as they are difficult to detect from the air. Systematic surveys for all raptor nests will be conducted within 2-miles of proposed turbine corridors, with additional surveys targeting golden eagle nests conducted out to a maximum of 10 miles from proposed turbine corridors. Per the USFWS Eagle Conservation Plan Guidance (ECP Guidance; USFWS 2013), if recent data (i.e., with the past 5 years) are available on spacing of occupied eagle nests for the project-area nesting population, the data may be used to delineate an appropriate survey area boundary, as described in Appendix H of the ECP Guidance. If recent survey data suggest a final survey area buffer that is less than 10 miles, it will be brought to the attention of the USFWS/ODFE prior to implementation.

The Oregon Eagle Foundation (OEF) has been conducting surveys for eagle nests and monitoring known golden eagle nests throughout Oregon for several years (Isaacs 2013). Prior to implementing surveys, OEF will be contacted regarding the location of known nesting sites and recent monitoring efforts in the vicinity of the GHWP. Coordination with OEF, and potentially others (e.g., ODFW, other developers), will be used to minimize survey overlap/duplication and reduce potential disturbance from survey efforts at known nest sites. To the extent practicable, surveys will follow the methods described in the USFWS Eagle Conservation Plan Guidance document (USFWS 2013). The initial survey will include a detailed search of all potentially suitable nesting substrates, while the second survey will only target nests identified during the initial survey. New nests identified while traveling between known sites will also be documented during the second survey.

When a nest is observed, the helicopter will be moved to a position where nest status and species present can be determined. Efforts will be made to minimize disturbance to breeding raptors; generally, the greatest possible distance at which the species can be identified will be maintained, with distances varying depending upon nest location and wind conditions. Data recorded for each nest location will include species occupying the nest, nest status (inactive, eggs present, incubating, young present, adult present, unknown, or other), nest substrate (tree, shrub, rocky outcrop, cliff, or power line), number of eggs or young present, time and date of observation, and the nest location (recorded with handheld GPS units). Locations of inactive nests will be recorded and mapped as they may be occupied during subsequent years.

References

- Isaacs, F.B. 2013. Golden eagles (*Aquila chrysaetos*) nesting in Oregon 2011-2013: Draft Annual Report, 31 December 2013. Oregon Eagle Foundation, Inc., Klamath Falls, Oregon. USA.
- US Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance. Module 1 - Land-Based Wind Energy. Version 2. Division of Migratory Bird Management, USFWS. April 2013. Available online at: [http://www.fws.gov/migratorybirds/Eagle Conservation Plan Guidance-Module%201.pdf](http://www.fws.gov/migratorybirds/Eagle%20Conservation%20Plan%20Guidance-Module%201.pdf)

ATTACHMENT D
WILDLIFE MONITORING AND MITIGATION PLAN (AS APPROVED MAY 2009 IN THE *FINAL*
***ORDER ON THE APPLICATION*)**

1
2
3 **GOLDEN HILLS WIND PROJECT**
4 **WILDLIFE MONITORING AND MITIGATION PLAN**
5

6 This plan describes wildlife monitoring that the certificate holder shall conduct during
7 operation of the Golden Hills Wind Project (GHWP).¹ The monitoring objectives are to
8 determine whether operation of the facility causes significant fatalities of birds and bats and to
9 determine whether the facility results in a loss of habitat quality. Golden Hills wind power
10 project consists of a number of turbine strings, with up to 267 turbines. Each turbine will likely
11 either be a 1.65 MW or 2.5 MW capacity turbine. Hub height of the turbines will be up to
12 approximately 80 (m) tall with a rotor diameter of either 82m (1.65 MW) or 96m (2.5 MW). Up
13 to six permanent meteorological towers will be built. The turbines will be linked by access roads
14 and a 34.5-kV transmission line. The 62-mile-long power collection system will be largely
15 underground, but might be overhead in some locations.
16

17 The certificate holder shall use experienced personnel to manage the monitoring required
18 under this plan and properly trained personnel to conduct the monitoring, subject to approval by
19 the Oregon Department of Energy (Department) as to professional qualifications. For all
20 components of this plan except the Raptor Nesting Surveys and the Wildlife Incident Response
21 and Handling System, the certificate holder shall direct a qualified independent third-party
22 biological monitor, as approved by the Department, to perform monitoring tasks.
23

24 The Wildlife Monitoring and Mitigation Plan for the GHWP has the following
25 components:
26

- 27 1) Fatality Monitoring Program including:
28 a) Removal Trials
29 b) Searcher Efficiency Trials
30 c) Fatality Monitoring Search Protocol
31 d) Statistical Analysis
32 2) Raptor Nesting Surveys
33 3) Avian Use and Behavior Surveys
34 4) Wildlife Incident Response and Handling System
35

36 Following is a discussion of the components of the monitoring plan, statistical analysis
37 methods for fatality data, data reporting and potential mitigation.
38

39 The selection of the mitigation actions that the certificate holder may be required to
40 implement under this plan should allow for flexibility in creating appropriate responses to
41 monitoring results that cannot be known in advance. If the Department determines that
42 mitigation is needed, the certificate holder shall propose appropriate mitigation actions to the

¹ This plan is incorporated by reference in the site certificate for the GHWP and must be understood in that context. It is not a “stand-alone” document. This plan does not contain all mitigation required of the certificate holder.

1 Department and shall carry out mitigation actions approved by the Department, subject to review
2 by the Oregon Energy Facility Council (Council).

3
4 **1. Fatality Monitoring**

5
6 (a) Definitions and Methods

7
8 Seasons

9
10 This plan uses the following dates for defining seasons:

11

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

12
13 Search Plots

14
15 The certificate holder shall conduct fatality monitoring within search plots. The
16 certificate holder, in consultation with the Oregon Department of Fish and Wildlife (ODFW),
17 will select search plots based on a systematic sampling design that ensures the selected search
18 plots are representative of the habitat in different parts of the site. Each search plot will contain
19 one turbine. Search plots will be square or circular. Circular search plots will be centered on the
20 turbine location and will have a radius equal to the maximum blade tip height of the turbine
21 contained within the plot. “Maximum blade tip height” is the turbine hub-height plus one-half
22 the rotor diameter. Square search plots will be of sufficient size to contain a circular search plot
23 as described above.

24
25 The certificate holder shall provide maps of the search plots to the Department and
26 ODFW before beginning fatality monitoring at the facility. The certificate holder will use the
27 same search plots for each search conducted during each monitoring year. During the second
28 monitoring year, new search plots will be selected from the turbines not sampled during the first
29 monitoring year.

30
31 Sample Size

32
33 The sample size for fatality monitoring is the number of turbines searched per monitoring
34 year. The certificate holder shall conduct fatality monitoring during the each monitoring year in
35 search plots at 1/3 of the turbines. If fewer than 150 turbines are built, GHWF shall monitor a
36 minimum of 50 turbines.

37
38 As described in Exhibit B of the ASC, GHWF may choose a combination of smaller
39 turbines with rotor diameter of 82 meters, or larger turbines with rotor diameter greater than 82
40 meters. If the final design of GHWP includes both large and small turbines, then GHWF shall,
41 before beginning fatality monitoring, consult with an independent expert with experience in

1 statistical analysis of avian fatality data to determine whether it would be possible to design a 50-
2 turbine sample with a sufficient number of turbines in each size class to allow statistical
3 comparison of fatality rates for all birds as a group. GHWF shall submit the expert's written
4 analysis to the Department. If the analysis shows that a comparison study is possible and if the
5 Department approves, GHWF shall sample the appropriate number of turbines in each class and
6 conduct the comparison study. GHWF may choose to sample more than 50 turbines in a each
7 monitoring year, if a larger sample size would allow the comparison study to be done.
8

9 Scheduling and Sampling Frequency

10
11 Fatality monitoring will begin upon the commencement of commercial operation of the
12 facility.
13

14 The first fatality monitoring year will commence on the first day of the month following
15 the commercial operation date of the facility and will conclude twelve months later (for example,
16 if commercial operation begins in October of 2008, the monitoring year will commence on
17 November 1, 2008, and conclude on October 31, 2009). Subsequent monitoring years will follow
18 the same schedule (for example, the second monitoring year would begin November 1 of the
19 year in which monitoring is performed, and conclude October 31 of the following year)
20

21 In each monitoring year, the certificate holder shall conduct fatality-monitoring searches
22 at the rates of frequency shown below. Over the course of one monitoring year, the certificate
23 holder would conduct 16 searches², as follows:
24

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)

25
26 Duration of Fatality Monitoring
27

28 GHWF shall perform one complete monitoring cycle during its first full year of
29 operation. At the end of the first year of monitoring, GHWF will report the results for joint
30 evaluation by ODOE, GHWF and ODFW. In the evaluation, results for GHWP will be compared
31 with the threshold table in section 1(g) of this plan, and with analogous fatality monitoring
32 results for Klondike III, Biglow Canyon, Combine Hills, Nine Canyon, Hopkins Ridge and, if
33 available, Leaning Juniper. Fatality monitoring results from other wind power facilities in the
34 Columbia Basin may also be included, if available. If fatality results for the first year of
35 monitoring at GHWP do not exceed any of the thresholds of concern and are within the range of
36 all results from the facilities listed above, then GHWF will perform its second year of monitoring
37 in year 5 of operations.
38

² GHWF may omit the searches on some turbines, if searches are not possible due to safety reasons .

