

Request for Amendment 2 to the Shepherds Flat Central Site Certificate

**Prepared for
South Hurlburt Wind, LLC**

Prepared by



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September 2019

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Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
ADR	Amendment Determination Request
ASC	Application for Site Certificate
BLM	U.S. Bureau of Land Management
Caithness	Caithness Energy, LLC
Certificate Holder	South Hurlburt Wind, LLC
Council	Oregon Energy Facility Siting Council
dBA	A-weighted decibels
Demo Turbines	Demonstration Turbines
DOGAMI	Oregon Department of Geology and Mineral Industries
FAA	Federal Aviation Administration
Facility	Shepherds Flat Central
GCZO	Gilliam County Zoning and Land Development Ordinance
MW	megawatts
NSR	noise sensitive receptors
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ORS	Oregon Revised Statutes
OWRD	Oregon Water Resources Department
RFA	Request for Amendment
RPS	Oregon's Renewable Portfolio Standard
ZVI	Zone of Visual Influence
WAGS	Washington ground squirrel
WMMP	Wildlife Monitoring and Mitigation Plan

1.0 Introduction and Request

Shepherds Flat Central (the Facility) is an operational wind energy facility with 116 turbines and a maximum generating capacity of 290 megawatts (MW), located within a Site Boundary of approximately 11,769 acres in Gilliam and Morrow counties. The Certificate Holder for the Facility is South Hurlburt Wind, LLC (Certificate Holder), a wholly owned subsidiary of Caithness Shepherds Flat, LLC (Shepherds Flat), which is in turn, an indirect subsidiary of Caithness Energy, LLC (Caithness). The Facility is part of the Shepherds Flat Wind Farm, which also consists of Shepherds Flat North and Shepherds Flat South. The certificate holders for Shepherds Flat North and South are separate subsidiaries of Shepherds Flat.

The Certificate Holder is submitting this Request for Amendment (RFA) 2 to the Facility Site Certificate (Site Certificate) to allow two turbines (Turbines 368 and 370; see Figure 1) to be upgraded to current technology by modifying the turbine nacelles and exchanging existing blades for longer turbine blades on existing turbine towers; this will be performed during typical operations and maintenance (O&M) activities. Currently, Condition 26 of the Site Certificate maintains a minimum allowed blade tip clearance of 25 meters. The Certificate Holder proposes to decrease the minimum allowed blade tip clearance for two Demonstration Turbines (Demo Turbines) from 25 meters to 21.5 meters above the ground. The maximum generating capacity will remain the same (290 MW). The upgrade to the Demo Turbines will provide the data necessary to logistically plan for the optimization of energy output from upgraded equipment for the whole Shepherds Flat Wind Farm, which will be included in a subsequent amendment request.

1.1 Existing Site Certificate and Prior Amendments

The Certificate Holder obtained a Site Certificate for the Shepherds Flat Wind Farm from the Oregon Energy Facility Siting Council (the Council) on July 25, 2008, approving construction of the Facility. Since 2008, the Certificate Holder has obtained Council approval to divide the Shepherds Flat Wind Farm into the three facilities, each with their own site certificate. The division request was approved and issued on September 11, 2009. The Site Certificate on Amendment 1 was issued for the Facility on March 12, 2010. Amendment 1 authorized expansion of the Site Boundary to accommodate an alternative route for the transmission line to connect to the regional transmission system operated by Bonneville Power Administration. The Facility became operational in 2012.

1.2 Amendment Required under OAR 345-027-0050 and Review Process under OAR 345-027-0051

The Certificate Holder submitted an amendment determination request (ADR) for a Type B review to the Oregon Department of Energy (ODOE) on May 21, 2019. The ADR was for the proposed modifications to accommodate the Demo Turbines. On June 17, 2019, ODOE responded that at that time they were unable to make a determination of whether the RFA justified review under the Type B review process. ODOE noted in its letter what additional information and analysis was needed to support ODOE's evaluation, which could be provided in a revised request. RFA 2 provides the

necessary information to determine that the Type B review process is the appropriate process for the proposed change, as further validated with the following analysis of the Oregon Administrative Rule (OAR) 345-027-0057(8) evaluation criteria:

OAR 345-027-0057(8) In determining whether a request for amendment justifies review under the type B review process described in 345-027-0051(3), the Department and the Council may consider factors including but not limited to:

OAR 345-027-0057(8)(a) The complexity of the proposed change;

The primary purpose of RFA 2 is to take advantage of technological advances in wind turbines. The Site Boundary will not be changed; therefore, there are no new areas or resources to consider that were not previously evaluated. The Certificate Holder replaces blades and gearboxes as a matter of routine Facility maintenance, and the proposed change will follow existing maintenance protocols. The Demo Units are scheduled for blade bearing replacements in the Fall of 2019, and the new blades would be added at that time. This ensures that there is no incremental impact from what is otherwise necessary to carry out existing and already scheduled maintenance. These protocols are not complex: the Facility's on-site crane will be trucked to the first Demo Turbine site, using existing Facility roads. After crane assembly, the Certificate Holder plans to remove the existing full rotor in one lift. Should wind conditions not allow for full rotor removal, blades will be removed individually. The new rotor will be assembled on the ground and lifted as a unit for installation. The crane will then crawl within the existing, approved Facility footprint for temporary and permanent impacts, to the next Demo Turbine and the process will be repeated. The crane will then be disassembled and trucked out on existing Facility roads. The Demo Turbine retrofit will take approximately 2 weeks per wind turbine.

In general, given that the proposed changes will only be to two turbines, will not increase the approved height of the turbine, and will utilize existing facilities and equipment as part of planned O&M operations, the proposed changes lack complexity. Ultimately, the Facility will continue to be operated in the same manner as previously approved by the Council.

At its February 22, 2019 meeting, the Council concurred with NextEra Energy's request that RFA 5 for the Stateline Wind Facility should be subject to the Type B review process. RFA 5 for the Stateline Wind Facility increased the turbine height and rotor diameter, and decreased the minimum aboveground blade tip clearance to allow for repowering the entire facility. Because this RFA 2 proposes only to modify one turbine specification and for only for two turbines, ODOE and the Council can similarly concur that the proposed change is not complex and should be subject to the Type B review process.

OAR 345-027-0057(8)(b) The anticipated level of public interest in the proposed change;

The Facility is not accessible to the public, the turbines are in a remote area in the middle of the Facility site, the proposed change is to only two turbines, and there will be no change to the previously approved Site Boundary (see Figure 1). There will also be no change to noise (see Section 6.17), visual impacts (see Section 6.10), or public safety (see Section 6.15). Therefore, public interest in the proposed change is anticipated to be minimal, if any. The Council has already

addressed and imposed conditions as necessary in response to past public comments during the siting process (ODOE 2008). In fact, no interested person contested the Application for Site Certificate (ASC; ODOE 2008). As noted above, the proposed change lacks complexity, and will not result in any changes to the Facility that will affect the public.

OAR 345-027-0057(8)(c) The anticipated level of interest by reviewing agencies;

Reviewing agencies commented on the original Site Certificate, which informed the development of the Site Certificate conditions. The Certificate Holder coordinated with agencies that may be interested in the changes, such as Oregon Department of Fish and Wildlife (ODFW) (see Sections 6.8 and 6.9). The Certificate Holder understands that the ODOE review process includes outreach to respective agencies as a matter of process, but it is anticipated that their interest will be low in comparison to other recent energy projects because of the limited scope of the proposed change and the fact that the modifications will occur in conjunction with routine O&M activities.

OAR 345-027-0057(8)(d) The likelihood of significant adverse impact; and

RFA 2 does not propose to increase the footprint of the Facility or the Site Boundary. RFA 2 proposes a minor turbine specification change: to lower the approved minimum aboveground blade tip clearance and increase maximum blade tip height for only two turbines. These modifications to two turbine specifications are not anticipated to change the previously authorized impacts to scenic resources, public safety, and avian species, or alter the noise profile of the facility. As demonstrated in Sections 6.8, 6.9, 6.10, and 6.13 there are no significant changes to impacts for these resources.

OAR 345-027-0057(8)(e) The type and amount of mitigation, if any.

The Facility has an ODFW-approved Wildlife Monitoring and Mitigation Plan (WMMP) and Habitat Mitigation Plan (HMP). Studies with respect to a lower blade tip clearance on avian mortality are limited; however, there will be no new significant impact (see Section 6.8). For these and the reasons described above, the Certificate Holder does not anticipate any new or changes to existing mitigation plans.

2.0 Certificate Holder Information – OAR 345-027-0060(1)(a)

OAR 345-027-0060(1) To request an amendment to the site certificate required by OAR 345-027-0050(3) and (4), the Certificate Holder shall submit a written preliminary request for amendment to the Department of Energy that includes the following:

OAR 345-027-0060(1)(a) The name of the facility, the name and mailing address of the Certificate Holder, and the name, mailing address, email address and phone number of the individual responsible for submitting the request.

2.1 Name of the Facility

Shepherds Flat Central

2.2 Name and Mailing Address of the Certificate Holder

South Hurlburt Wind, LLC
c/o Caithness Energy, LLC
565 Fifth Avenue, 29th Floor
New York, NY 10017

2.3 Current Parent Company of Certificate Holder

Caithness Energy, LLC

2.4 Name and Mailing Address of the Individuals Responsible for Submitting the Request

Derrel A. Grant
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3.0 Detailed Description of the Proposed Change – OAR 345-027-0060(1)(b)

OAR 345-027-0060(1)(b) A detailed description of the proposed change, including:

The Certificate Holder needs to refurbish blade bearings and associated machinery on two units as part of ongoing O&M practices. While doing so, the Certificate Holder is proposing to replace the existing turbine blades and associated machinery with longer blades and more advanced machinery so that two units can be utilized as the Demo Turbines (Figure 2) to ascertain the ability to optimize energy output with upgraded equipment. A minor Site Certificate condition adjustment is being requested to provide for the turbines with a lower blade tip clearance. Specifically, Condition 26 will be amended to lower the minimum ground clearance from 25 meters to 21.5 meters to accommodate the longer blades of the Demo Turbines (see Section 5.0).

The longer blades will increase the rotor diameter and maximum blade tip height; *however, these dimensions are within the range of turbine specifications approved for use at the Facility per the Site Certificate Condition 26 which provides turbine specifications approved for use at the Facility (see*

Section 5.0). The maximum generating capacity will remain the same (290 MW). Table 1 provides the existing specifications and proposed specifications for the Demo Turbines and the specifications in the Site Certificate (Condition 26).

Table 1. Existing and Proposed Demo Turbine Specifications and Approved Specifications

Specification	Existing Turbine Specifications	Proposed Turbine Specifications	Approved per Condition 26 of Site Certificate
Hub Height in feet (meters)	85	85	105
Maximum blade tip height (meters)	135	150	150
Minimum Ground Clearance in feet (meters)	25	21.5	25

The upgrade will allow each Demo Turbine to generate more electricity with no increase in permanent footprint. It will also hone the equipment exchange process in advance of a comprehensive Facility update (to be requested in a subsequent amendment request) so that it can be completed as efficiently as possible, minimizing disturbances to the site. Once upgraded, the Demo Turbines will also provide the calibration data for the comprehensive Facility upgrade.

Upgrading the Demo Turbines will be completed during the same activities and processes for the blade bearing replacement. These activities are typical and routine to wind farm O&M activities, which include routinely switching out blades and other turbine components in order to maintain the turbines in good and safe working order.

Specific details of the upgrading of the Demo Turbines includes:

- Replace the current 100-meter rotor diameter blades with larger 127-meter rotor diameter blades.
- Replace the hub casting as part of the rotor upgrade.
- Modify the roof of the nacelle to accommodate the replacement of the wind turbine drive train.
- Install a new gearbox and bedplate.
- Replace various electrical and controller components in the turbines to support the upgrades.