1 Otherwise, GHWF shall propose additional mitigation within 6 months, for ODOE and
2 ODFW review. Alternately, GHWF may opt to perform a second year of fatality monitoring
3 immediately if it believes that the results of year 1 monitoring were anomalous. If GHWF takes
4 this option, then it will still perform the monitoring in year 5 of operations described above.
5

6 Meteorological Towers 7

8 The facility will most likely use non-guyed meteorological towers. Non-guyed towers are
9 known to cause little if any bird and bat mortality. Therefore, monitoring will not occur at non-
10 guyed meteorological towers. If the meteorological towers are guyed, the certificate holder shall
11 search all towers on the same monitoring schedule as fatality monitoring. The certificate holder
12 will use circular search plots. The radius of the circular search plots will extend a minimum of 5
13 meters beyond the most distant guy wire anchor point.
14

15 (b) Removal Trials 16

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

24 During the first year, the certificate holder shall conduct carcass removal trials within
25 each of the seasons defined above during the years in which fatality monitoring occurs. During
26 the first year in which fatality monitoring occurs, trials will occur in at least eight different
27 calendar weeks in a year, with at least one calendar week between starting dates. Trials will be
28 spread throughout the year to incorporate the effects of varying weather, farming practices and
29 scavenger densities. At least two trials will be started in each season. Each trial will use at least 6
30 carcasses. For each trial, 3 small bird carcasses and 3 large bird carcasses will be distributed in
31 cultivated agriculture habitat and 3 small bird carcasses and 3 large bird carcasses will be
32 distributed in non-cultivated habitat (grassland/shrub-steppe and CRP). In a year, approximately
33 48 carcasses will be placed in cultivated agriculture and 48 carcasses in non-cultivated
34 grassland/shrub-steppe and CRP for a total of about 96 trial carcasses. The number of removal
35 trials may be adjusted up or down during the second year of fatality monitoring, subject to
36 approval by the Department, if the certificate holder can demonstrate that the calculation of
37 fatality rates will continue to have statistical validity with the new sample size.
38

39 The “small bird” size class will use carcasses of house sparrows, starlings, commercially
40 available game bird chicks or legally obtained native birds to simulate passerines. The “large
41 bird” size class will use carcasses of raptors provided by agencies, commercially available adult
42 game birds or cryptically colored chickens to simulate raptors, game birds and waterfowl. If
43 fresh bat carcasses are available, they may also be used.
44

45 To avoid confusion with turbine-related fatalities, planted carcasses will not be placed in
46 fatality monitoring search plots. Planted carcasses will be placed in the vicinity of search plots

1 but not so near as to attract scavengers to the search plots. The planted carcasses will be located
2 randomly within the carcass removal trial plots.
3

4 Carcasses will be placed in a variety of postures to simulate a range of conditions. For
5 example, birds will be: 1) placed in an exposed posture (e.g., thrown over the shoulder), 2)
6 hidden to simulate a crippled bird (e.g., placed beneath a shrub or tuft of grass) and, 3) partially
7 hidden. Trial carcasses will be marked discreetly for recognition by searchers and other
8 personnel. Trial carcasses will be left at the location until the end of the carcass removal trial.
9

10 It is expected that carcasses will be checked as follows, although actual intervals may
11 vary. Carcasses will be checked for a period of 40 days to determine removal rates. They will be
12 checked about every day for the first 4 days, and then on day 7, day 10, day 14, day 20, day 30
13 and day 40. This schedule may vary depending on weather and coordination with the other
14 survey work. At the end of the 40-day period, the trial carcasses and scattered feathers will be
15 removed.
16

17 (c) Searcher Efficiency Trials 18

19 The objective of searcher efficiency trials is to estimate the percentage of bird and bat
20 fatalities that searchers are able to find. The certificate holder shall conduct searcher efficiency
21 trials on the fatality-monitoring search plots in both grassland/shrub-steppe and cultivated
22 agriculture habitat types. Searcher efficiency will be estimated by size class, habitat type, and
23 season. Estimates of searcher efficiency will be used to adjust carcass counts for detection bias.
24

25 Searcher efficiency trials will be conducted in each season as defined above, during the
26 years in which the fatality monitoring occurs. Trials will be spread throughout the year to
27 incorporate the effects of varying weather, farming practices and scavenger densities. At least
28 two trials will be conducted in each season. Each trial will use about 12 carcasses, although the
29 number will be variable so that the searcher will not know the total number of trial carcasses
30 being used in any trial. For each trial, both small bird and large bird carcasses will be used in
31 about equal numbers. “Small bird” and “large bird” size classes and carcass selection are as
32 described above for the removal trials. An equal proportion of the trial carcasses will be
33 distributed in cultivated agriculture habitat and in non-cultivated habitat (grassland/shrub steppe
34 and CRP). In a year, about 48 carcasses will be placed in cultivated agriculture and about 48 in
35 non-cultivated grassland/shrub steppe and CRP for a total of about 96 trial carcasses. The
36 number of searcher efficiency trials may be reduced to one per season during the second year of
37 fatality monitoring, subject to approval by the Department, if the certificate holder can
38 demonstrate that the calculation of fatality rates will continue to have statistical validity with the
39 reduced sample size.
40

41 Personnel conducting searches will not know in advance when trials are conducted; nor
42 will they know the location of the trial carcasses. If suitable trial carcasses are available, trials
43 during the fall season will include several small brown birds to simulate bat carcasses. Legally
44 obtained bat carcasses will be used if available.
45

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

5
6 Searcher efficiency trials will be spread over the entire season to incorporate effects of
7 varying weather and vegetation growth. Carcasses will be placed in a variety of postures to
8 simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture
9 (thrown over the shoulder), 2) hidden to simulate a crippled bird and 3) partially hidden.

10
11 Each non-domestic carcass will be discreetly marked so that it can be identified as an
12 efficiency trial carcass after it is found. The number and location of the efficiency trial carcasses
13 found during the carcass search will be recorded. The number of efficiency trial carcasses
14 available for detection during each trial will be determined immediately after the trial by the
15 person responsible for distributing the carcasses.

16
17 If new searchers are brought into the search team, additional detection trials will be
18 conducted to ensure that detection rates incorporate searcher differences. If GHWF does not
19 perform a second year of monitoring until the 5th year of operation, then searcher efficiency and
20 removal trials shall be repeated to ensure that the removal and detection rates used to estimate
21 overall fatalities account for new searchers and changed predation or scavenger behavior
22 patterns.

23
24 (d) Coordination with the other Wind Projects

25
26 It is anticipated that other wind projects in Sherman County may be monitored at the
27 same time that Golden Hills is monitored. If these projects are permitted through EFSEC, they
28 will require similar wildlife monitoring. Subject to the approval of both certificate holders and
29 the Department, the number of trials at each site and the number of trial carcasses used at each
30 site can be reduced by combining the removal data and efficiency data from multiple facilities, if
31 the certificate holder can demonstrate that the calculation of fatality rates will continue to have
32 statistical validity for both facilities and that combining the data will not affect any other
33 requirements of the monitoring plans for either facility.

34
35 (e) Fatality Monitoring Search Protocol

36
37 The objective of fatality monitoring is to estimate the number of bird and bat fatalities
38 that are attributable to facility operation and associated variances. The certificate holder shall
39 conduct fatality monitoring using standardized carcass searches.

40
41 The certificate holder shall use a worst-case analysis to resolve any uncertainty in the
42 results and to determine whether the data indicate that additional mitigation should be
43 considered. The Department may require additional, targeted monitoring if the data indicate the
44 potential for significant impacts that cannot be addressed by worst-case analysis and appropriate
45 mitigation.

1 The certificate holder shall estimate the number of avian and bat fatalities attributable to
2 operation of the facility based on the number of avian and bat fatalities found at the facility site.
3 All carcasses located within areas surveyed, regardless of species, will be recorded and, if
4 possible, a cause of death determined based on blind necropsy results. If a different cause of
5 death is not apparent, the fatality will be attributed to facility operation. The total number of
6 avian and bat carcasses will be estimated by adjusting for removal and searcher efficiency bias.
7

8 Personnel trained in proper search techniques (“the searchers”) will conduct the carcass
9 searches by walking parallel transects within the search plots.³ Transects will be initially set at 6
10 meters apart in the area to be searched. A searcher will walk at a rate of about 45 to 60 meters
11 per minute along each transect searching both sides out to three meters for casualties. Search area
12 and speed may be adjusted by habitat type after evaluation of the first searcher efficiency trial.
13 The searchers will record the condition of each carcass found, using the following condition
14 categories:
15

- 16 § Intact – a carcass that is completely intact, is not badly decomposed and shows no
17 sign of being fed upon by a predator or scavenger
- 18 § Scavenged – an entire carcass that shows signs of being fed upon by a predator or
19 scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains, legs,
20 pieces of skin, etc.)
- 21 § Feather Spot – 10 or more feathers at one location indicating predation or scavenging
22 or 2 or more primary feathers
23

24 All carcasses (avian and bat) found during the standardized carcass searches will be
25 photographed as found, recorded and labeled with a unique number. Distance from observer to
26 the carcass will be measured (to the nearest 0.25 meters), as will the perpendicular distance from
27 the transect line to the carcass. Each carcass will be bagged and frozen for future reference and
28 possible necropsy. A copy of the data sheet for each carcass will be kept with the carcass at all
29 times. For each carcass found, searchers will record species, sex and age when possible, date and
30 time collected, location, condition (e.g., intact, scavenged, feather spot) and any comments that
31 may indicate cause of death. Searchers will map the find on a detailed map of the search area
32 showing the location of the wind turbines and associated facilities such as power lines. The
33 certificate holder shall coordinate collection of state endangered, threatened, sensitive or other
34 state protected species with ODFW. The certificate holder shall coordinate collection of
35 federally-listed endangered or threatened species and Migratory Bird Treaty Act protected avian
36 species with the U.S. Fish and Wildlife Service (USFWS). The certificate holder shall obtain
37 appropriate collection permits from ODFW and USFWS.
38