There will be no changes to the current tower or foundation, the current generator or its configuration, the current electrical infrastructure at the turbine, the Facility electrical collection system, or any other related or supporting facilities. The upgrades to the Demo Turbines will take approximately 2 weeks per wind turbine. As noted above, the Demo Units are scheduled for blade bearing replacements in the Fall of 2019, and the new blades would be added at that time. This

ensures that there is no incremental impact from what is otherwise necessary to carry out existing and already scheduled maintenance.

The scheduled maintenance to the Demo Turbines will utilize existing Facility infrastructure, access roads, and turbine pad areas, as is typical of O&M work. As with other routine O&M activities, there will be some superficial ground disturbance; i.e., no grading or earthwork will occur, but there will be some vegetation disturbance. Vegetation disturbance will be reduced by preserving vegetation rootstalks through crushing, by driving over vegetation, or placing replacement components on the ground surface, rather than scraping vegetation to bare ground in the work areas (Condition 76). The area of vegetation disturbance will be within the area disturbed for Facility construction, but not to the full extent of that area.

The superficial ground disturbance associated with the Demo Turbines' upgrade operations will include a variety of activities. Equipment will be delivered in standard protective frames and stands. This equipment will be delivered on semi-trucks to each Demo Turbine pad using existing Facility roads. Components will be placed primarily on road and pad surfaces; however, placement of the equipment may exceed the dimensions of the pad, as regularly occurs during temporary equipment laydowns at the Facility. The Facility's regularly-used, on-site crane will be trucked to the first Demo Turbine using existing Facility roads. At Turbine 370, the sharp, 90-degree turn may require trucks to drive briefly across a revegetated area. A turnaround area in vegetation north of Turbine 368 will also be used by the semi-trucks.

After crane assembly at the first Demo Turbine, the existing rotor will be removed in one lift. Should wind conditions not allow for full rotor removal, blades will be removed individually. As turbine parts are removed, they will be trucked out on semi-trucks along existing roads. The crane will then crawl slowly to the second Demo Turbine. During this crane walk, one track will remain on the Facility road, and one track will be in motion along the side of the road. The on-site crane is 33.5 feet wide. Each crane track is 5 feet wide. Facility roads are 16 feet wide. Therefore, a single crane track will crawl in an area offset from the road by 12.5 feet. This area is the maximum width of vegetation disturbance anticipated along this turbine road (Figure 4).

The turbine disassembly process will be repeated at the second Demo Turbine, followed by the assembly process. The new rotor will be assembled on the ground and lifted as a unit. The crane will then walk slowly back to the first Demo Turbine, using the same path along the turbine road with one, 5-foot track to the side of the road. The assembly process will occur at the first Demo Turbine. The crane will then be disassembled and trucked out on existing Facility roads.

Such superficial ground disturbance around turbine roads and pads from the activities described above occurs regularly, and existing turbine parts (e.g., blade bearings, 100-meter rotor diameter blades, hub castings, nacelle bodies, gearboxes, electrical and controller components) are maintained and replaced at the Facility, as approved under the existing Site Certificate. The same permitted operations used to maintain and repair existing equipment will occur to upgrade the Demo Turbines with 127-meter rotor diameter blades, new hub castings, modified nacelle roofs, new gearboxes and bedplates, and electrical and controller components inside the turbines. Areas

of temporary vegetation disturbance from Facility operations, maintenance, and repair are routinely revegetated in compliance with Condition 77:

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

3.1 Effect of Proposed Changes on the Project – OAR 345-027-0060(1)(b)(A)

OAR 345-027-0060(1)(b)(A) a description of how the proposed change affects the facility

As noted above, replacing blades and associated mechanical equipment is typical to industry activities as part of O&M procedures. The proposed change to the two Demo Turbines would not change how the Facility is operated, as previously approved by the Council. There would be no new structures or permanent ground development, only the upgrading of two existing turbines. There also would be no change to the previously approved Site Boundary. As noted above, once upgraded, the Demo Turbines will provide the calibration data for the comprehensive Facility upgrade. The comprehensive upgrade would extend the useful life of the Facility by approximately 20 years (the Facility began operation in 2012 and was originally expected to have a 30-year useful life). More importantly, once upgraded, the Facility will have a 20-30 percent increase in performance, predominately in lower wind speeds. Ultimately, the proposed change would maximize the use of current technology, while supporting renewable energy production in the region.

3.2 Applicable Laws and Council Rules – OAR 345-027-0060(1)(b)(B)

OAR 345-027-0060(1)(b)(B) a description of how the proposed change affects those resources or interests protected by applicable laws and Council standards, and

There have been no changes to local, state, or federal law that would prohibit the changes requested in this RFA 2. Compliance with applicable laws is integrated into the Site Certificate conditions, which have been complied with for all stages of the Facility development so far (i.e., pre-construction, construction, operations), as documented through the annual condition compliance report. Although minor modifications to the Site Certificate are being requested to provide for two turbines with a lower blade tip clearance, RFA 2 can still comply with the purpose or intent of all Site Certificate conditions.

In general, the proposed changes do not affect the resources or interests protected by applicable laws and Council standards in a substantially different way than previously approved by the Council. The Facility is operational, and the Site Boundary or footprint of the Facility would not be changed; therefore, there are no new areas that would need to be considered that were not previously evaluated. Other than the change in turbine dimension (specific to the two Demo Turbines) the Facility would be operated in the same manner as already approved by the Council and as documented through annual reporting that has been completed since the Facility was first operational in 2012. Sections 4.0 and 6.0 demonstrate how the proposed changes are consistent with the Council's previous findings.

3.3 Location of the Proposed Change – OAR 345-027-0060(1)(b)(C) and Associated Analysis Areas

OAR 345-027-0060(1)(b)(C) the specific location of the proposed change, and any updated maps and/or geospatial data layers relevant to the proposed change

Figure 1 shows the Facility location, and Figure 2 shows the location of the two Demo Turbines. The two Demo Turbines (Turbines 368 and 370) are within tax lot Section 15, 2N-22-1400. No turbine relocations are proposed, and all existing as-built maps remain in effect. There would be no new permanent impact areas as part of RFA 2 or new areas of temporary impacts, only temporary impacts associated with typical O&M typical activities within the previously approved temporary impact areas.

Per an email from Christopher Clark of ODOE on July 16, 2019:

For the purposes of preparing the proposed request, ODOE approves limiting the analysis area to the two affected units and the area within the distances specified under OAR 345-001-0010(59) from the two affected units as allowed under OAR 345-027-0060(3).

Therefore, Figure 3 provides the analysis areas reviewed in RFA 2 in consideration of ODOE direction and OAR 345-001-0010(59).

4.0 Division 21 Requirements – OAR 345-027-0060(1)(c)

OAR 345-027-0060(1)(c) References to any specific Division 21 information that may be required for the Department to make its findings.

4.1 Required Permits – OAR 345-021-0010(1)(e)

The Final Order on the ASC and subsequent amendment identified the federal, state, and local government permits related to the siting of the Facility, which were incorporated into Site Certificate conditions as necessary. Because the Facility is operational, and the proposed change will be implemented as part of routine O&M activities, only the Federal Aviation Administration (FAA) permit (Condition 57) is applicable to RFA 2.

4.2 Additional Statutes and Rules – OAR 345-021-0010(cc)

There are no additional statutes and rules that are applicable to the two Demo Turbines.

5.0 Site Certificate Revisions – OAR 345-027-0060(1)(d)

OAR 345-027-0060(1)(d) The specific language of the site certificate, including conditions, that the Certificate Holder proposes to change, add or delete through the amendment.

The Certificate Holder proposes to modify the specific language of Site Certificate Condition 26 as shown below and in Attachment 1. No other language in the site certificate is proposed to be changed as part of RFA 2.

26. The Certificate Holder shall construct a Facility substantially as described in the Site Certificate and may select turbines of any type, subject to the following restrictions and compliance with all other Site Certificate conditions. Before beginning construction, the Certificate Holder shall provide to ODOE a description of the turbine types selected for the Facility demonstrating compliance with this condition.

- a. The total number of turbines at the Facility must not exceed 116 turbines.*
- b. The combined peak generating capacity of the Facility must not exceed 290 megawatts.*
- c. The turbine hub height must not exceed 105 meters and the maximum blade tip height must not exceed 150 meters.*
- d. The minimum blade tip clearance must be 25 meters above ground, with the exception of turbine number 368 and turbine number 370 for which the minimum blade tip clearance must be 21.5 meters above ground.*
- e. The maximum volume of concrete above three feet below grade in the turbine foundations must not exceed 66 cubic yards.*
- f. The maximum combined weight of metals in the tower (including ladders and platforms) and nacelle must not exceed 393 U.S. tons per turbine.*
- g. The Certificate Holder shall request an amendment of the Site Certificate to increase the combined peak generating capacity of the Facility beyond 290 megawatts, to increase the number of wind turbines to more than 116 wind turbines or to install wind turbines with a hub height greater than 105 meters, a blade tip height greater than 150 meters or a blade tip clearance less than 25 meters above ground.*
- h. The Certificate Holder shall exchange blades and associated mechanical equipment for turbines 368 and 370 during operation of the Facility; in conjunction with routine operations and maintenance activities.*

6.0 Division 22 Standards and Applicable Laws OAR 345-027-0060(1)(e)

OAR 345-027-0060(1)(e) A list of the Council standards and all other laws - including statutes, rules and ordinances - applicable to the proposed change, and an analysis of whether the facility, with the proposed change, would comply with those applicable laws and Council standards. For the purpose of this rule, a law or Council standard is "applicable" if the Council would apply or consider the law or Council standard under OAR 345-027-0075(2).

Council standards relevant to RFA 2 include Division 22 (General Standards for Siting Facilities) and Division 24 (Specific Standards for Siting Facilities). Division 23, which applies to non-generating facilities, does not apply to wind power generating facilities. Similarly, inapplicable provisions of Division 24 (e.g., standards applicable to gas plants, gas storage, non-generating facilities) are not discussed in RFA 2. The upgrades to the Demo Turbines and the operational Facility do not alter the Certificate Holder’s ability to comply with the Council’s earlier findings in the Final Order on the ASC and Amendment 1.

The primary purpose of RFA 2 is to take advantage of technological advances in the efficiency of wind resource harvesting, as part of typical O&M activities for the Facility. The Site Boundary would not be changed and there would be no changes to the Facility’s approved permanent and temporary impact footprint. Table 2 identifies Council standards and other laws that were reviewed as part of RFA 2, and their applicability to the proposed change. Table 2 also identifies the conditions applicable to the operational phase of the Facility. Ultimately, the Facility would be operated in the same manner as previously approved by the Council, which imposed conditions, as necessary, for Facility operations. Except as specifically proposed in Section 5.0 of this RFA, the Certificate Holder will continue to comply with all existing Site Certificate conditions, as documented through annual reporting.

Table 2. Laws and Associated Conditions Relevant to Proposed Amendment

Standard	Applicability	Conditions Applicable to RFA 2
OAR 345-022-0000 General Standard of Review	Applicable and complies.	(3) Design, construct and operation Facility in compliance with Site Certificate, Council rules and other permits.
OAR 345-022-0010 Organizational Expertise	Applicable and complies. There is no proposed change to the Certificate Holder who has been operating the Facility for 7 years in accordance with applicable Site Certificate conditions. See Section 6.2 for accompanying analysis.	N/A
OAR 345-022-0020 Structural Standard	Applicable and complies. See Section 6.3 which includes updated information regarding engineering studies and climate change.	(62) Inspect turbine and turbine tower components on a regular basis; maintain and repair as necessary.

**REQUEST FOR AMENDMENT 2 TO
THE SHEPHERDS FLAT CENTRAL SITE CERTIFICATE**

Standard	Applicability	Conditions Applicable to RFA 2
OAR 345-022-0022 Soil Protection	Applicable and complies. There would be no change to the Facility footprint and no permanent surface disturbance. The proposed changes do not modify the basis for the Council's previous findings for soil protection.	(50) Handling of hazardous materials (51) Hazardous material spill cleanup (77) Restore temporarily disturbed areas
OAR 345-022-0030 Land Use	Applicable and complies. There would be no change to the Facility footprint and all setbacks would still be met, therefore the proposed changes would not impact farm or ranch use in the area.	(36) Landowner consultation (37) Minimize land disturbance (38) Noxious weed control plan (40) Setback requirements (84) Revegetation plan
OAR 345-022-0040 Protected Areas	Applicable and complies. The proposed change does not modify the basis for the Council's previous finding for protected areas.	N/A
OAR 345-022-0050 Retirement and Financial Assurance	Applicable and complies. With the proposed change, the Certificate Holder is still able to restore the site to a useful, nonhazardous condition following permanent cessation of construction or operation of the Facility.	(7) Prevent development on site that would preclude restoration. (8) Maintain a bond or letter of credit until facility retirement. (30) Adjust the amount of bond or letter of credit on an annual basis.
OAR 345-022-0060 Fish and Wildlife Habitat	Applicable and complies. Proposed change would be within existing Site Boundary in areas surveyed for fish and wildlife habitat.	(77) Restore temporarily disturbed areas (83) Wildlife Monitoring and Mitigation Plan (84) Revegetation Plan (85) Habitat Mitigation Plan within habitat mitigation area (89) May not remove any trees greater than three feet in height (92) Five mile per hour speed limit within 1000 feet of WAGS habitat; 20 mile per hour speed limit on Facility roads

**REQUEST FOR AMENDMENT 2 TO
THE SHEPHERDS FLAT CENTRAL SITE CERTIFICATE**

Standard	Applicability	Conditions Applicable to RFA 2
OAR 345-022-0070 Threatened and Endangered Species	Applicable and complies. The Facility would be constructed within the approved Site Boundary where impacts to T&E species have already been reviewed.	(83) Wildlife Monitoring and Mitigation Plan (92) Five mile per hour speed limit within 1000 feet of WAGS habitat; 20 mile per hour speed limit on Facility roads
OAR 345-022-0080 Scenic Resources	Applicable and complies. The proposed change does not modify the basis for the Council's previous finding for Scenic Areas.	(93) Visual impact minimization (95) Exterior nighttime lighting
OAR 345-022-0090 Historic, Cultural and Archaeological Resources	Applicable and complies. Identified resources would be protected per applicable conditions.	(43) Final design map (45) Work cease due to historical find (46) Oregon Trail buffers
OAR 345-022-0100 Recreation	Applicable and complies. The proposed change does not modify the basis for the Council's previous finding for recreation areas.	N/A
OAR 345-022-0110 Public Services	Applicable and complies. Existing conditions apply to the Facility, which would be complied with for this RFA.	(27) Required permits (53) Annual fire training (54) Fire prevention equipment (55) Fire safety plans (56) Site plan to fire protection agencies (69) Site health and safety plan (70) Onsite security and communication with law enforcement (78) Operation onsite water compliance (100) Operation sanitary wastewater compliance
OAR 345-022-0120 Waste Minimization	Applicable and complies. The proposed change is not anticipated to increase the amount of solid waste and wastewater generated by the Facility.	(50) Handling of hazardous materials (51) Hazardous material spill cleanup (100) Discharge of sanitary wastewater (102) Operation waste management plan requirements

Standard	Applicability	Conditions Applicable to RFA 2
<p>OAR 345-024-0010 Public Health and Safety Standards for Wind Energy Facilities</p>	<p>Applicable and complies. The proposed turbine modifications would result in a lower maximum blade tip height and a higher minimum blade tip clearance than other facilities currently approved by the Council. No new conditions are proposed for operations and upgrading.</p>	<p>(53) Annual fire training (54) Fire prevention equipment (55) Fire safety plans (56) Site plan to fire protection agencies (57) FAA Notice of Proposed Alteration (58) Maintenance of turbine pads (59) Manufactures' handling procedures (60) Maintenance of self-monitoring devices (61) Locked turbine access doors (62) Operational safety-monitoring program (64) Enclosure and locking of substation (71) Notification of accidents and mechanical failures (81) Transmission line maintenance (93) Visual impact minimization (95) Exterior nighttime lighting</p>
<p>OAR 345-024-0015 Siting Standards for Wind Energy Facilities</p>	<p>Applicable and complies. The Facility is operational with existing infrastructure. The proposed changes are being designed in consideration of cumulative adverse environmental effects.</p>	<p>(58) Maintenance of turbine pads (86) Disturbance avoidance areas (93) Visual impact minimization (95) Exterior nighttime lighting</p>
<p>OAR 345-024-0090 Transmission Lines</p>	<p>Not Applicable. There would be no changes to the transmission line as part of this ADR.</p>	<p>N/A</p>
<p>OAR 340-035-0035 Noise</p>	<p>Applicable and complies.</p>	<p>(96) Construction equipment noise (97) Noise compliance (98) Noise complaint response system</p>
<p>Removal-Fill Law</p>	<p>Applicable and complies.</p>	<p>N/A</p>
<p>Water Rights</p>	<p>Applicable and complies.</p>	<p>(78) Operation water usage</p>

6.1 General Standard of Review – OAR 345-022-0000

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

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

on a resource or interest protected by the applicable standards the facility does not meet as described in section (2);

(b) Except as provided in OAR 345-022-0030 for land use compliance and except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council, the facility complies with all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a site certificate for the proposed facility. If the Council finds that applicable Oregon statutes and rules, other than those involving federally delegated programs, would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

....

(4) In making determinations regarding compliance with statutes, rules and ordinances normally administered by other agencies or compliance with requirements of the Council statutes if other agencies have special expertise, the Department of Energy shall consult with such other agencies during the notice of intent, site certificate application and site certificate amendment processes. Nothing in these rules is intended to interfere with the state's implementation of programs delegated to it by the federal government.

The Council previously found that the Facility complies with the General Standard of Review (ODOE 2008, ODOE 2010). For RFA 2, the requirements of OAR 345-022-0000 are addressed in the findings, analysis, and conclusions discussed in the following sections. As detailed in the following sections, RFA 2 meets all applicable standards and the Council can continue to find that the requirements of OAR 345-022-0000 are met.

Oregon's Renewable Portfolio Standard (RPS) establishes a requirement for how much of Oregon's electricity must come from renewable resources like solar. The current RPS is set at 50 percent by 2040. In addition to Oregon's RPS, private companies have their own renewable energy procurement policies, which increase the demand for renewable energy in Oregon. These public and private policies are intended to reduce greenhouse gas emissions, mitigate climate impact, and reduce reliance on carbon-based fuels. Wind generation and wind repowering projects like this upgrade to the Facility provide for future optimized, consistent energy output to help further these policies. In addition, a mission of Oregon's Climate Action Plan is to achieve a reduction in greenhouse gas emissions levels to at least 45 percent below 1990 emissions levels by 2035, and at least 80 percent below 1990 emissions levels by 2050. The Facility upgrade will contribute to the reduction of greenhouse gas emissions.

Caithness maintains a strong presence in the local community and thereby provides a positive economic impact and public benefit. For the entire Shepherds Flat Wind Farm, there are over 50 direct jobs on site, with over 30 personnel living in-state. The Shepherds Flat Wind Farm provides approximately \$40 million of capital annually to the local community, between lease payments to landowners and property taxes. In addition, Caithness maintains a strong alliance with Columbia

Gorge Community College, provides donations to local events and charities, and are active partners to local fire and police personnel. On balance, the Council may find that proposed change in RFA 2 promotes Oregon energy policy and provides a net public benefit, and may conclude that the Facility, as modified by RFA2, continues to comply with the general standard.

6.2 Organizational Expertise – OAR 345-022-0010

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

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

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

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

The Council previously found that the Certificate Holder, as a subsidiary of Caithness, has the organizational expertise to construct, operate and retire the proposed Facility in compliance with Council standards and conditions of the Site Certificate (ODOE 2008, ODOE 2009, ODOE 2010). This finding was based on a review of qualifications of Caithness personnel who would be responsible for the construction and operation of the Facility. There has been no change to Caithness's ownership, management, or holdings that would alter the previous conclusion.

Caithness has engaged in the permitting, design and construction of energy facilities throughout the United States, including Shepherds Flat Wind Farm, and has specialized in power plant development, operations, and asset management. Caithness' efforts have resulted in a portfolio of some of the premier energy projects in the United States, making Caithness one of the largest privately held independent power producers. Shepherds Flat and its wind energy subsidiaries have not received any regulatory citations in the course of constructing and operating their respective wind energy facilities.

Caithness has been collaborating with GE Renewables for this potential upgrade of turbine hardware. GE Renewables has completed over 2,500 repowering upgrades, covering 4 gigawatts of capacity at 36 different wind farms across the United States since 2017, and has a global installed base of over 60 gigawatts. GE Renewables anticipates repowering an additional 3 gigawatts of units for 11 customers at over 25 new wind farms by the end of 2020. On average, wind turbines repowered by GE Renewables have seen a 20 percent increase in annual energy production and 1.5 percent availability improvement from pre-repower performance. GE Renewables has the engineering, design, and financing expertise to enable developers to generate the maximum amount of clean, renewable energy in the most economic manner possible.

Third-party permits will not be required, since no new construction will be required for the Demo Turbine upgrades. There are no circumstances that would alter the basis for the Council's earlier findings. Therefore, Council may rely on its previous findings that the Certificate Holder continues to have the organizational expertise to construct, operate, and retire the Facility in compliance with Council standards and Site Certificate conditions.

6.3 Structural Standard – OAR 345-022-0020

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

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

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

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

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

(2) The Council may not impose the Structural Standard in section (1) to approve or deny an application for an energy facility that would produce power from wind, solar or geothermal

energy. However, the Council may, to the extent it determines appropriate, apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

(3) The Council may not impose the Structural Standard in section (1) to deny an application for a special criteria facility under OAR 345-015-0310. However, the Council may, to the extent it determines appropriate, apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

The Council previously found that the Certificate Holder has met the Structural Standard through compliance with Council standards and conditions of the Site Certificate (ODOE 2008, ODOE 2009). Prior to construction of the Facility, the Certificate Holder adequately characterized the seismic hazard risk of the site through an appropriate site-specific study (Site Certificate Condition 47), and designed, engineered, and constructed the Facility in accordance with the requirements set forth by the State of Oregon's Building Code Division, as well as all other applicable codes and design procedures, to meet or exceed the minimum standards required by the 2003 International Building Code (Site Certificate Condition 48). In addition, the Certificate Holder met Site Certificate Condition 49 by designing, engineering, and constructing the Facility to avoid dangers to human safety presented by non-seismic hazards. Temporary disturbance will be entirely in areas that were previously temporarily and permanently disturbed as part of Facility construction, and which were studied in the previous site-specific geotechnical investigations.

Consultation with the Oregon Department of Geology and Mineral Industries (DOGAMI) was initiated through ODOE and conducted on August 20, 2019. The draft DOGAMI consultation notes are included as Attachment 2. During consultation, DOGAMI requested information on how seismic ground motions that exceed the building code response spectrum will be addressed and requested disaster resilience and future climate change be addressed.