39 The searchers might discover carcasses incidental to formal carcass searches (e.g., while
40 driving within the project area). For each incidentally discovered carcass, the searcher shall
41 identify, photograph, record data and collect the carcass as would be done for carcasses within
42 the formal search sample during scheduled searches
43

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

1 If the incidentally discovered carcass is found within a formal search plot, the fatality
2 data will be included in the calculation of fatality rates. If the incidentally discovered carcass is
3 found outside a formal search plot, the data will be reported separately.
4

5 The certificate holder shall coordinate collection of incidentally discovered state
6 endangered, threatened, sensitive or other state protected species with ODFW. The certificate
7 holder shall coordinate collection of incidentally discovered federally-listed endangered or
8 threatened species and Migratory Bird Treaty Act protected avian species with the USFWS.
9

10 The certificate holder shall develop and follow a protocol for handling injured birds. Any
11 injured native birds found on the facility site will be carefully captured by a trained project
12 biologist or technician and transported to Jean Cypher (wildlife rehabilitator) in The Dalles, the
13 Blue Mountain Wildlife Rehabilitation Center in Pendleton or the Audubon Bird Care Center in
14 Portland in a timely fashion.⁴ The certificate holder shall pay costs, if any are charged, for time
15 and expenses related to care and rehabilitation of injured native birds found on the site, unless
16 the cause of injury is clearly demonstrated to be unrelated to the facility operations.
17

18 (f) Statistical Methods for Fatality Estimates

19

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

- 21
- 22 (1) The observed number of carcasses found during standardized searches during the two
23 monitoring years for which the cause of death is attributed to the facility.⁵
24
 - 25 (2) Searcher efficiency expressed as the proportion of planted carcasses found by
26 searchers.
27
 - 28 (3) Non-removal rates expressed as the estimated average probability a carcass is
29 expected to remain in the study area and be available for detection by the searchers
30 during the entire survey period.
31

32 Definition of Variables

33

34 The following variables are used in the equations below:

- 35 c_i the number of carcasses detected at plot i for the study period of interest (e.g., one
36 year) for which the cause of death is either unknown or is attributed to the facility
37 n the number of search plots
38 k the number of turbines searched (includes the turbines centered within each
39 search plot and a proportion of the number of turbines adjacent to search plots to
40 account for the effect of adjacent turbines on the 90-meter search plot buffer area)
41 \bar{c} the average number of carcasses observed per turbine per year
42 s the number of carcasses used in removal trials
43 s_c the number of carcasses in removal trials that remain in the study area after 40
44 days

⁴ The people and centers listed here may be changed with Department approval.

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

1	se	standard error (square of the sample variance of the mean)
2	t_i	the time (days) a carcass remains in the study area before it is removed
3	\bar{t}	the average time (days) a carcass remains in the study area before it is removed
4	d	the total number of carcasses placed in searcher efficiency trials
5	p	the estimated proportion of detectable carcasses found by searchers
6	I	the average interval between searches in days
7	$\hat{\rho}$	the estimated probability that a carcass is both available to be found during a
8		search and is found
9	m_t	the estimated annual average number of fatalities per turbine per year, adjusted
10		for removal and observer detection bias
11	C	nameplate energy output of turbine in megawatts (MW)

12

13 Observed Number of Carcasses

14

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

16

17
$$\bar{c} = \frac{\sum_{i=1}^n c_i}{k} . \tag{1}$$

18

19 Estimation of Carcass Removal

20

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

24

25
$$\bar{t} = \frac{\sum_{i=1}^s t_i}{s - s_c} . \tag{2}$$

26

27 This estimator is the maximum likelihood estimator assuming the removal times follow an
 28 exponential distribution and there is right-censoring of data. Any trial carcasses still remaining at
 29 40 days are collected, yielding censored observations at 40 days. If all trial carcasses are
 30 removed before the end of the trial, then s_c is 0, and \bar{t} is just the arithmetic average of the
 31 removal times. Removal rates will be estimated by carcass size (small and large) and season.

32

33 Estimation of Observer Detection Rates

34

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

38

39 Estimation of Facility-Related Fatality Rates

40

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

$$2 \quad m_t = \frac{\bar{c}}{\hat{\rho}}, \quad (3)$$

4 where $\hat{\rho}$ includes adjustments for both carcass removal (from scavenging and other means) and
5 observer detection bias assuming that the carcass removal times t_i follow an exponential
6 distribution unless a different assumption about carcass removal is made with the approval of the
7 Department. Under these assumptions, this detection probability is estimated by:

$$8 \quad \hat{\rho} = \frac{\bar{t} \times p}{I} \times \frac{\exp\left(\frac{I}{\bar{t}}\right) - 1}{\exp\left(\frac{I}{\bar{t}}\right) - 1 + p} \quad (4)$$

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

$$12 \quad m = \frac{m_t}{C}. \quad (5)$$

13
14
15 The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds,
16 (3) large birds, (4) raptors, (5) target grassland birds, (6) nocturnal avian migrants, 7) avian State
17 Sensitive Species listed under OAR 635-100-0040, and 8) bats. The final reported estimates of
18 m , associated standard errors and 90% confidence intervals will be calculated using
19 bootstrapping (Manly 1997). Bootstrapping is a computer simulation technique that is useful for
20 calculating point estimates, variances and confidence intervals for complicated test statistics. For
21 each iteration of the bootstrap, the plots will be sampled with replacement, trial carcasses will be
22 sampled with replacement and \bar{c} , \bar{t} , p , $\hat{\rho}$ and m will be calculated. A total of 5,000 bootstrap
23 iterations will be used. The reported estimates will be the means of the 5,000 bootstrap estimates.
24 The standard deviation of the bootstrap estimates is the estimated standard error. The lower 5th
25 and upper 95th percentiles of the 5000 bootstrap estimates are estimates of the lower limit and
26 upper limit of 90% confidence intervals.

27 Nocturnal Migrant and Bat Fatalities

28
29 Differences in observed nocturnal avian migrant and bat fatality rates for lit turbines,
30 unlit turbines that are adjacent to lit turbines, and unlit turbines that are not adjacent to lit
31 turbines will be compared graphically and statistically.

32 (g) Mitigation

33
34 Mitigation may be appropriate if analysis of the fatality data collected after the first
35 monitoring year shows fatality rates for avian species that exceed a threshold of concern. For the
36 purpose of determining whether a threshold has been exceeded, the certificate holder shall
37 calculate the average annual fatality rates for the species groups after the initial two years of

1 monitoring. Based on current knowledge of the species that are likely to use the habitat in the
 2 area of the facility, the following thresholds apply to the GHWP:
 3

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
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

4
 5 Before the end of the first monitoring year, GHWF shall form a technical advisory
 6 committee (TAC) that will include at least GHWF, ODOE and ODFW. Other stakeholders, such
 7 as USFWS, may also serve on the TAC. The TAC shall consider the fatality monitoring results
 8 from Klondike III, Biglow Canyon, Nine Canyon, Leaning Juniper, Hopkins Ridge, Combine
 9 Hills, and other wind projects in Sherman County if available, and determine if the thresholds
 10 should be adjusted.

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

22
 23 The certificate holder shall implement mitigation as approved by the Council. The
 24 Department may recommend additional, targeted data collection if the need for mitigation is
 25 unclear based on the information available at the time. The certificate holder shall implement
 26 such data collection as approved by the Council.

1
2 Mitigation shall be designed to benefit the affected species group. Mitigation may
3 include, but is not limited to, protection of nesting habitat for the affected group of native species
4 through a conservation easement or similar agreement. Tracts of land that are intact and
5 functional for wildlife are preferable to degraded habitat areas. Preference should be given to
6 protection of land that would otherwise be subject to development or use that would diminish the
7 wildlife value of the land. In addition, mitigation measures might include: enhancement of the
8 protected tract by weed removal and control; increasing the diversity of native grasses and forbs;
9 planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for
10 raptors; reducing cattle grazing; improving wildfire response; and local research that would aid
11 in understanding more about the species and conservation needs.

12
13 If the threshold for bats species as a group is exceeded, the certificate holder shall
14 contribute to Bat Conservation International or to a Pacific Northwest bat conservation group
15 (\$10,000 per year for three years) to fund new or ongoing research in the Pacific Northwest to
16 better understand impacts to the bat species impacted by the facility and to develop possible
17 ways to reduce impacts to the affected species.

18
19 In addition, mitigation may be appropriate if fatality rates for a State Sensitive bat species
20 listed under OAR 635-100-0040 are higher than expected and at a level of concern. If the data
21 show that a threshold of concern for a species group has been exceeded or that the fatality rate
22 for any individual species is at a level of concern, mitigation shall be required if the Department
23 determines that mitigation is appropriate based on analysis of the data and any other significant
24 information available at the time. If mitigation is appropriate, the certificate holder, in
25 consultation with ODFW, shall propose mitigation measures designed to benefit the affected
26 species. The certificate holder shall implement mitigation as approved by the Council.