The Certificate Holder conducted a foundation update analysis on turbines 368 and 370 to review the original foundation calculations with the new loading documents to verify whether the existing turbine foundations can support the newly proposed loading. The evaluation was conducted by a qualified engineer using current code requirements and state-of-practice methods and is included as Attachment 3. The analysis was performed for approximately 8 years of existing operational service for the longer turbine blades, plus 20 years of additional operation time after the updated turbines are put into service. The loads were used to perform all of the design checks according to current industry standards using the existing foundation design.

Seismic consideration was based Site Class D as determined in the geotechnical report conducted for the Shepherds Flat Central Phase (Renewable Resources Consultants LLC, 2009) and on the current 2014 Oregon Structural Specialty Code, which relies on ASCE 7-10. The seismic ground acceleration factors (S_s and S_1) for the Facility are 0.435 and 0.173, respectively (see Attachment 4). During consultation with DOGAMI, it was requested that seismic ground motions that exceed the building code response spectrum are addressed. Subsequently, an analysis was conducted to look at seismic parameters for ASCE 7-16 using coordinates for turbines T-368 and T-370. The ASCE 7-16 analysis shows S_s and S_1 are 0.412 and 0.167, respectively, which is a slight decrease from ASCE 7-10 (see Attachment 4).

Although highly unlikely given the lack of recent activity, potential sources of long-period ground motions could include a significant event at or near recent faults associated with the Arlington-Shulter Butte faults and Columbia Hills structure as identified in the 2007 Seismic Hazard Assessment conducted as part of the original site certificate application (Shannon & Wilson, Inc. 2007). Given adequate seismic design as described above, potential impacts of long-period ground motions on very tall structures proposed with the facility are not expected.

In late August or early September 2019, the Certificate Holder will conduct an additional inspection of the foundations of turbines 368 and 370 by pulling back some soil and gravel in the area around both turbines to do a visual inspection; this will be within the permanent impact area of the turbine and completed during regular O&M activities. The results of these visual inspections of turbines 368 and 370 will be included in a report to be submitted to ODOE and DOGAMI by September 30, 2019. In addition, the Certificate Holder will continue to inspect all turbine and turbine tower components on a regular basis and maintain or repair turbine and turbine tower components as necessary in compliance with Site Certificate Condition 62. The regular inspections include a 10 percent check of each set of bolts on each turbine foundation, as well as a visual inspection of the outside of the foundation for damage and cracks.

The information requested for an ASC to address the Structural Standard has been revised since the time the Site Certificate was issued (OAR 345-021-0010(h)). Although the OAR-345-022-0020 standard itself has not been substantively modified, the Certificate Holder provides information below to address two new areas of concern requested for Exhibit H of new applications: disaster resilience and climate change impacts.

The Facility has been in operation for 7 years. During that time, climate change has not impacted the Facility. Future climate conditions, which may include greater-intensity rainfall events, fluctuations in typical annual snowpack (above or below normal), and warmer average annual temperatures, are also not anticipated to have a major impact on the geologic, geotechnical, and seismic conditions at the Facility. Sea level rise will not affect the Facility due to its location. The Facility's design accounts for future climate extremes during its projected lifespan. To provide disaster resiliency, the Certificate Holder has designed the repower to current code and taken into consideration seismic ground motions that exceed the building code response spectrum.

The Certificate Holder contracts with GE Renewables to perform O&M at the Facility. GE maintains an Emergency Preparedness and Fire Prevention Plan (see Attachment 5) for the Facility that is updated annually. The plan outlines the procedures to effectively respond to lightening and high winds, icing on blades or external equipment, cold weather work, and EMS coordination including on-site safety requirements and communication protocols. In addition, GE maintains instructions on how to respond to a significant event in an internal technical document titled Access and Evaluation of WTG after a Significant Event (Blade Collapse, Turbine Over Speed, Tower Damage). See Section 6.1 above for additional discussion on how the facility may help minimize the impacts of climate change. While it is hard to predict all future climatic conditions, current codes and design specifications are continuously evolving and go through annual technical reviews to ensure they are current to the latest technology and means and methods for renewable energy facilities.

Based on this updated information and analysis, the Council may conclude that the Facility, as modified by RFA2, continues to comply with the Structural Standard.

6.4 Soil Protection – OAR 345-022-0022

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

The Council previously found that the Certificate Holder has demonstrated an ability to construct, operate, and retire the Facility in compliance with Council standards and conditions of the Site Certificate (ODOE 2008, ODOE 2009, ODOE 2010). Exhibit I identified the soil conditions and land uses in accordance with the submittal requirements in ORA 345-021-0010 (1)(I) paragraphs (A) through (E). All work conducted at the site during construction followed requirements of the Erosion and Sediment Control Plan and the National Pollutant Discharge Elimination System 1200-C permit as required by Site Certificate Condition 73.

Upgrading the two Demo Turbines will cause temporary disturbance entirely in areas that were previously temporarily and permanently disturbed as part of Facility construction. Temporary disturbance will occur along the roads where the crane will move turbine components. Once the crane is removed from the site, the temporary, superficial disturbance will be revegetated in accordance with Condition 77, as is routinely done as part of O&M activities. As described above in Section 6.3, the Certificate Holder will pull soil and gravel away from turbines 368 and 370 for a visual inspection of the turbine foundations. This temporary disturbance will occur in the permanently disturbed areas around the turbine foundations and will not be revegetated, but put back to its pre-existing state.

During the Demo Turbine upgrade, potentially hazardous materials that could be used include lubricating oils. As with other O&M activities that are conducted at the Facility, the Certificate Holder will continue to follow Site Certificate Condition 50 to handle hazardous materials present on site in a manner that protects public health, safety, and the environment, and comply with all applicable environmental laws and regulations. Site Certificate Condition 51 will continue to be followed if an accidental spill or release were to occur, and spill kits will continue to be kept on site.

The proposed changes in this RFA do not affect the basis for the Council's previous findings of compliance with the Soil Protection Standard because the upgrade to the Demo Turbines will occur to two existing turbines within the previously approved and disturbed (during construction) Facility footprint. The Facility must still comply with the Soil Protection Conditions previously imposed on the Facility (as discussed above) as they relate to operation. The Facility is already constructed, and the Certificate Holder has met all pre-construction and construction conditions, and continues to meet operational conditions as documented in annual reporting. Therefore, the Council may conclude that the Facility, as modified by RFA 2, continues to comply with the Soil Protection Standard.

6.5 Land Use – OAR 345-022-0030

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

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

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

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

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

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

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

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

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

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

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

(c) The following standards are met:

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

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

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

(5) If the Council finds that applicable substantive local criteria and applicable statutes and state administrative rules would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

(6) If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300(11)(a)(C) to (E) or for a related or supporting facility that does not pass through more than one local government jurisdiction or more than three zones in any one jurisdiction, the Council shall apply the criteria recommended by the special advisory group. If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300(11)(a)(C) to (E) or a related or supporting facility that passes through more than one jurisdiction or more than three zones in any one jurisdiction, the Council shall review the recommended criteria and decide whether to evaluate the proposed facility against the applicable substantive criteria recommended by the special advisory group, against the statewide planning goals or against a combination of the applicable substantive criteria and statewide planning goals. In making the decision, the Council shall consult with the special advisory group, and shall consider:

(a) The number of jurisdictions and zones in question;

(b) The degree to which the applicable substantive criteria reflect local government consideration of energy facilities in the planning process; and

(c) The level of consistence of the applicable substantive criteria from the various zones and jurisdictions.

The Council previously concluded that the Facility complied with the Land Use Standard (ODOE 2008, ODOE 2009, ODOE 2010). Under OAR 345-021-0010(1)(k), an applicant must elect to address the Council's Land Use standard by obtaining local land use approvals under Oregon Revised Statutes (ORS) 469.504(1)(a), or by obtaining a Council determination under ORS 469.504(1)(b).

The Certificate Holder elected to have the Council make the land use determination for the Facility under ORS 469.504(1)(b) and OAR 345-022-0030(2)(b).

RFA 2 does not affect the Council's previous findings of compliance with the Land Use Standard, because the upgrades will occur to two existing turbines within the previously approved and disturbed (during construction) Facility footprint. The Facility must still comply with Land Use conditions previously imposed on the Facility as they relate to operation (see Table 2; Conditions 36, 37, 38, and 84). The Facility is operational and the Certificate Holder met all pre-construction and construction conditions. The Certificate Holder continues to meet operational conditions, as documented through annual reporting.

The Council found that the Facility, as amended through RFA 1, complies with the applicable substantive criteria from the Gilliam County Zoning and Land Development Ordinance (GCZO) and land use regulations. Compliance with the GCZO and county land use regulations is required by the statewide planning goals in effect on the date the application is submitted. The Facility also must comply with any Land Conservation and Development Commission administrative rules and goals, as well as any land use statutes directly applicable to the Facility. As stated in Section 1, RFA 2 involves only the aspects of the Facility located within the previously disturbed construction area at two existing turbines; it does not include any other facilities including the transmission line. Therefore, the Certificate Holder addresses the Land Use Standard accordingly, and does not review the transmission line or features other than those identified in Section 1.

In its evaluation of the Facility under the Land Use Standard (OAR 345-022-0030) in the ASC, and in the subsequent request for amendment, the Council considered the applicable, substantive criteria. Specifically, pertinent to RFA 2 which includes only proposed changes in Gilliam County, this includes the GCZO (adopted 1947 and amended through 2000; codified in 2005 and amended through 2017). The GCZO has not had changes to the applicable sections that would impact the Council's prior findings under the Land Use Standard. The changes to these documents either do not apply to the location or zoning of the Facility site, or to the land use classification of the Facility or the Facility improvements.¹

As stated in Article 7, Section 7.020(T)(7)(c)(2) of the GCZO, an amendment to the conditional use permit shall be required if the proposed Facility changes would:

- (a) Increase the land area taken out of agricultural production by an additional 20 acres or more;*
- (b) Increase the land area taken out of agricultural production sufficiently to trigger taking a Goal 3 exception;*
- (c) Require an expansion of the established Facility boundaries;*

¹ GCZO Amendments since RFA 1:

- Ordinance No. 2011-04; Effective Date November 2, 2011 – Amends the Comprehensive Plan and GCZLDO, which included a zone change from Exclusive Farm Use to Limited Industrial.
- Ordinance No. 2017-02; Effective Date May 3, 2017 – Adopts marijuana business regulations, pursuant to Oregon House Bill 3400.

(d) Increase the number of towers;

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

Under RFA 2, the Facility will not require an amendment to its Conditional Use Permit. This request does not seek to enlarge the existing Site Boundary, and there is no change to the previously approved maximum number of turbines, maximum generating capacity, or infrastructure locations of the Facility. The two Demo Turbines, once upgraded, will comply with all previous setback standards imposed through GCZO Sections 7.020, 4.020, and 7.010, as well as Site Certificate Condition 40 (Beseda 2019). The upgrading of the two Demo Turbines will occur at two existing turbines and will only impact land previously disturbed by construction of the Facility, and which is typically used for Facility O&M activities. Therefore, RFA 2 makes no changes that would alter the basis for Council's earlier findings.

As described herein, the changes proposed in RFA 2 comply with all applicable substantive criteria. Therefore, the Council can find that the Facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission. For the reasons discussed above, the Council can find that, with approval of RFA 2, the Facility continues to comply with the Land Use Standard.

6.6 Protected Areas – OAR 345-022-0040

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

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

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

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

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

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

- (f) National and state fish hatcheries, including but not limited to Eagle Creek and Warm Springs;*
- (g) National recreation and scenic areas, including but not limited to Oregon Dunes National Recreation Area, Hell's Canyon National Recreation Area, and the Oregon Cascades Recreation Area, and Columbia River Gorge National Scenic Area;*
- (h) State parks and waysides as listed by the Oregon Department of Parks and Recreation and the Willamette River Greenway;*
- (i) State natural heritage areas listed in the Oregon Register of Natural Heritage Areas pursuant to ORS 273.581;*
- (j) State estuarine sanctuaries, including but not limited to South Slough Estuarine Sanctuary, OAR chapter 142;*
- (k) Scenic waterways designated pursuant to ORS 390.826, wild or scenic rivers designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and rivers listed as potentials for designation;*
- (l) Experimental areas established by the Rangeland Resources Program, College of Agriculture, Oregon State University: the Prineville site, the Burns (Squaw Butte) site, the Starkey site and the Union site;*
- (m) Agricultural experimental stations established by the College of Agriculture, Oregon State University, including but not limited to:*
- Coastal Oregon Marine Experiment Station, Astoria.*
 - Mid-Columbia Agriculture Research and Extension Center, Hood River.*
 - Agriculture Research and Extension Center, Hermiston.*
 - Columbia Basin Agriculture Research Center, Pendleton.*
 - Columbia Basin Agriculture Research Center, Moro.*
 - North Willamette Research and Extension Center, Aurora.*
 - East Oregon Agriculture Research Center, Union.*
 - Malheur Experiment Station, Ontario.*
 - Eastern Oregon Agriculture Research Center, Burns.*
 - Eastern Oregon Agriculture Research Center, Squaw Butte.*
 - Central Oregon Experiment Station, Madras.*
 - Central Oregon Experiment Station, Powell Butte.*
 - Central Oregon Experiment Station, Redmond.*
 - Central Station, Corvallis.*

Coastal Oregon Marine Experiment Station, Newport.

Southern Oregon Experiment Station, Medford.

Klamath Experiment Station, Klamath Falls.

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

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

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

....

The Council previously found that the Facility is not located in any protected area listed in OAR 345-022-0040 (ODOE 2008). Six protected areas are located within 20 miles of the Facility, four of which are located over 17 miles from the Site Boundary; impacts were deemed negligible. The remaining two sites (within 2 miles of the Site Boundary) had potential for impact: Willow Creek Wildlife Area and the Horn Butte U.S. Bureau of Land Management (BLM) Area of Critical Environmental Concern (ACEC) (described in Exhibit L of the ASC; Caithness Shepherds Flat, LLC 2007). The two sites were determined to have potential impacts from construction noise (Horn Butte has long-billed curlew nesting sites, which are a State Sensitive Vulnerable species) and visual impacts (Caithness Shepherds Flat, LLC 2007). No other impacts were found to occur, including impacts from operation noise, construction or operation traffic, construction or operation water, construction or operation wastewater, or air emissions. The Council found that the design, construction, and operation of the Facility was not likely to result in significant adverse impact to any protected area (ODOE 2008, ODOE 2009, ODOE 2010). The Council did not impose any conditions related to this standard. The change proposed in RFA 2 does not alter the basis of this finding.

One new protected area within the analysis area (see Figure 3) has been added under OAR 345-022-0040 since the previous findings were reached: Cottonwood Canyon State Park. Additionally, the Willow Creek Wildlife Area and the Horn Butte BLM ACEC are within the 20-mile analysis area of the two Demo Turbines (Figure 3). The change proposed in RFA 2 is not likely to result in significant adverse impacts to these protected areas. Upgrading activities will be short-term and performed during regular O&M activities, therefore the previously analyzed construction noise impacts are nonapplicable. The upgrades will increase the blade length and the overall turbine height (proposed height change from 135 to 150 meters) compared to the dimensions of the existing turbines installed at the Facility; however, the new height will remain lower than the previously approved maximum turbine height (150 meters) on which the original visual analysis was based. Therefore, RFA 2 will not alter the findings of the previous visual impact analysis, thus will not result in a new, adverse visual impact that was not previously evaluated by the Council.

RFA 2 will not introduce new operation noise, construction or operation traffic, construction or operation water, construction or operation wastewater, or air emission impacts that are different from what was previously authorized for the Facility. Traffic demands on local roads and highways in the vicinity of the Facility are low, and any effects during the Demo Turbine upgrades and operation are expected to be temporary and negligible, and will not adversely affect protected areas. Water use will continue to be primarily for sanitary purposes, and would be supplied by on-site wells. Sanitary wastewater would continue to be discharged to permitted on-site septic systems. This request does not seek to enlarge the existing Site Boundary, and there is no change to the previously approved maximum number of turbines, maximum generating capacity, or infrastructure locations of the Facility. Therefore, the proposed amendment makes no changes that would alter the basis for the Council's earlier findings, and the Council may find that this amendment request complies with OAR 345-022-0040.

6.7 Retirement and Financial Assurance – OAR 345-022-0050

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

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

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

The Council previously found that the Facility, taking into account mitigation, could be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation (ODOE 2008, ODOE 2009). In addition, the Certificate Holder has obtained a bond or letter of credit in a form that satisfies Site Certificate Condition 8, and will continue to adjust the amount of the bond or letter of credit on an annual basis per Site Certificate Condition 30.

The total site restoration cost for the Facility was originally estimated at \$9,076,000 (in 2010 dollars; ODOE 2010) and has been updated annually since construction per Site Certificate Condition 30. Of this amount, approximately \$4,106 was estimated per turbine for removal of nacelles and blades. Given that only two turbines are being upgraded, having blades and related equipment exchanged, the estimated impact on the full site restoration costs resulting from wrecking, hauling, and disposing of the larger turbine blades would not significantly alter the overall cost of site restoration, and no change is needed to the current decommissioning cost estimate. As such, the Council may find that the Facility, as modified, meets the Retirement Standard.

6.8 Fish and Wildlife Habitat – OAR 345-022-0060

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

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

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

6.8.1 Potential Impacts to Habitat

The changes to the Facility from RFA 2 will not result in additional habitat impacts in the analysis area (see Figure 3.), and therefore the Facility continues to satisfy the standard without need for additional habitat mitigation. The proposed increase in blade length at the two Demo Turbines does not present the potential to disturb habitat while in operation. As described in Section 3.0, the nature, duration, and extent of the disturbance to habitat related to the installation of the two Demo Turbines will be temporary, will occur over the course of approximately 2 weeks per turbine, will be limited to areas previously disturbed during construction, and be performed as part of routine O&M activities.

The habitat in the immediate vicinity of the Demo Turbines is Category 3 Grassland and Rabbitbrush Steppe, as described in the ASC and as shown in Figure 4. Vegetation disturbance in this area is projected to occur in an approximately 0.98-acre area (0.47 acre Category 3 Grassland; 0.46-acre Category 3 Rabbitbrush Steppe), primarily along the edges of Facility roads and turbine pads. The Certificate Holder has confirmed that there has not been a significant change in habitat types by comparing the habitat types described in the ASC with recent aerial imagery (Google Earth 2019). The disturbance will not result in different habitat types being affected than were affected during initial construction. There are no new areas or resources (e.g., different habitat types) to consider that were not previously evaluated. The disturbance area required for the upgrade will be within the previously disturbed areas from construction of the Facility. Areas temporarily disturbed by initial construction and subsequent wildfires have been revegetated, and are monitored for success in continuing compliance with Condition 84. No trees greater than 3 feet in height will be removed in continued compliance with Condition 89. The proposed replacement of turbine elements will not change the overall footprint of the Facility. Permanent impacts due to the construction of the Facility have been addressed in the Habitat Mitigation Plan. No permanent impacts to habitat will occur due to these O&M operations. Therefore, no updates to the Habitat Mitigation Plan are necessary. All temporarily disturbed areas will be revegetated according to Condition 77, as is routinely done as part of O&M activities, without need for additional habitat mitigation.

6.8.2 Potential Impacts to State-Sensitive Wildlife Species

The Certificate Holder has reviewed the status of state-sensitive wildlife species with the potential to occur within the Site Boundary, and presents an updated table (Table 3). Together, ASC Table P-2 and RFA 1 Table 1 provide an extensive list of species, inclusive of species with no current special status either federally or within the state, and inclusive of species with no habitat available within

the Site Boundary, as described in both documents (ODOE 2008, ODOE 2009). RFA 1 Table 1 also includes state-threatened, endangered, and candidate species, which are addressed in this amendment in Section 6.9. This updated list (Table 3) includes only species with current special status in the Columbia Basin Ecoregion and with available habitat within the Site Boundary.

Table 3. State Special-Status Species with the Potential to Occur within the Site Boundary

Common Name	Scientific Name	Federal Status ¹	Status in Columbia Basin - Columbia Plateau Ecoregion ²
Mammals			
Hoary bat	<i>Lasiurus cinereus</i>	SOC	S
Pallid bat	<i>Antrozous pallidus pacificus</i>	SOC	S
Silver-haired bat	<i>Lasionycteris noctivagans</i>	SOC	S
Spotted bat	<i>Euderma maculatum</i>	SOC	S
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SOC	S
Birds			
Brewer's sparrow	<i>Spizella breweri</i>	BCC	S
Burrowing owl (western)	<i>Athene cunicularia hypugaea</i>	SOC	SC
Common nighthawk	<i>Chordeiles minor</i>	none	S
Ferruginous hawk	<i>Buteo regalis</i>	BCC, SOC	SC
Grasshopper sparrow	<i>Ammodramus savannarum</i>	none	S
Lewis's woodpecker	<i>Melanerpes lewis</i>	BCC, SOC	SC
Loggerhead shrike	<i>Lanius ludovicianus</i>	BCC	S
Long-billed curlew	<i>Numenius americanus</i>	BCC	SC
Sagebrush sparrow	<i>Artemisiospiza nevadensis</i>	BCC	SC
Swainson's hawk	<i>Buteo swainsoni</i>	none	S
Reptiles / Amphibians			
Northern sagebrush lizard	<i>Sceloporus graciosus graciosus</i>	SOC	S
Sources: OCS 2016; ODFW 2016; ORBIC 2016; OWE 2019; USFWS 2008, 2019.			
1. Federal Status: T = Threatened, SOC = Species of Concern, BCC = Bird of Conservation Concern.			
2. Oregon Department of Fish and Wildlife Status: SC = Sensitive-Critical Species, S = Sensitive Species.			

Notable is the addition of the hoary bat, Townsend's big-eared bat, and Brewer's sparrow; all three species are now sensitive in the Columbia Basin Ecoregion. The hoary bat roosts in the foliage of trees, generally in late-successional forest habitat (Csuti et al. 2001, OCS 2016). This species is most likely to occur within the Site Boundary as a transient during fall migration. Townsend's big-eared bat roosts in caves, mines, and isolated buildings, and will occasionally roost in trees (Csuti et al. 2001, OCS 2016). This species is also a potential transient.

Brewer's sparrow nests in sagebrush shrubland, generally with a canopy height of more than 5 feet, often associated with big sagebrush, in particular (OCS 2016, Rotenberry et al. 1999). This habitat is

limited within the Site Boundary. This migrant species is generally absent from Oregon from October through early March (Sullivan et al. 2009).

The common nighthawk, previously included in the ASC and RFA 1 without a special status designation at the federal or state level, is now sensitive in the Columbia Basin Ecoregion. Also a migrant species, the common nighthawk is generally absent from Oregon from mid-September through mid-May (Sullivan et al. 2009). Table 3 also reflects the updated species name for the sagebrush sparrow, which was listed in RFA 1 as sage sparrow (*Amphispiza belli*; Martin and Carlson 1998).