27 28 **2. Raptor Nest Surveys**

29
30 The objectives of raptor nest surveys are to estimate the size of the local breeding
31 populations of tree or other above-ground-nesting raptor species in the vicinity of the facility and
32 to determine whether operation of the facility results in a reduction of nesting activity or nesting
33 success in the local populations of the following raptor species: Swainson's hawk, ferruginous
34 hawk and golden eagle. The certificate holder shall direct a qualified biologist, approved by the
35 Department, to conduct the raptor nest surveys. The certificate holder may select other qualified
36 biologists to conduct the raptor nest surveys, subject to Department approval.

37 38 (a) Survey Protocol

39
40 For the species listed above, aerial and ground surveys will be used to gather nest success
41 data on active nests, nests with young and young fledged. The certificate holder will share the
42 data with state and federal biologists. The certificate holder shall conduct two years of post-
43 construction raptor nest surveys for the completed facility during the sensitive nesting and
44 breeding season. One year of post-construction surveys will be done in the first nesting season
45 after construction is completed. The second year of post-construction surveys will be done at a
46 time recommended by the certificate holder and approved by the Department. The certificate

1 holder may collaborate with other certificate holders in the vicinity of the facility in the
2 development of useful information about future impacts on raptor nesting activity and nesting
3 success.

4
5 Prior to the raptor nesting surveys, the certificate holder shall review the locations of
6 known raptor nests based on the GHWP, the Biglow Canyon Wind Farm and Klondike Wind
7 Project pre-construction surveys as well as any nest survey data collected after construction. All
8 known nest sites and any new nests observed within the GCWF site and within two miles of the
9 GHWP site will be given identification numbers. Nest locations will be recorded on U.S.
10 Geological Survey 7.5-minute quadrangle maps. Global positioning system coordinates will be
11 recorded for each nest and integrated with the baseline database. Locations of inactive nests will
12 also be recorded as they may become occupied during future years.

13
14 During each raptor nesting monitoring year, the certificate holder shall conduct a
15 minimum of one helicopter survey in late May or early June within the GHWP site and a 2-mile
16 zone around the turbines to determine nest occupancy. Determining nest occupancy will likely
17 require two visits to each nest: The second visit may be done by air or by ground as appropriate.
18 For occupied nests of the species identified above, the certificate holder shall determine nesting
19 success by a minimum of one ground visit to determine species, number of young and nesting
20 success. "Nesting success" means that the young have successfully fledged (the young are
21 independent of the core nest site). Nests that cannot be monitored due to the landowner denying
22 access will be checked from a distance where feasible.

23
24 (b) Mitigation

25
26 The certificate holder shall analyze the raptor nesting data collected after two monitoring
27 years to determine whether a reduction in either nesting success or nest use has occurred in the
28 vicinity of the GHWP. If the analysis indicates a reduction in nesting success by Swainson's
29 hawk, ferruginous hawk or golden eagle within two miles of the facility (including the area
30 within the GHWP site), then the certificate holder shall propose appropriate mitigation and shall
31 implement mitigation as approved by the Council. At a minimum, if the analysis shows that any
32 of these species has abandoned a nest territory within the facility site or within ½ mile of the
33 facility site, or has not fledged any young over the two survey years within the facility site or
34 within ½ mile of the facility site, the certificate holder shall assume the abandonment or
35 unsuccessful fledging is the result of the facility unless another cause can be demonstrated
36 convincingly. If the GHWP facility and the Klondike III facility are both required to provide
37 mitigation for the same nest, the two certificate holders shall coordinate the required mitigation
38 with the approval of the Department.

39
40 Given the very low buteo nesting densities in the area, statistical power to detect a
41 relationship between distance from a wind turbine and nesting parameters (*e.g.*, number of
42 fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged
43 based on trends in the data, results from other wind energy facility monitoring studies and
44 literature on what is known regarding the populations in the region.

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

12 13 (c) Long-term Raptor Nest Monitoring and Mitigation 14

15 In addition to the two years of post-construction raptor nest surveys described in
16 subsection (a), GHWF shall conduct long-term raptor nest surveys at five year intervals for the
17 life of the facility. GHWF shall conduct the first long-term raptor nest survey in the ninth year
18 after construction is completed. In conducting long-term surveys, GHWF shall follow the same
19 survey protocols as described above in subsection (a) unless GHWF proposes an alternative
20 protocol that is approved by the Department. In developing an alternative protocol, GHWF shall
21 consult with ODFW.
22

23 GHWF shall analyze the raptor nesting data collected after each year of long-term raptor
24 nest surveys to determine whether a reduction in either nesting success or nest use has occurred
25 in the vicinity of the GHWP. If the analysis indicates a reduction in nesting success or nest use
26 by Swainson's hawks, golden eagles, or ferruginous hawks within the facility site or within 2
27 miles of the site, then GHWF shall propose appropriate mitigation for the affected species as
28 described in subsection (b) and shall implement mitigation as approved by the Council. At a
29 minimum, if the analysis shows that any raptors of these species have abandoned a nest territory
30 within the facility site or within ½ mile of the facility site or has not fledged any young within
31 that same area, GHWF shall assume the abandonment or unsuccessful fledging is due to
32 operation of the facility unless another cause can be demonstrated convincingly.
33

34 Any reduction in nesting success or nest use could be due to operation of the GHWP
35 facility, operation of another wind facility in the vicinity or some other cause. GHWF shall
36 attribute the reduction to operation of GHWP if the wind turbine closest to the affected nest site
37 is a GHWP turbine unless GHWF demonstrates, and the Department agrees, that the reduction
38 was due to a different cause.
39

40 Given the low raptor nesting densities in the area, statistical power to detect a relationship
41 between distance from a wind turbine and nesting parameters (e.g. number of fledglings per
42 reproductive pair) will be very low. Therefore, impacts may have to be judged based on trends in
43 the data, results from other wind energy facility monitoring studies and literature on what is
44 known regarding the population in the region.
45

46 **3. Avian Use and Behavior Surveys**

1
2 Searchers will also record bird species observed and their behavior relative to turbine
3 locations before or after each standardized carcass search (as described in Section 1(e) above).
4 Observations will be recorded during 5-minute surveys at each turbine sampled during the
5 fatality-monitoring program, using standard variable circular plot point count survey methods.
6 Collection and recording of these additional observations of live birds will be carried out in a
7 manner that does not distract searchers from carrying out the standardized carcass searches.
8

9 All of these avian use and behavior data, as well as raptor and waterfowl mortality
10 observed at the turbines near these stations, will be used to understand direct and indirect impacts
11 of the GHWP facility on raptors, waterfowl and other avian species. The certificate holder shall
12 include an analysis of this data in the reports described in Section 5.
13

14 **4. GHWP Wildlife Incident Response and Handling System**

15
16 The Wildlife Incident Response and Handling System is a monitoring program set up for
17 responding to and handling avian and bat casualties found by construction and maintenance
18 personnel during construction and operation of the facility. This monitoring program includes the
19 initial response, the handling and the reporting of bird and bat carcasses discovered incidental to
20 construction and maintenance operations (“incidental finds”). Construction and maintenance
21 personnel will be trained in the methods needed to carry out this program.
22

23 All carcasses discovered by construction or maintenance personnel will be photographed,
24 recorded and collected.
25

26 If construction or maintenance personnel find carcasses within the plots for protocol
27 searches, they will notify a qualified biologist, as approved by the Department, who will collect
28 the carcasses. The fatality data will be included in the calculation of fatality rates.
29

30 If construction or maintenance personnel discover incidental finds that are not within
31 plots for fatality monitoring protocol searches, they will notify a qualified biologist, as approved
32 by the Department, and the carcass will be collected by a carcass-handling permittee (a person
33 who is listed on state and federal scientific or salvage collection permits). Data for these
34 incidental finds will be reported separately from standardized fatality monitoring data.
35

36 The certificate holder shall coordinate collection of state endangered, threatened,
37 sensitive or other state protected species with ODFW. The certificate holder shall coordinate
38 collection of federally-listed endangered or threatened species and Migratory Bird Treaty Act
39 protected avian species with the USFWS.
40

41 **5. Data Reporting**

42
43 The certificate holder will report the monitoring data and analysis to the Department.
44 Monitoring data include fatality monitoring program data, raptor nest survey data, avian use and
45 behavior survey data and data on incidental finds by fatality searchers and GHWF personnel.
46 The report may be included in the annual report required under OAR 345-026-0080 or may be

1 submitted as a separate document at the same time the annual report is submitted. In addition, the
2 certificate holder shall provide to the Department any data or record generated in carrying out
3 this monitoring plan upon request by the Department.
4

5 The certificate holder shall immediately notify USFWS and ODFW, respectively, in the
6 event that any federal or state endangered or threatened species are killed or injured on the
7 facility site.
8

9 The public will have an opportunity to receive information about monitoring results and
10 to offer comment. Within 30 days after receiving the annual report of monitoring results, the
11 Department will make the report available to the public on its website and will specify a time in
12 which the public may submit comments to the Department.⁶
13

14 **6. Amendment of the Plan**

15

16 This Wildlife Monitoring and Mitigation Plan may be amended from time to time by
17 agreement of the certificate holder and the Council. Such amendments may be made without
18 amendment of the site certificate. The Council authorizes the Department to agree to
19 amendments to this plan and to mitigation actions that may be required under this plan. The
20 Department shall notify the Council of all amendments and mitigation actions, and the Council
21 retains the authority to approve, reject or modify any amendment of this plan or mitigation action
22 agreed to by the Department.
23
24

⁶ 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.