Potential impacts to these species during operation will continue to be avoided and minimized by existing Site Certificate measures, as specified in the Wildlife Monitoring and Mitigation Plan (WMMP), as required by Condition 83. The blade replacement process is projected to occur during the fall, which avoids sensitive time periods for nesting raptors (including Swainson's hawks, which winter in South America and are rarely recorded in Oregon during October; Sullivan et al. 2009) and all ground-nesting bird species. While no impact to raptors is anticipated during the upgrade process, a review of nearby raptor nests is presented here per the request of ODFW (Steve Cherry, personal communication, July 25, 2019). The most recent raptor nest survey report (performed in 2017 in compliance with Condition 83) identified one special-status species (Swainson's hawk) nesting in nine locations within 2 miles of the Site Boundary (Alsup and Smith 2018). The closest Swainson's hawk nest was found in a juniper located approximately 0.9 miles from Demo Turbine 368, and approximately 1.2 miles from Demo Turbine 370. Other nesting raptor species were American kestrel, red-tailed hawk, and great-horned owl. Neither bald nor golden eagles, which are protected by the federal Bald and Golden Eagle Protection Act, were found to be nesting within the search area in 2017. The historic golden eagle territory to the northwest of the Demo Turbines in Eightmile Canyon was occupied by red-tailed hawks in 2017. If the time period for the blade replacement activities at the Demo Turbines shifts to overlap with the nesting period for state-sensitive raptor species that have the potential to occur within the Site Boundary, such as the Swainson's hawk and ferruginous hawk, the Certificate Holder will consult with ODFW (Steve Cherry, personal communication, July 25, 2019).

The effect of turbine size on bird and bat collision rates remains unclear (AWWI 2017), particularly with respect to blade-only replacements without corresponding changes to hub height. A summary of findings from the most relevant studies are provided in Table 4. These studies reveal that numerous factors can influence avian and bat fatality rates at a given Facility, and indicate that difficulty remains in isolating the effect of a single variable.

Table 4. Summary of Studies Investigating the Effects of Turbine Size on Bird and Bat Mortality

Reference	Turbine Size Variables Investigated	Range of Variables Investigated	Findings
Barclay et al. 2007	Hub height	24-94 meters	Bat mortality increased with hub height; No effect on bird mortality
	Rotor swept area	167-5027 meters ²	No effect on bird or bat mortality
	Rotor diameter	15-80 meters	No effect on bird or bat mortality
de Lucas et al. 2008	Hub height	18-36 meters	Bird mortality increased with hub height
Everaert 2014	Rotor swept area (meters ²)	398-5281 meters ²	No effect on bird mortality
Loss et al. 2013	Hub height	36-80 meters	Bird mortality increased with hub height
Zimmerling and Francis 2016	Total turbine height	117-136 meters	No effect on bat mortality

While no single variable neatly correlates to collision risk to birds and bats, the proposed change to the Facility-wide rotor-swept area is a small-scale one – an increase of only 0.07 percent (1,004,444 square meters existing rotor-swept area; 1,011,418 square meters proposed) at only two out of 116 turbines; therefore, differences in avian and bat impacts as a result of the turbine modifications may be undetectable. The WMMP includes provisions for monitoring both bird and bat fatalities during operations. The Certificate Holder has demonstrated compliance with Condition 83 and remains committed to ongoing reporting and monitoring as specified in the WMMP. ODFW has requested that the Certificate Holder discuss the need for potential monitoring at these Demo Turbines if a larger repowering effort does not occur, and the Certificate Holder is committed to such coordination if repowering plans change (Steve Cherry, personal communication, July 25, 2019).

6.9 Threatened and Endangered Species – OAR 345-022-0070

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and

(2) For wildlife species that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction and operation of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.

The Certificate Holder has reviewed the status of state-endangered, threatened, and candidate species with the potential to occur within the Site Boundary, and presents an updated table (Table 5).

Table 5. State-Listed Species with the Potential to Occur within the Site Boundary

Common Name	Scientific Name	Federal Status ¹	State Status ^{2, 3}
Mammals			
Washington ground squirrel	<i>Uroticellus washingtoni</i>	SOC	E
Plants			
Disappearing monkeyflower	<i>Mimulus evanescens</i>	none	C
Dwarf evening primrose	<i>Camissonia pygmaea</i>	SOC	C
Hepatic monkeyflower	<i>Mimulus jungermannoides</i>	SOC	C
Laurence's milk-vetch	<i>Astragalus collinus var. laurentii</i>	SOC	T
Sessile mousetail	<i>Myosurus sessilis</i>	SOC	C
Sources: ODA 2018, ODFW 2018, USFWS 2019.			
1. USFWS Federally Listed Species: SOC = Species of Concern.			
2. ODFW State Listed and Sensitive Species: E = Endangered, T = Threatened, S=Sensitive, SC = Sensitive Critical.			
3. ODA State Listed Plant Species: T=Threatened, E=Endangered, C=Candidate.			

ODFW lists 30 fish and wildlife species as threatened and endangered under ORS 496.172(2) (ODFW 2018). This includes 26 species associated with aquatic and marine environments that are absent from the Site Boundary. Of the remaining species, only the Washington ground squirrel (WAGS) is listed by the ORBIC (2016) as occurring in the Columbia Plateau Ecoregion (Table 4).

No state-threatened, endangered, or candidate plant species have been found to occur at the Facility (Table 4). The Council previously found that the design, construction, and operation of the Facility are not likely to cause a significant reduction in the likelihood of survival or recovery of Laurence's milk-vetch (*Astragalus collinus var. laurentii*), which has the potential to occur within limited habitats within the Site Boundary (ODOE 2008, ODOE 2009). No suitable habitats for the other state-threatened, endangered or candidate plant species that have the potential to occur (based on range) have been identified within the Site Boundary. Revegetated areas of potential disturbance around the two Demo Turbines are not suitable habitat for any state-threatened, endangered, or candidate plant species, including Laurence's milk-vetch; therefore, no adverse effect to threatened, endangered, or candidate plant species is expected as a result of RFA 2.

A single WAGS burrow was located within the Site Boundary, as described in the ASC and RFA 1 (ODOE 2008, ODOE 2009). This burrow is located more than 4 miles southeast of the two Demo Turbines. This colony was monitored in compliance with Conditions 86 and 83, and was determined to be active on February 14, 2012, and inactive on June 6, 2012. Revegetated areas of potential disturbance around the two Demo Turbines are not suitable habitat for WAGS. No additional WAGS colonies have been identified within the Site Boundary; therefore, as stated in the Final Orders (ODOE 2008, ODOE 2009), the operation of the Facility is unlikely to cause a significant reduction in the likelihood of survival or recovery of this species.

No additional state-endangered, threatened, or candidate wildlife species have been recorded within the Site Boundary. Revegetated areas of potential disturbance around the two Demo Turbines are not suitable habitat for these species. The proposed decrease in blade ground clearance at the two Demo Turbines presents no additional risk to any of these species. The proposed amendment requests no changes that would alter the basis for the Council's earlier findings, and therefore, the Council may find that the amendment request satisfies OAR 345-022-0070.

6.10 Scenic Resources – OAR 345-022-0080

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic resources and values identified as significant or important in local land use plans, tribal land management plans and federal land management plans for any lands located within the analysis area described in the project order.

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

The Council previously found that the design, construction, and operation of the Facility, as amended, was not likely to result in significant adverse impact to scenic resources and values identified as significant or important in applicable federal land management plans or in local land use plans in the analysis area after taking mitigation into account and subject to the Site Certificate

conditions (ODOE 2008, ODOE 2009, ODOE 2010). The change proposed in RFA 2 does not alter the basis of this finding.

As noted in the Final Order on the ASC, the Certificate Holder completed a Zone of Visual Influence (ZVI) analysis (for turbines up to 492 feet or 150 meters tall) within a 30-mile analysis area to evaluate potential visual impacts related to the change in existing visual character that would result from operation of the Facility. The 30-mile analysis area was specified by the Project Order, issued October 16, 2006, based on Council rules in effect at that time. The Council amended OAR 345-001-0010(57) in May 2007, reducing the “study area” for scenic resources to the area within the site boundary and the area within 10 miles from the site boundary. The Study Area for RFA 2 is discussed in Section 3.3 and shown on Figure 3, and is 10-miles from the Demo Units. Morrow, Gilliam, and Klickitat counties are the only counties within the 10-mile analysis area around the Demo Turbine locations (Figure 3). The only land use or management plans that have been updated since the last amendment for the Facility within the analysis area is Gilliam County (updated in 2017). The update did not identify additional scenic resources or include provisions that would warrant changes to the previous analyses of scenic resources in Gilliam County.

The changes proposed in RFA 2 will not change the Council’s previous findings regarding potential visual impacts to identified scenic resources. Upgrading the turbines will increase the blade length and the overall turbine height (proposed height change from 135 to 150 meters or 492 feet) relative to the dimensions of the existing turbines installed at the Facility. However, the new height for the Demo Turbines will remain at the maximum turbine height approved by the Council. The ZVI analysis reported in the Final Order on the ASC was for turbines up to 492 feet in height (ODOE 2008). Therefore, the conclusion of the previous visual impact analysis that the Facility with 492-foot turbines would not result in a significant adverse impact to important scenic resources applies to RFA 2.

This request does not seek to enlarge the existing Site Boundary of the Facility. The footprint required for the upgrading will be within the previously disturbed areas from construction of the Facility and will occur during regular O&M activities. There is no change to the previously approved maximum number of turbines, maximum turbine height, maximum generating capacity, or infrastructure locations of the Facility. Consequently, the proposed amendment requests no changes that would alter the basis for Council’s earlier findings, and therefore, Council may find that the amendment request satisfies OAR 345-022-0080.

6.11 Historical, Cultural and Archaeological Resources – OAR 345-022-0090

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:

(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;

(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in 358.905(1)(c); and

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

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

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

The analysis area for Exhibit S of RFA 2 is limited to the footprint of the two Demo Turbines. This area is within the Site Boundary that defined the analysis area examined in Exhibit S of the ASC (Caithness Shepherds Flat, LLC 2007).

The Certificate Holder provided information regarding historic, cultural, and archaeological resources for the analysis area (all areas within the Site Boundary) in Exhibit S of the ASC (Caithness Shepherds Flat, LLC 2007). In the Final Order on the ASC for the Shepherds Flat Wind Farm, the Council reviewed cultural resource surveys of the areas within the Site Boundary (ODOE 2008). Cultural resource studies were conducted in support of the ASC and in consultation with the State Historic Preservation Office, the Confederated Tribes of Warm Springs and the Confederated Tribes of the Umatilla Indian Reservation (Ellis et al. 2006, Adams et al. 2008, AINW 2008). An additional survey of Facility areas (DePasqual and Nickoloff 2012) was conducted following award of the Site Certificate, but prior to construction.

Ellis et al. (2006), Adams et al. (2008), and DePasqual and Nickoloff (2012) surveyed the analysis area of RFA 2. No cultural resources were identified by any of the surveys within or near the analysis area. The Council adopted Site Certificate conditions, including mitigation and inadvertent discovery measures (Conditions 43, 45, and 46 applicable to operations) to address the Historic, Cultural and Archaeological Resources Standard; thus the Facility satisfied the Historic, Cultural and Archaeological Resources Standard (ODOE 2008, ODOE 2009, ODOE 2010). The Facility is already constructed such that the Certificate Holder met all pre-construction and construction conditions, and will continue to meet operation conditions as documented through annual reporting.

The upgrading of the two Demo Turbines will not increase ground disturbance from what was previously surveyed or disturbed, or otherwise alter the Council's previous findings regarding the Historic, Cultural and Archaeological Resources Standard. The surface area and depths that will be disturbed during upgrading were previously disturbed from construction of the Facility and previously approved in the ASC. The Certificate Holder will continue to adhere to the Site Certificate conditions, specifically those regarding inadvertent discoveries.