ATTACHMENT E
DRAFT HABITAT MITIGATION AND REVEGETATION PLAN (AS APPROVED MAY 2009 IN THE
***FINAL ORDER ON THE APPLICATION*)**

Golden Hills Wind Project: Habitat Mitigation & Revegetation Plan

1.0 Introduction

BPAE is proposing to construct a wind power project in Sherman County, Oregon. The potential turbine strings are spread along ridgecrests located approximately 2.5 miles (mi.) northeast of the town of Wasco, Oregon. In addition to the turbine strings, additional facilities such as access roads, underground and overhead transmission lines, and a substation are being constructed to implement the project.

In the Energy Facility Application for a Site Certificate (Application) for the project, BPAE agreed to mitigate impacts associated with the loss of native shrub-steppe habitats and Conservation Reserve Program (CRP) lands. The goal for temporarily disturbed areas (such as road shoulders, underground electric cable trenches, and the temporarily disturbed area around tower sites) is to return the disturbed habitat to pre-construction (or better) conditions.

In addition to areas temporarily disturbed during construction of the project, certain areas will be permanently affected by the placement of project facilities for the life of the project. These permanently disturbed areas include the location of new or widened roads, the area under tower bases, and the substation area.

Based on the pre-construction estimates, approximately 0.91 acres of Category 2 habitat, 10.29 acres of Category 3 and 0.97 acres of Category 4 habitat will be permanently disturbed and will require mitigation. Thus, 12.17 acres of Category 2, 3 or 4 habitat will be enhanced or created. In practice this will result in a mitigation ratio slightly greater than 1:1 because expected impacts are less than the maximum possible impacts used in the pre-construction estimates. Approximately 127 acres of cultivated agriculture land may be impacted by permanent facilities. Impacts to the agriculture land will be mitigated by:

- Developing a noxious weed control plan following guidelines based upon consultation with the Sherman County Soil and Water Conservation District and ODFW. The noxious weed control plan will be approved by ODOE and finalized prior to construction.
- The noxious weed control plan will be implemented utilizing Best Management Practices (BMPs) to minimize topsoil loss, and complying with an erosion and sedimentation control plan approved by DEQ as part of the NPDES program in areas adjacent to drainage features.
- Sherman County Soil and Water Conservation District will be consulted for proper procedures for restoring agricultural quality to its original condition.

To achieve these habitat mitigation objectives, this plan has been prepared to guide revegetation efforts. Seed mixes, planting methods, and weed control techniques have been developed specifically for the project area through consultations with the affected agencies, reviews of current literature, and site visits by revegetation specialists. The plan also specifies monitoring

procedures to evaluate the success of revegetation efforts, including recommended remediative action should initial revegetation efforts prove unsuccessful in some areas.

2.0 Project Description

The Project will be located on private land in an unincorporated area of Sherman County. The Project will interconnect with the Bonneville Power Administration's (BPA) transmission system at two locations; one near Klondike Schoolhouse Substation (200 MW) and one at John Day Substation (200 MW). Transmission from the project substations to the interconnection points will involve one 4-mile long overhead transmission line and one 11-mile long overhead transmission line.

Golden Hills wind power project will consist of a number of turbine strings, with up to 267 turbines. Each turbine will likely either be a 1.65 MW or 2.5 MW capacity turbine. Hub height of the turbines will be up to approximately 80 m tall with a rotor diameter of either 82 m (1.65 MW) or 96 m (2.5 MW). Up to six permanent meteorological towers will be built. The turbines will be linked by access roads and a 34.5-kV transmission line. The 62-mile long power collection system will be largely underground, but might be overhead in some locations.

Two project substations may be built. In addition, an operations and maintenance (O&M) facility (including a shop), a control room, a maintenance yard, a kitchen, an office, a washroom, and other provisions typical of this type of facility, will be built.

This project will convert approximately 141 total acres to permanent structures and roads. Other facilities which will permanently disturb habitat include turnaround areas, substation sites, and transmission line pole bases. Less than 10% of the permanent habitat impacts will occur to CRP grassland, and native grassland and shrub-steppe habitats; the remainder of the impact will occur on cultivated land.

It will also be necessary to temporarily disturb additional areas during construction of the project. Laydown areas and equipment work areas at the tower sites will be needed to construct the turbines. Construction of access roads will also require the temporary disturbance of habitat in addition to permanent disturbance of the roadbed. Construction of powerlines, both above and below ground, will also temporarily impact habitat. For the underground lines, temporary impacts are similar to pipeline installation, while for the overhead lines, disturbance is primarily limited to the tower bases. Additionally, miscellaneous facilities such as staging areas, parking lots, and turnouts will be constructed on a temporary basis. In total, it is estimated that 1074.5 acres will be temporarily disturbed during construction; 746.2 acres of that area will be on land used for agriculture.

3.0 Site Setting

3.1 Physiography, Geology, and Soils

The turbine string sites are located on ridgetops that run along northeast-southwest lines, as well as on flat terrain. Topography in the facility area is characterized by gently rolling hills with slopes from 0° to 70°. Steeper topography is associated with the Grass Valley Canyon and associated side drainages. Elevations of the turbines strings ranges from 1,066 ft. to 2,201 ft (325 m to 671 m) above mean sea level. Soils within the project area are primarily deep, well-drained loams, and are used to cultivate small grains and hay or for livestock grazing (Macdonald et al. 1999).

3.2 Climate

Sherman County averages 11.11 inches (in.) of precipitation annually, most of which falls from October through March. Average winter snowfall is 18.9 in. The average air temperature in winter is 32.9° F and the average summer temperature is 65.4° F (Macdonald et al. 1999).

3.3 Landcover/General Vegetation

Land coverages in the project area consist primarily of cultivated agriculture (dryland wheat; 83%), followed by shrub-steppe/grassland (10%) and Conservation Reserve Program (CRP) grassland (4%), with less than 2% each of developed, riparian tree, riparian-intermittent stream (IS), upland tree, and Conservation Reserve Enhancement Program (CREP) habitats.

Vegetation communities in the project vicinity are primarily bunchgrass and shrub-steppe associations including some historic climax communities. Grasses include: bluebunch wheatgrass (*Pseudoroegneria spicata* ssp. *spicata*), Idaho fescue (*Festuca idahoensis*), and Sandberg bluegrass (*Poa secunda*). Forbs representative of these communities include arrowleaf balsamroot (*Balsamorhiza sagittata*), milkvetch (*Astragalus* sp.), lomatium (*Lomatium dissectum*), common yarrow (*Achillea millefolium*), lupine (*Lupinus* sp.), phlox (*Phlox* sp.), and pussytoes (*Antennaria* sp.). Shrub species include gray rabbitbrush (*Ericameria nauseosa*), Greene's rabbitbrush (*Ericameria greenei*), and basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). In heavily disturbed areas, the following weedy and noxious species occur: cereal rye (*Secale cereale*), cheat grass (*Bromus tectorum*), Russian thistle (*Salsola kali*), tumblemustard (*Thelypodopsis* sp.), China lettuce (*Lactuca serriola*), prostrate knotweed (*Polygonum aviculare*), and knapweed (*Centaurea* sp.) Much of the area has been cultivated with monoculture crops of wheat and other small grains.

3.4 Land Use

The project area is located on privately-owned land. As mentioned above, much of the area is used for agricultural activities and cattle grazing. The cultivated land is used for production of small grain crops, primarily dry land wheat and barley. The grazed land is either native shrub-steppe or land previously set aside in the federal Conservation Reserve Program.

3.5 Environmental Conditions

A variety of environmental conditions within the project area make the establishment of desirable plant species difficult. Low precipitation and sandy soils provide very little available moisture for germinating seeds. In addition, extensive past and present disturbance to the vegetative communities has created many areas dominated by non-native, weedy species. These species could spread to areas disturbed by construction activities and compete with planted species for the limited resources. Finally, high winds in the area further complicate efforts to establish desirable vegetation.

3.6 Pre Construction Inventory

The site certificate authorizes construction on corridors rather than specific turbine locations. The precise impact of construction, therefore, depends on the final project design. Therefore, prior to disturbing any area, GHWF will conduct an impact inventory, to be conducted by a qualified biologist. The pre-construction inventory will include:

- The ODFW habitat category for the area disturbed,
- The number of acres impacted,
- Photos representing the habitat,
- An assessment of dominant plant species, and
- The percentage of vegetative ground cover

4.0 Revegetation Procedures (Temporarily Disturbed Areas)

The following methods are to be used for all areas of temporary ground and/or vegetation disturbance in the upland habitats throughout the project area. Because no disturbance to wetland habitats is expected, no wetland revegetation methods have been specified.

4.1 Seed Mixture (Temporarily Disturbed Non-Agricultural Upland Areas)

As noted in section 2.0 above, the project is expected to result in temporary disturbance to approximately 279 acres of non-agricultural land, subject to verification as part of the preconstruction inventory. GHWF will reseed this area after construction. One seed mixture was developed for use in revegetating all temporarily disturbed upland habitats within the project area (Table 1). This seed mixture will be used, unless an alternative mixture is requested by a landowner, or agency biologist. The ODFW will need to approve the alternative mixture. To re-establish plant communities of most value to

wildlife, native species are included in the seed mixture, as well as certain non-native species that ODFW has determined to be beneficial to wildlife. Species were selected based on a variety of factors including tolerance to xeric conditions and seed availability.

4.2 Seed Planting Methods

Planting should be done in March--April (for disturbance that occurs during the winter and spring), and/or in October-November (for disturbance that occurs in the summer and fall). Disturbed, unseeded ground may require chemical or mechanical weed control in May or June, before weeds have a chance to go to seed.

In general, a weed-free seedbed should be prepared using conventional tillage equipment. Herbicide should be sprayed to control weedy and/or noxious species, following Oregon's buffer requirements for pesticide use (e.g., 300 feet from water sources). Summer fallowing may be required.