The two upgraded Demo Turbines will not affect cultural resources. Upgrading will increase the blade length and the overall turbine height (proposed height change from 135 to 150 meters) relative to the dimensions of the existing turbines installed at the Facility. The difference in height for the two Demo Turbines will be minor, however, and will not likely be noticeable to observers in the vicinity of any nearby cultural resources. In addition, the new height will remain lower than the maximum turbine height approved under the Final Order on the ASC, which provided the basis for the original impact analysis (ODOE 2008). This request does not seek to enlarge the existing Site Boundary or to change the previously approved maximum number of turbines, maximum turbine height, maximum generating capacity, or infrastructure locations of the Facility. No cultural resources were identified within the analysis area during surveys or previous construction activities, and although no impacts are expected, impacts to any unidentified cultural resources protected by the Council siting standards will continue to be avoided through implementation of the inadvertent discovery condition of the Site Certificate (Condition 45). Thus, the proposed amendment makes no changes that would alter the basis for Council's earlier findings. No changes to the Site Certificate conditions related to the Historic, Cultural and Archaeological Resources Standard are required and OAR 345-022-0090 is met.

6.12 Recreation – OAR 345-022-0100

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

- (a) Any special designation or management of the location;*
- (b) The degree of demand;*
- (c) Outstanding or unusual qualities;*
- (d) Availability or rareness;*
- (e) Irreplaceability or irretrievability of the opportunity.*

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

The Recreation Standard requires the Council to find that the design, construction, and operation of a facility will not likely result in significant, adverse impacts to important recreational opportunities. Therefore, the Council's Recreation Standard applies to only those recreation areas that the Council deems important. The Council previously found that the design, construction, and operation of the Facility, as amended, were not likely to result in significant adverse or direct impact to important recreational opportunities in the analysis area (ODOE 2008, ODOE 2009, ODOE 2010). The Council did not impose any conditions related to this standard. The Council did not identify any recreational opportunities within the 5-mile analysis area as important according to

the factors listed in the Recreation Standard. Therefore, the Council previously found that the Facility would have no direct effect on any important recreational opportunities in the analysis area. The change proposed in RFA 2 does not alter the basis of this finding.

The site of the Demo Turbines locations and corresponding 5-mile analysis area (Figure 3) offers no new or previously recognized recreational opportunities. This request does not seek to enlarge the existing Site Boundary, and there is no change to the previously approved maximum number of turbines, maximum generating capacity, or infrastructure locations of the Facility. The proposed amendment makes no changes that would alter the basis for the Council's earlier findings, or its conclusion that the Facility would not likely result in a significant adverse impact to any important recreational opportunities in the analysis area, and therefore the amendment request meets the requirement of OAR 345-022-0100.

6.13 Public Services – OAR 345-022-0110

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.

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

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

The Council relied on information provided in the ASC and in subsequent amendment requests to conclude that the Public Services Standard was met for the existing Facility (Caithness Shepherds Flat, LLC 2007, ODOE 2008, ODOE 2009, ODOE 2010). This information included measures to mitigate impacts and the ability of providers to provide public services. The Council adopted Site Certificate conditions to address the Public Services Standard: Conditions 27, 53, 54, 55, 56, 69, 70, 78, and 100 are directly applicable to operations and upgrading of the two Demo Turbines (see Table 2). The Facility is already constructed such that the Certificate Holder met all pre-construction and construction conditions and is meeting and will continue to meet operation conditions as documented through annual reporting. The upgrading and operation of the two Demo Turbines does not affect the Certificate Holder's ability to comply with the Site Certificate conditions as written.

The proposed upgrades to the two Demo Turbines will not affect any aspect of the analysis conducted to support issuance of the Site Certificate with regards to public services. The Facility is

already constructed, and the Demo Turbine upgrades will be conducted as part of O&M. The upgrade work for the Facility will be short-term and temporary; no operations staff changes are expected following the installation of the two Demo Turbines, and therefore no new, permanent residents would require housing, schools, or other services. Water will continue to be provided by an on-site well, and sanitary water will be disposed of at on-site septic systems. RFA 2 makes no changes to the Facility configuration, and there are no other circumstances that would alter the basis for the Council's earlier determination. Accordingly, the Council may find that the proposed amendment meets OAR 345-022-0110 and no changes to the Site Certificate conditions related to the Public Services Standard are required.

6.14 Waste Minimization – OAR 345-022-0120

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

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

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

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

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

The Certificate Holder provided plans in Exhibit V of the ASC for solid waste and wastewater management during construction and operation of the Facility (Caithness Shepherds Flat, LLC 2007). The Council adopted Site Certificate conditions to address the Waste Minimization Standard: Conditions 50, 51, 100, and 102 are directly applicable to operations and upgrading the Demo Turbines. The Facility is already constructed such that the Certificate Holder met all pre-construction and construction conditions, and will continue to meet operation conditions as documented through annual reporting. The Council previously found that the accumulation, storage, disposal, and transportation of waste generated by construction and operation of the Facility are not likely to have an adverse impact on surrounding and adjacent areas (ODOE 2008).

Solid waste from the upgrading of two turbines during regular O&M activities will not exceed the existing amount of solid waste generated from the Facility. Most solid waste will be removed from the site and reused, recycled, or disposed of at an appropriate facility and in compliance with U.S. Environmental Protection Agency standards. Metal components will be transported to a smelter to

be melted down, and fiberglass components will be cut to standard truck-load size on site (with dust control) and transported to a certified fiberglass landfill. Any batteries, oils, light bulbs, or e-waste will be put in appropriate waste disposal bins provided by U.S. Ecology and transported to GE Renewables' approved recycling and disposal facilities. Water used during upgrading would continue to be discharged to on-site septic systems, and water would not be discharged to wetlands, lakes, rivers, or streams. Hazardous materials that could potentially be used at the Facility during upgrading include lubricating oils.

RFA 2 will not impact the Facility's ability to comply with existing Site Certificate conditions for waste management, and is not anticipated to increase the amount of solid waste and wastewater generated by the Facility. This request does not seek to enlarge the existing Site Boundary, and the upgrading will be short-term and temporary during regular O&M activities. There is no change to the previously approved maximum number of turbines, maximum generating capacity, or infrastructure locations from what was originally authorized. The two upgraded Demo Turbines will not increase the amount of solid waste or wastewater that was previously approved for the Facility and will not change the Council's previous analysis of waste minimization. Therefore, Council may rely on its prior analysis to conclude that OAR 345-022-0120 is met and no changes to the Site Certificate conditions related to the Waste Minimization Standard are required.

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

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

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

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

The Council previously found that the Facility complies with the Public Health and Safety Standards for wind energy facilities (ODOE 2008, ODOE 2009, ODOE 2010). This finding was based on the conclusion that the Certificate Holder could design, construct, and operate the Facility to preclude structural failure of the tower or blades that could endanger public safety, to have adequate safety devices and testing procedures designed to warn of impending failure, and to minimize the consequences of such failure. RFA 2 would not have any additional impact on compliance with the Public Health and Safety Standard for wind facilities.

The proposed changes are on two existing turbines in rural eastern Oregon, located entirely on private property that restricts public access to turbine and other Facility component locations in compliance with Site Certificate Conditions 61 and 64. The Facility is already constructed such that the Certificate Holder met all pre-construction and construction conditions, will continue to meet

operation conditions as documented through annual reporting. The Facility currently excludes members of the public from close proximity to the turbine blades and electrical equipment through a combination meeting all turbine setbacks, the Facility's location on private land, and the limited population base in the vicinity. The Demo Turbines would be operated in the same manner after upgrades are complete. The turbine modifications would be designed with several levels of built-in safety and comply with the codes set forth by the Occupational Safety and Health Administration and American National Standards Institute.

In accordance with Site Certificate Condition 62, an operational safety-monitoring program continues to be implemented to monitor and repair turbines and turbine components as necessary to protect public safety. In accordance with Site Certificate Condition 59, the Certificate Holder continues to follow the manufactures' handling instructions and procedures for new turbine components needed for upgrading. Per Site Certificate Condition 71, if any accidents or mechanical failures occur, they will be reported to ODOE and Gilliam and Morrow counties. Additionally, no changes to the transmission lines are proposed, but the lines will continue to be monitored and maintained per Site Certificate Condition 81 to protect the public from exposure to electromagnetic fields.

The fire risks for Facility configuration are similar to the risks previously considered by the Council. Site Certificate conditions addressing fire protection and response in relation to operations include Site Certificate Conditions 53, 54, 55, 56, 58, and 60. The changes requested by RFA 2 would not result in new fire risks that would be different from the types of risk already considered by the Council; therefore, no new fire protection conditions are necessary.

Because the upgrading of the two Demo Turbines will alter the existing turbine height, the Certificate Holder will be required to submit a Notice of Alteration to the FAA, per Site Certificate Condition 57. As done previously, the results of this notice will be provided to the Oregon Department of Agriculture and the Boardman Military Operating Area, which lies east of the two Demo Turbines. Determinations of No Hazard to Air Navigation have been received for all previously constructed turbines at the Facility. Although the Certificate Holder does not anticipate any issues, should the FAA find that the impact of one or both of these turbines exceed an acceptable threshold of impact, mitigation options are available and will be implemented.

Upgrading will increase the blade length and the overall turbine height on two turbines relative to the dimensions of the existing turbines at the Facility. However, the new height will remain lower than the previously approved maximum turbine height on which the original visual analysis was based. The proposed modifications to the two turbines would result in a maximum blade tip height that is lower than most turbine dimensions that are currently approved by the Council. Similarly, this RFA requests a modified minimum blade tip clearance that is higher than the minimum blade tip clearance currently approved for most facilities under Council jurisdiction. In accordance with Site Certificate Conditions 93 and 95, visual impacts from the taller turbines will continue to be minimized through implementation of exterior nighttime lighting policies, prohibition of advertising material at the Facility, and maintenance of on-site signage.

This request does not seek to enlarge the existing Site Boundary, and there is no change to the previously approved maximum number of turbines, maximum generating capacity, or infrastructure locations from what was originally authorized. The proposed amendment makes no changes that would alter the basis for the Council's earlier findings, nor change the Certificate Holder's ability to comply with the intent of any requirements and conditions issued by the Council regarding public health and safety. Therefore, the Council may find that OAR 345-024-0010 is satisfied.

6.16 Siting Standards for Wind Energy Facilities – OAR 345-024-0015

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

- (1) Using existing roads to provide access to the facility site, or if new roads are needed, minimizing the amount of land used for new roads and locating them to reduce adverse environmental impacts.*
- (2) Using underground transmission lines and combining transmission routes.*
- (3) Connecting the facility to existing substations, or if new substations are needed, minimizing the number of new substations.*
- (4) Designing the facility to reduce the risk of injury to raptors or other vulnerable wildlife in areas near turbines or electrical equipment.*
- (5) Designing the components of the facility to minimize adverse visual features.*
- (6) Using the minimum lighting necessary for safety and security purposes and using techniques to prevent casting glare from the site, except as otherwise required by the Federal Aviation Administration or the Oregon Department of Aviation.*

The Council previously found that the Certificate Holder could design and construct the Facility to reduce visual impacts, to restrict public access, and to reduce cumulative adverse environmental impacts in the vicinity of the Facility to the extent practicable in accordance with the requirements of OAR 345-024-0015 (ODOE 2008, ODOE 2009, ODOE 2010). Specifically, in approving the ASC, the Council considered and made findings regarding cumulative impacts of the Facility related to 1) roads, 2) transmission lines and substations, 3) wildlife protection, 4) visual features, and 5) lighting. The Council adopted Site Certificate conditions to address the Siting Standard: Site Certificate Conditions 58, 86, 93 and 95 are directly applicable to the proposed change and operations. The Facility is already constructed such that the Certificate Holder met all pre-construction and construction conditions, and will continue to meet operation conditions as documented through annual reporting.