Areas to be seeded should be disked twice in early spring and spot-sprayed on the ground with an herbicide. This area should then be harrowed prior to seeding, ideally by the beginning of April. A conventional seed drill shall be used, except in areas where a rangeland drill is deemed more applicable, with a spacing less than 12 inches and at a depth of 1/8-1/4 inch. The prescribed seed mixture (Table 1) should be drilled at a rate of 12 pounds of pure live seed (PLS) per acre. If fallowing the area is to be used to increase soil moisture content, then the same procedure should be followed, but without seeding. If bare, disturbed soil is not seeded immediately, it will be protected from erosion. Seeding would then occur the following spring.

4.3 Restoration of Cropland

GHWF shall seed disturbed cropland areas with wheat or other cropseed. GHWF shall consult with the landowner and farm operator to determine species composition, seed and fertilizer application rates and application methods.

Cropland areas are successfully revegetated when the replanted areas achieve crop production comparable to adjacent non-disturbed cultivated areas. GHWF 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.

4.4 Revegetation Records

GHWF shall maintain a record of revegetation work for both cropland and wildlife habitat areas. In the record, GHWF shall include the date that construction activity was completed in the area to be restored, a description of the affected area (location, acres affected and pre-disturbances condition) the date that revegetation work began and a description of the work done within the affected area. GHWF shall update the revegetation records from

time to time as revegetation work occurs. GHWF shall provide copies of these records to the Department at the time it submits the annual report required under the site certificate.

4.5 Monitoring Procedures (Temporarily Disturbed Habitats)

The pre-construction inventory (section 3.6) will be repeated post-construction in the areas temporarily disturbed by construction activity to determine the success of the restoration. A qualified independent botanist or revegetation specialist hired by the certificate holder will examine a representative cross-section of plots within the revegetated areas. Following seeding, these visits will occur after the first growing season (year 1), then at year 3 and year 5. After year 5, an annual noxious weed assessment will be conducted on the site. The assessment will be made in May or June, when the largest number of weeds would be evident. If weeds are found, GHWF will make reasonable efforts to eradicate them. Care will be taken to survey areas in all the major habitat types and throughout the geographic extent of the revegetated areas. Each inventory will include:

- the ODFW habitat category for the area disturbed;
- the number of acres impacted;
- photos representing the habitat;
- an assessment of noxious weeds;
- an assessment of dominant plant species; and
- the percentage of vegetative ground cover

4.6 Success Criteria

In each monitoring report to the Department, the certificate holder shall provide an assessment of revegetation success for all previously-disturbed areas. A wildlife habitat area is successfully revegetated when its habitat quality is equal to, or better than, the habitat quality of the pre-construction ODFW habitat category of the disturbed area.

When the Department finds that the condition of a wildlife habitat area satisfies the criteria for revegetation success, the Department shall conclude that the certificate holder has met the restoration obligations for that area. If the Department finds that the landowner has converted a temporarily disturbed area to a use that is inconsistent with these success criteria, the Department shall conclude that the certificate holder has no further obligation to restore the area for wildlife habitat uses.

5.0 Habitat Improvement Procedures (Mitigation Area)

5.1 Introduction

To mitigate for permanent loss of habitat due to placement of facilities (e.g., turbines, access roads), BPAE has agreed to rehabilitate habitat on a like number of acres, of equivalent habitat quality, located in the vicinity of the project. The total amount of grassland and shrub-steppe land (including CRP) estimated to be permanently disturbed by the project, and for which mitigation is proposed for permanent impacts is 12.17 acres.

However, final impact areas will be calculated based on the pre-construction inventory described in Section 3.6. In addition, BPAE has also agreed to mitigate for indirect loss of habitat of an additional 10.45 acres of grassland/shrub-steppe habitat due to potential indirect impacts to grassland birds caused by operation of the wind project. Indirect impacts were calculated based on ODOE ratios used in previous site certificates (see attached spreadsheet). See Appendix A for a description of the habitat mitigation area. One parcel of land of similar size (approximately 22 acres) will be selected from the mitigation area for habitat enhancement based on a number of factors including:

- cost-effectiveness for quality implementation, management, and monitoring
- likelihood of successful enhancement benefiting wildlife
- willingness of landowner to participate in mitigation approach/activities

5.2 Pre-Management Inventory

- Prior to any management implementation (e.g., removal of grazing), GHWF will conduct a habitat inventory of the mitigation parcel, to be conducted by a qualified botanist or revegetation specialist. This person will examine a representative cross-section of plots within the mitigation parcel. These visits will occur yearly for the first five years, and then take place every five years for the life of the project. Care will be taken to survey areas in all the major habitat types and throughout the geographic extent of the revegetated parcel. Ten plots will be established within the mitigation site. At each plot or for the entire site, the investigator shall evaluate the following parameters:

- The ODFW habitat categories for the entire site,
- Photos representing the habitat at each plot,
- As assessment of dominant plant species at each plot (Year 1, Year 5)
- The percentage of vegetative ground cover at each plot (Year 1, Year 5)
- Record any wildfires within the mitigation area and remedial action taken on the entire site,
- An assessment of the presence of invasive weeds on the entire site
- Conduct avian surveys within mitigation area with one station set up at each plot, and
- Record observations of special status plants and animals within the mitigation area

5.3 Habitat Improvement Procedures

Once the habitat improvement parcel has been designated, the following measures will be implemented within its boundary. Ultimate responsibility for implementation and maintenance of these mitigation measures will be the responsibility of BPAE, although other parties may be subcontracted to carry out the procedures.

5.3.1 Fencing and Grazing

The parcel will be fenced prior to treatment to exclude cattle and other domestic ungulates. It is expected that regular maintenance will be required to keep the fences functioning. Gates will be installed at regular intervals along the perimeter.

GHWF shall prohibit grazing within the habitat mitigation area. Eliminating livestock grazing within the mitigation area will facilitate recovery of native bunchgrass and sagebrush in areas where past grazing has occurred, potentially resulting in better vegetative structure and complexity for a variety of wildlife.

5.3.2 Site Preparation and Planting Methods

Methods and seed mixtures used for revegetation of mitigation areas will follow those described above for temporarily disturbed areas. The mitigation site has been planted in grasses, therefore the site shall be planted and seeded using the same planting and seeding methods described for disturbed sites at sections 4.1 and 4.2 above. Ground cover canopy and height will be enhanced by the grazing exclusion.

In addition to the plantings described above, the certificate holder shall install a guzzler per ODFW specifications.

5.3.3 Maintenance

Because these improvements are mitigation for permanent habitat loss, it is necessary to maintain the fences and seedings over the life of the project (currently anticipated to be 30 years). This may include such maintenance activities as fence repair, periodic chemical or mechanical weed control, monitoring of improvement success, and re-seeding (in areas where native species establishment falls below the percentages specified in the success criteria described below).

5.3.4 Fire Control

GHWF shall implement a fire control plan for wildfire suppression within the mitigation area. GHWF shall provide a copy of the fire control plan to the Department before starting habitat enhancement actions. GHWF shall include in the plan appropriate fire prevention measures, methods to detect fires that occur and a protocol for fire response and suppression. GHWF shall maintain fire control for the life of the facility.

5.4. Post-Management Monitoring Procedures

- A qualified botanist or revegetation specialist will re-examine the mitigation parcel and compare the conditions of the site relative to the pre-management period (see section 5.2). A visit to the site will occur yearly to assess the presence of noxious weeds, and

record any wildfires within the mitigation area. If noxious weeds are found, GHWF will make reasonable efforts to eradicate them. In addition, focused monitoring will be conducted on a periodic basis to determine the success of the management measures to improve habitat. The investigator shall evaluate the following parameters:

- The ODFW habitat categories mapped and area calculated for the entire mitigation site (Year 1, 5, and every five years for life of project),
- Photos representing the habitat at each selected plot (Year 1, 5, and every five years for life of project),
- An assessment of dominant plant species at each plot (Year 1, 5, and every five years for life of project)
- The percentage of vegetative ground cover at each plot (Year 1, 5, and every five years for life of project)
- Record any wildfires within the mitigation area and remedial action taken (Annual for life of project),
- An assessment of the presence of invasive weeds on the site (Annual for life of project)
- Assess success of weed control program and recommend remedial actions if needed (Annual for life of project),
- Conduct avian surveys within mitigation area in spring (Year 5, 10, 15, 20), and
- Record observations of special status plants and animals within the mitigation area when on site

GHWF shall submit the monitoring reports with the annual report required by the site certificate.

5.5. Success Criteria

Mitigation of the permanent and temporal habitat impacts of the facility may be considered successful if the certificate holder protects and enhances sufficient habitat within the mitigation area to meet the ODFW goals of no net loss of habitat in Categories 2, 3 and 4 and a net benefit in habitat quantity or quality for impacts to habitat in Categories 2 and 5. The certificate holder must protect the quantity and quality of habitat within the mitigation area for the life of the facility.

The certificate holder shall determine the actual mitigation area requirements, subject to Department approval, before beginning construction of the GHWF. If the land selected for the mitigation area does not already contain sufficient habitat in each category to meet these requirements, then the certificate holder must demonstrate improvement of habitat quality sufficient to change lower-value habitat to a higher value (for example, to convert Category 3 habitat to Category 2). The certificate holder may demonstrate improvement of habitat quality based on evidence of indicators such as increased avian use by a diversity of species, more abundant seed production of desirable native bunchgrass, natural recruitment of sagebrush and successful weed control. If the certificate holder cannot demonstrate that the habitat mitigation area is trending toward the habitat quality

goals described above within three years, the certificate holder shall investigate the cause of the failure and report the results of the investigation to ODOE within six months after the end of the third year of operation. If the investigation shows that the site is unlikely to reach the required habitat quality, then the certificate holder shall propose an alternate site for Department approval in time for the next planting season. If the investigation shows that the cause of the failure was inadequate implementation of the habitat improvement procedures, then the certificate shall repeat those procedures and begin post implementation monitoring as before.

After the certificate holder has demonstrated that the habitat quantity goals have been achieved, the investigator shall verify, during subsequent monitoring visits, that the mitigation area continues to meet the ODFW “no net loss” and “net benefit” goals described above. The investigator shall recommend remedial action if the habitat quality within the mitigation area falls below the habitat quantity goals listed above. The Department may require other corrective measures and additional monitoring as necessary to ensure that the habitat quantity goals are achieved and maintained.

6.0 Amendment of the Plan

This Revegetation Plan may be amended from time to time by agreement of the certificate holder and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the Office of Energy to agree to amendments to this plan. The Office of Energy 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 Office.

7.0 References

Macdonald, Gerald D., James M. Lamkin, and Roger H. Borine. 1999. Soil Survey of Sherman County, Oregon. Natural Resources Conservation Service, U.S. Department of Agriculture.

Table 1. Seed mixture and rate (Pure Live Seed, PLS, lbs/acre) to be used for revegetation of temporarily disturbed areas.

Common Name	Scientific Name	Pounds (PLS)/ 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>	1.5
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

* non-native species determined by ODFW to be beneficial to wildlife

APPENDIX A

HABITAT MITIGATION PROJECT

GOLDEN HILLS HABITAT MITIGATION PROJECT

OFF-SITE UPLAND GRASSLAND SHRUB-STEPPE ENHANCEMENT JOHN DAY RIVER BASIN

SITE DESCRIPTION AND PROPOSED MITIGATION MANAGEMENT

John Day River Rim – Upland Grassland Shrub-steppe Enhancement

Current Condition

The mitigation area is located “off-site” approximately 5 miles southeast of the Golden Hills Wind Farm layout (Figure 1). The enhancement area is within approximately 330 acres of fenced rangeland, with large tracts of CRP located immediately to the north and south, and BLM land to the east. The entire property has been extensively grazed historically and recently by livestock, yet harbors mature big sagebrush on the hillside slopes and interior drainage. The site is at the uppermost region of the Willow Springs Canyon tributary of the John Day River, approximately two miles up-drainage of the river (Figure 1). The area selected for enhancement is approximately 21.9 acres within a 40 acre deep-soil parcel (Figure 2). The 21.9 acre enhancement area may be reduced or increased based upon finalized calculations for habitat impacts from the Golden Hills Wind Facility layout. This mitigation parcel includes an upland 1 to 7 degree slope deep-soil area classified by USDA NRCS as 1B Anderly silt loam (1-30 inch typical depth profile; Figure 3). This soil type is considered prime farmland if irrigated. The area has historically been cultivated and seeded to provide better forage for cattle, although currently non-native undesirable cheatgrass dominates the area (see Appendix A photos). Horizontal and vertical vegetative structure, especially of native grasses and forbs, is largely depleted due to livestock grazing impacts (Appendix A). The enhancement area is adjacent to CRP to the west/southwest and BLM to the north, east, and southeast. Areas on all sides of the previously cultivated area have stands of blue bunch wheatgrass, with a variety of forbs including balsamroot, big sagebrush, rigid sagebrush, phlox species, pussy toes, lupine, daisy fleabane, yarrow, and green rabbitbrush (Appendix A).

Potential for Wildlife Habitat Enhancement

This site has the potential to provide more diverse grassland in greater quantity with greater horizontal and vertical structure. If enhanced, the parcel would provide better nesting habitat for grassland bird species, including loggerhead shrikes, and also provide higher quality forage and cover for big game. Limited big game forage such as sandberg bluegrass, bluebunch wheatgrass, and various forbs, would be enhanced with livestock exclusion providing better fall, winter, and early spring rangeland for big game. Summer habitat for ground-nesting birds would also be

enhanced. Enhancement would also likely provide better hunting grounds for raptors as well. Due to the elevational gradient and mixed soil depths, the site has the potential to provide several different quality ecotones.

Proposed Management for Enhancement

Eradication or control of non-desirable invasive/noxious species would be conducted by either using small controlled prescribed burns or spot spraying with herbicide. The area would be reclaimed for desirable grassland/shrub-steppe wildlife habitat using the revegetation methods described in section 4.0 of the Golden Hills Wind Farm revegetation plan for temporarily disturbed upland non-agriculture lands. The entire mitigation parcel would be fenced off and not grazed by domestic livestock. Given the selected mitigation parcel is currently heavily grazed and predominantly cheatgrass, there exists a high potential for successful reclamation of high quality wildlife habitat. In addition, a water catchment (“guzzler”) would be installed providing a water source for wildlife. Prior to any land management change, the ecological condition of the site should be assessed using Oregon protocols for rangeland inventory and evaluation (USDA 2004). This assessment would include photo documentation of the site with additional notes regarding wildlife habitat condition. Post-management site assessment, for example every 5 years, should also be agreed upon by ODFW allowing adaptive management needs.

Advantages

This site lacks public road access and is remote and infrequently disturbed by humans, used largely for hunting by landowner only. The site is approximately 5 miles from the proposed Golden Hills Wind Farm (Figure 1). The landowner has expressed willingness to enter into at least a 25 year conservation easement agreement for the site. The enhancement parcel has suitable soils for successful seeding and is surrounded by existing stands of grassland/shrub-steppe. The area is adjacent to a watershed with riparian habitat to the north, and cliff and riparian corridor habitat of the John Day River to the east; enhancing landscape-level wildlife forage, thermal and security cover, and water. This location presents the opportunity to enhance grassland/shrub-steppe quality and quantity that is limited in availability for wildlife. Successful enhancement would provide greater connectivity between adjacent large tracts of CRP and BLM lands, creating a larger overall mosaic of quality wildlife habitat.

Reference

USDA. 2004. National Range and Pasture Handbook: Amendment 2 600.0401a; Oregon Protocols for Rangeland and Pature / Hayland Inventory and Evaluation. United States Department of Agriculture, Natural Resources Conservation Service, Grazing Lands Technology Institute.

Figure 1. Miller property with mitigation area in relation to the Golden Hills Wind Farm location.

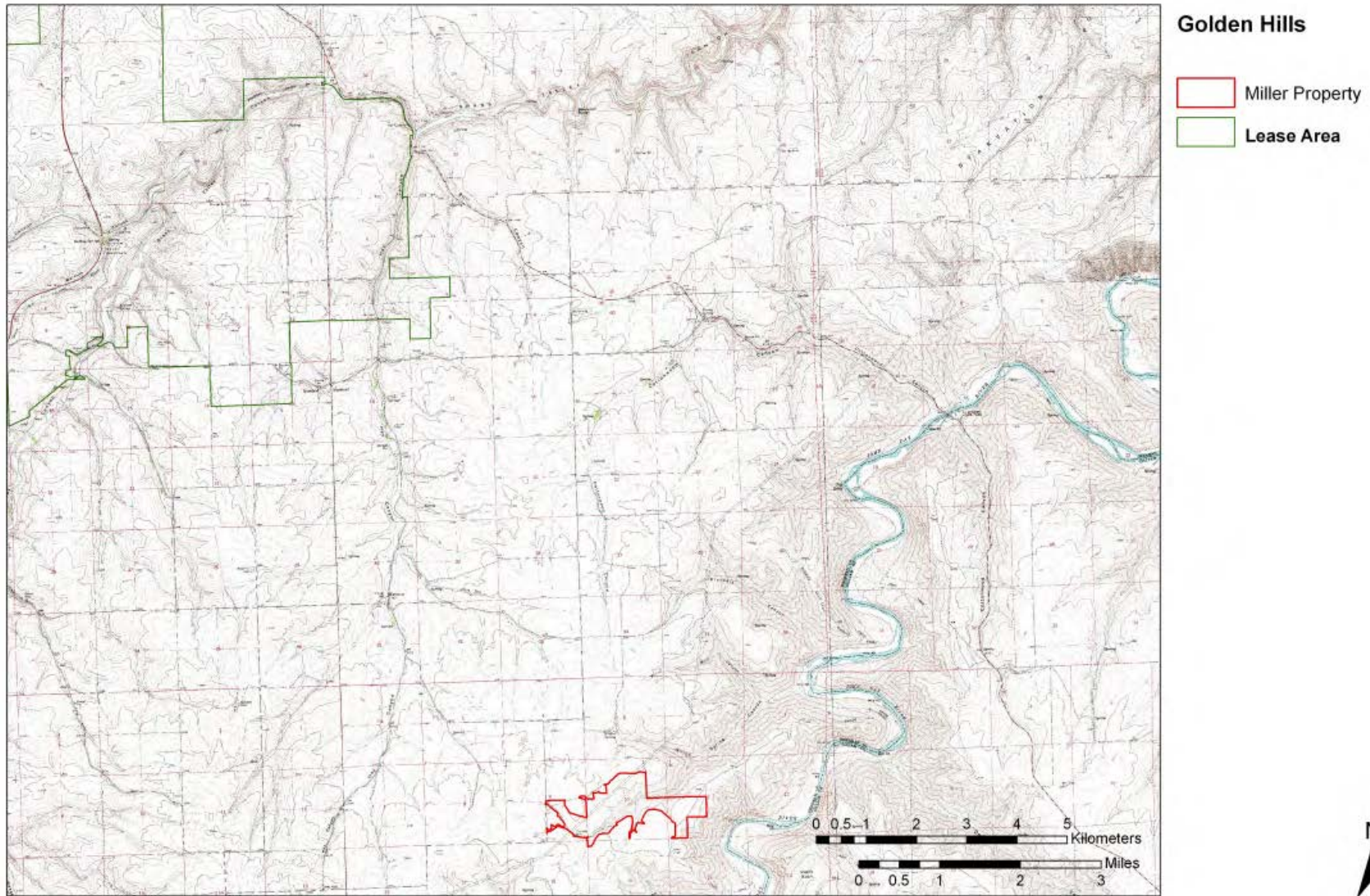


Figure 2. Upland mitigation enhancement parcel within the Miller property rangeland area.