The Facility is operational, with existing access roads that would be used for this RFA to upgrade two turbines during O&M activities. There would be no changes to the existing substation or transmission line. Although the Demo Turbines, existing turbines would have an increased height,

the changes to visual impact on protected areas or public viewing areas would not be significant. Upgrading the Demo Turbines will increase the blade length and the overall turbine height compared to the dimensions of the existing turbines at the Facility; however, the new height will remain lower than the previously approved maximum turbine height on which the original visual analysis was based. Site Certificate Condition 93 has and will continue to be implemented to minimize visual impacts through the prohibition of advertising material at the Facility and maintenance of onsite signage. The increased height could result in an increased bird and bat fatality risk from wind turbine collision and will continue to be remediated through implementation of actions described in the WMMP. Disturbance in areas described in Site Certificate Condition 86 to reduce the risk of injury to raptors or other vulnerable wildlife will continue to be avoided. This request does not seek to enlarge the existing Site Boundary, rather the upgrading will occur at two existing turbines within the existing Site Boundary. The footprint required for the upgrades to the Demo Turbines will be within the previously disturbed areas from construction of the Facility. Proposed changes would not significantly affect wetlands or other waters of the state because the Facility is already constructed and was sited to avoid these water bodies. There would be no changes to lighting as part of RFA 2 other than those that may be required by FAA although changes are not anticipated. Condition 95 which imposed exterior nighttime lighting policies shall continue to be enforced during operation and upgrading. There is no change to the previously approved maximum number of turbines, maximum generating capacity, or infrastructure locations from what was originally authorized. The proposed amendment makes no changes that would alter the basis for the Council's earlier findings, and therefore, the proposed amendment request satisfies OAR 345-024-0015.

6.17 Noise Control Regulations – OAR 340-035-0035

OAR Chapter 340, Division 35 prescribes noise regulations applicable throughout the State of Oregon, with specific requirements in OAR 340-035-0035, "Noise Control Regulations for Industry and Commerce." This standard provides guidance for new noise sources on a previously used site:

OAR 340-035-0035(1)(b)(A) New Sources Located on Previously Used Sites. No person owning or controlling a new industrial or commercial noise source located on a previously used industrial or commercial site shall cause or permit the operation of that noise source if the statistical noise levels generated by that new source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 8, except as otherwise provided in these rules. For noise levels generated by a wind energy facility including wind turbines of any size and any associated equipment or machinery, subparagraph (1)(b)(B)(iii) applies.

Table 8 of OAR 340-035-0035 gives statistical noise limits, as summarized below in Table 6. All limits are presented in terms of A-weighted decibels (dBA). The L_{50} is the median sound level (50 percent of the measurement interval is above this level, 50 percent is below). The noise limits apply at "appropriate measurement points" on "noise sensitive property." The noise limits apply at "appropriate measurement points" on "noise sensitive property." The appropriate measurement point is defined as whichever of the following is farther from the noise source:

- 25 feet toward the noise source from that point on the noise sensitive building nearest the noise source; or
- The point on the noise sensitive property line nearest the noise source.

“Noise sensitive property” is defined as “real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries. Property used in industrial or agricultural activities is not Noise Sensitive Property unless it meets the above criteria in more than an incidental manner.”

Table 6. New Industrial and Commercial Noise Standards

Statistical Descriptor	Maximum Permissible Statistical Noise Levels (dBA)	
	Daytime (7:00 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
L ₅₀	55	50
L ₁₀	60	55
L ₁	75	60

Source: OAR 340-035-0035, Table 8.

As stated above, OAR 340-035-0035(1)(b)(B)(iii) specifically applies to sound generated by a wind energy facility. The increase in ambient statistical noise levels is based on an assumed background L₅₀ ambient sound level of 26 dBA or the actual ambient background level. Compliance for wind energy facilities is determined based on:

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

(IV) For purposes of determining whether a proposed wind energy facility would satisfy the ambient noise standard where a landowner has not waived the standard, noise levels at the appropriate measurement point are predicted assuming that all of the proposed wind facility's turbines are operating between cut-in speed and the wind speed corresponding to the maximum sound power level established by IEC 61400-11 (version 2002-12). These predictions must be compared to the highest of either the assumed ambient noise level of 26 dBA or to the actual ambient background L₁₀ and L₅₀ noise level, if measured. The facility complies with the noise ambient background standard if this comparison shows that the increase in noise is not more than 10 dBA over this entire range of wind speeds.

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

2002-12), and assuming that all of the proposed wind facility's turbines are operating at the maximum sound power level.

OAR 340-035-0035(5) specifically exempts construction activity from the state noise standards and regulations, as indicated below. This section also provides an exemption for maintenance of capital equipment, the operation of aircraft (such as helicopters used in construction), and sounds created by activities related to timber harvest.

Exemptions: Except as otherwise provided in subparagraph (1)(b)(B)(ii) of this rule, the rules in section (1) of this rule shall not apply to:

[section abridged for brevity]

(b) Warning devices not operating continuously for more than 5 minutes;

(g) Sounds that originate on construction sites.

(h) Sounds created in construction or maintenance of capital equipment;

(j) Sounds generated by the operation of aircraft and subject to pre-emptive federal regulation. This exception does not apply to aircraft engine testing, activity conducted at the airport that is not directly related to flight operations, and any other activity not pre-emptively regulated by the federal government or controlled under OAR 340-035-0045;

(k) Sounds created by the operation of road vehicle auxiliary equipment complying with the noise rules for such equipment as specified in OAR 340-035-0030(1)(e);

OAR 340-035-0035(6) allows for some exceptions to the state noise regulations:

Exceptions: Upon written request from the owner or controller of an industrial or commercial noise source, the Department may authorize exceptions to section (1) of this rule, pursuant to rule 340-035-0010, for:

(a) Unusual and/or infrequent events;

(b) Industrial or commercial facilities previously established in areas of new development of noise sensitive property;

(c) Those industrial or commercial noise sources whose statistical noise levels at the appropriate measurement point are exceeded by any noise source external to the industrial or commercial noise source in question;

(d) Noise sensitive property owned or controlled by the person who controls or owns the noise source;

(e) Noise sensitive property located on land zoned exclusively for industrial or commercial use.

As originally proposed and amended (in the ASC and RFA 1), the Council concluded that the Facility, subject to site certificate conditions, would comply with the applicable state noise regulations. In support of RFA 1, the Certificate Holder conducted a noise study based on a layout of 116 GE Renewables 2.5-MW turbines, representing the final Facility design layout. All turbines were

modeled at maximum rotation, with total sound power of 105 dB. The noise study results indicated compliance with the Oregon Department of Environmental Quality (ODEQ) 50 dBA L₅₀ limit at all 39 of the noise sensitive receptors (NSRs). However, noise levels at five of the 39 NSRs (R-12, R-13, R-14, R-15, and R-13) were predicted to exceed the ambient hourly L₅₀ ambient degradation limit of 36 dBA. Therefore, noise waivers were obtained from all five NSRs. The study showed that noise levels would be in compliance with the ODEQ ambient noise degradation rule at the remaining 34 of 39 NSRs.

RFA 2 proposes to upgrade two of the 116 existing turbines. The two Demo Turbines are expected to have sound power properties similar to the existing turbines, with a total sound power of 105 dB at maximum rotation. To satisfy Condition 97, the potential impact of the upgrade has been assessed for the NSRs surrounding the facility.

The nearest NSRs to the two Demo Turbines are R-32 and R-39 (see Figure 5)². The original noise study demonstrated that received sound levels at both NSRs were predicted to be well below the ODEQ 50 dBA L₅₀ limit. Received sound levels at both NSRs were also predicted to be well below 36 dBA, and therefore in compliance with the ODEQ ambient noise degradation rule. Both NSRs are located approximately 4.5 kilometers away from the demo turbines. At this distance, received sound from the two Demo Turbines by themselves would attenuate to well below the assumed background L₅₀ ambient noise level of 26 dBA. Given that the total sound power is not expected to increase as a result of upgrading the two Demo Turbines, the impact would be negligible at this distance. Therefore, noise levels at NSRs R-32 and R-39 are expected to remain in compliance with state noise control regulations.

The next closest NSRs are R-12, R-13, R-14, and R-15, clustered together approximately 5.5 kilometers away from the proposed Demo Turbines. As with NSRs R-32 and R-39, since total sound power is not expected to increase as a result of upgrading the two Demo Turbines, the impact would be negligible at this distance. Additionally, noise waivers were previously obtained from all four NSRs. Therefore, noise levels at NSRs R-12, R-13, R-14, and R-15 are expected to remain in compliance with state noise control regulations.

All other NSRs are located over 6 kilometers away, and are unlikely to be affected by upgrading of the two Demo Turbines. The Facility will maintain a complaint response system to address noise complaints, as part of Condition 98.

Construction or short term activities are categorically exempted under OAR 340-35-0035(5)(g). Because the noise from upgrading is short term, it is not expected to result in any significant long-term impacts at any NSRs. Condition 96 will continue to be applied with use of heavy construction equipment confined to daylight hours, mufflers required on all combustion engine-powered equipment, and a complaint response system in place as needed.

² NSRs in proximity to the Demo Units were determined by review of Google Earth data (June 2019), Gilliam County Assessor Data (July 2019), and correspondence with the Facility's on-site manager.

6.18 Removal-Fill Law

The Oregon Removal-Fill Law (ORS 196.795 through ORS 196.990) and Oregon Department of State Lands regulations (OAR 141-085- 0500 through OAR 141-085-0785) require a removal-fill permit if 50 cubic yards or more of material is removed, filled, or altered within any “waters of the state.”

The Certificate Holder provided information regarding wetlands and other waters of the state in Exhibit J of the ASC (Caithness Shepherds Flat, LLC 2007). A removal-fill permit is not needed for RFA 2, because like Facility construction, the proposed changes will not temporarily or permanently impact waters of the state.

6.19 Water Rights

Under ORS Chapters 537 and 540 and OAR Chapter 690, the Oregon Water Resources Department (OWRD) administers the appropriation of water rights and regulates the use of the water resources of the state. The Council previously found that the facility would comply with the Ground Water Act of 1955 and the rules of OWRD (ODOE 2008, ODOE 2009, ODOE 2010). The upgrading of the two Demo Turbines does not alter the Certificate Holder’s ability to obtain water from the City of Arlington (as proved in Exhibit O of the ASC) during construction, nor its intended use of less than 5,000 gallons per day of water from an on-site well during operations (per Condition 78). Construction water requirements are no longer applicable because the Facility is already constructed and is in the O&M phase. Therefore, the modification proposed under RFA 2 does not alter the amount of water or procurement sources from what has been permitted for the Facility, and the Council may rely on its prior findings that the Facility complies with the Ground Water Act of 1955 and the rules of OWRD.

7.0 Property Owners Located within or Adjacent to the Site of the Facility – OAR 345-027-0060(1)(f)

(1) To request an amendment to the site certificate required by OAR 345-027-0050(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy that includes the following:

(f) An updated list of the owners of property located within or adjacent to the site of the facility, as described in OAR 345-021-0010(1)(f). Property adjacent to the site boundary means property that is: (C) Within 500 feet of the site boundary where the site, corridor or micrositing corridor is within a farm or forest zone.

An updated list and associated map of property owners is provided in Attachment 6.

8.0 Conclusion

Based on the findings and conclusions discussed above regarding the proposed change in RFA 2, the Council can make the following findings:

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

Therefore, the Council may approve the Certificate Holder's RFA2 and Type B review path.

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Figures

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Attachment 1. Red-line Site Certificate

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Attachment 2. DOGAMI Consultation Notes

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Attachment 3. Foundation Analysis

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Attachment 4. Seismic Data

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Attachment 5. Emergency Action Plan

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Attachment 6. Adjacent Property Owner Assessor's Data

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