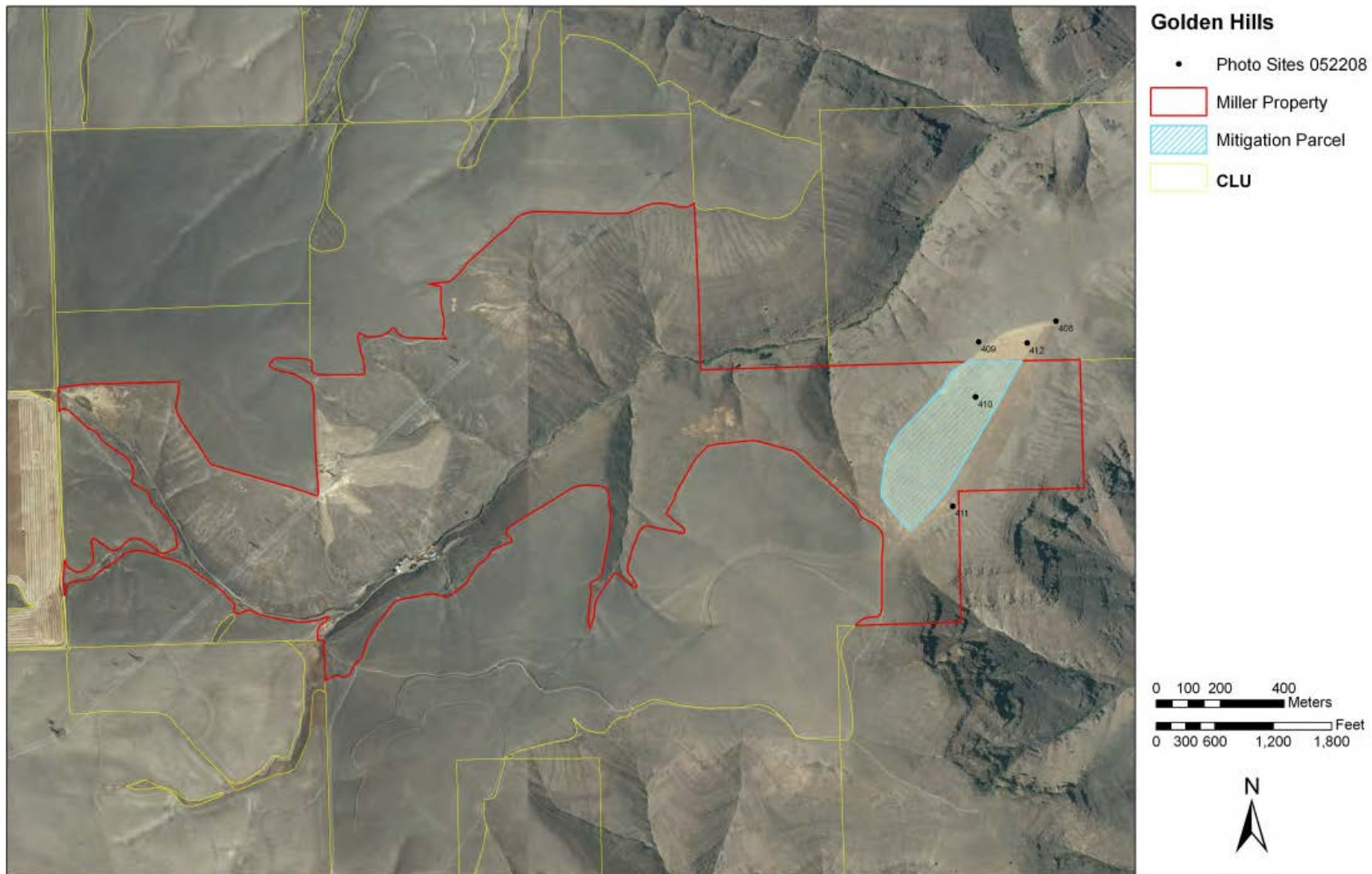
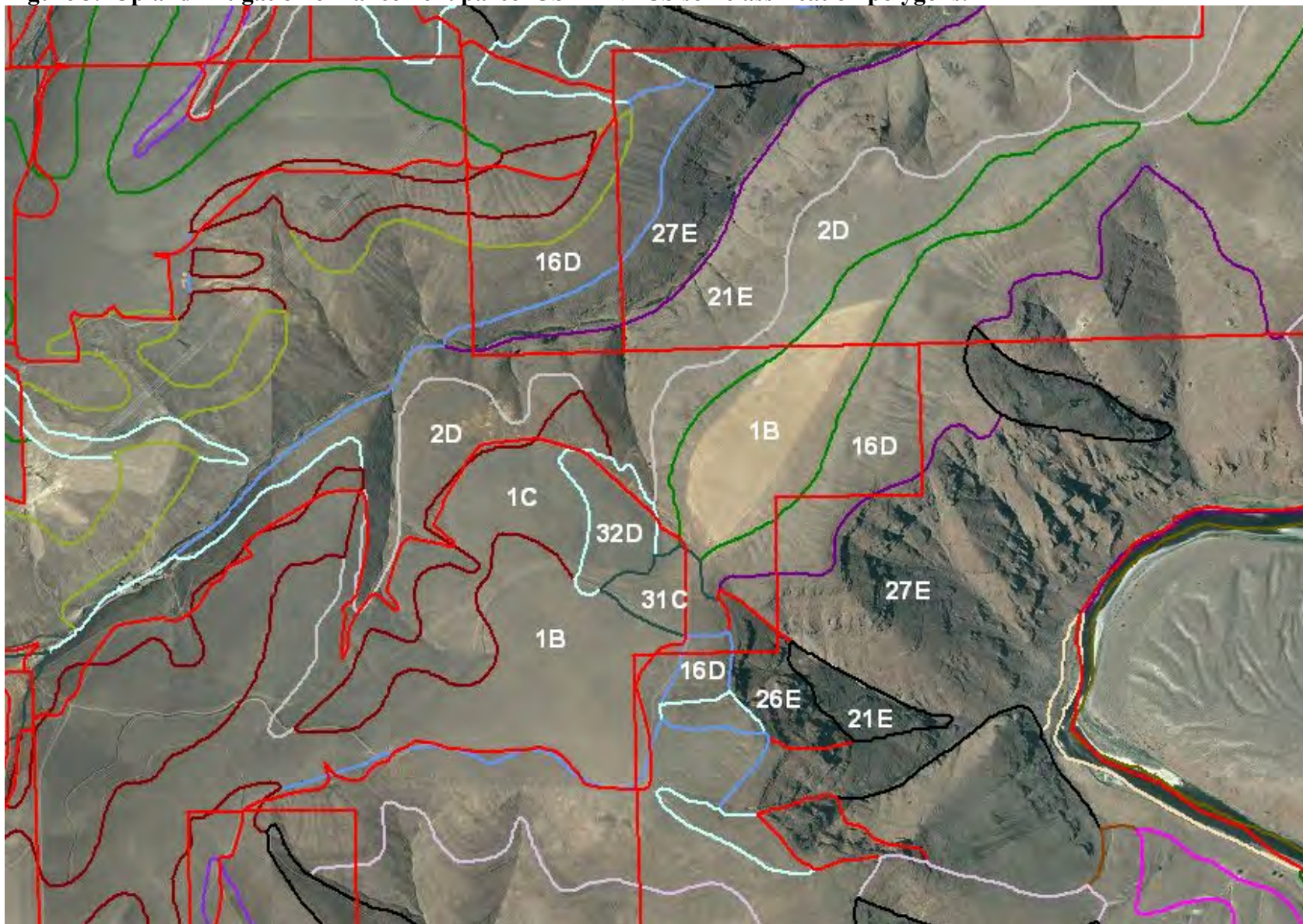


Figure 3. Upland mitigation enhancement parcel USDA NRCS soil classification polygons.



**Appendix A (Photo Sites 408-412). Mitigation Enhancement Parcel pictures of vegetation and grazing impacts.
PHOTO SITE 408 – ENHANCEMENT PARCEL WITH ADJACENT BUNCHGRASS**



PHOTO SITE 409 – ENHANCEMENT PARCEL WITH ADJACENT BUNCHGRASS (FOREGROUND)



PHOTO SITE 410 – ENHANCEMENT PARCEL



PHOTO SITE 411 – ENHANCEMENT PARCEL WITH ADJACENT BUNCHGRASS



PHOTO SITE 412 – ENHANCEMENT PARCEL



PHOTO – ENHANCEMENT PARCEL WITH CATTLE GRAZING MAY 22, 2008



PHOTO – ENHANCEMENT PARCEL WITH ADJACENT SAGEBRUSH/BUNCHGRASS (FOREGROUND) AND DRILL MAY 22, 2008

