

# EXHIBIT Q

## THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

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## Introduction

This Exhibit provides information under OAR 345-021-0010(1)(q), which demonstrates the threatened and endangered species standard in OAR 345-022-0070 is satisfied.

As specified in the Project Order, Section VI, the study area for Exhibit Q includes the area within the Facility site boundary and 5 miles outside the Facility site boundary. Field survey areas include areas surveyed for rare plants, avian use, aerial raptor nests, special-status vertebrate wildlife species, and bat species inventory (Figure Q2). Details for the biological investigations are provided in Section Q.1.2.2.

OAR 345-022-0070 requires:

*“[T]he 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.”*

## **RESPONSE**

Exhibit Q contains evidence EFSC can use to make the required findings under OAR 345-022-0070. The Threatened and Endangered Plant and Animals study area for Exhibit Q includes the area within the Facility site boundary and the area within 5 miles of the Facility site boundary (Figure Q1).

No special status plants were detected during the spring 2010 site-specific surveys. No plant conservation program is applicable to the site (ODA, 2009). EFSC may make the finding required by OAR 345-022-0070(1)(b) because OAR 345-022-0070(1)(a) does not apply. Listed wildlife species are not likely to occur at or be impacted by the Facility. The exception is the state endangered and federal candidate WGS, which was observed during 2010 surveys within the Facility site boundary. As further discussed in Exhibit P, the Applicant has designed the Facility to avoid Category 1 habitat<sup>1</sup>, therefore the Facility will not cause a significant reduction in the likelihood of WGS survival or recovery.

The survival or recovery for threatened, endangered, or candidate plant and wildlife species within the study area will not result in a significant reduction of habitat due to construction and operation of the Facility.

<sup>1</sup> See Section P.2.1 in Exhibit P for an explanation regarding Category 1 habitat classification.

## Q.1 Threatened and Endangered Species that May Be Affected

**OAR 345-021-0010(1)(q)** Information about threatened and endangered plant and animal species that may be affected by the proposed facility, providing evidence to support a finding by the Council as required by OAR 345-022-0070. The applicant shall include:

**OAR 345-021-0010(1)(q)(A)** Based on appropriate literature and field study, identification of all threatened or endangered species listed under ORS 496.172(2), ORS 564.105(2) or 16 USC § 1533 that may be affected by the proposed facility;

### **RESPONSE**

The following sections provide information about threatened and endangered plant and animal species that may be affected by the proposed Facility and provide evidence to support an EFSC finding as required by OAR 345-022-0070.

#### **Q.1.1 Summary of Threatened and Endangered Species**

USFWS County species lists for Gilliam, Morrow, and Sherman Counties in Oregon were reviewed by NWC (2011). The data request from the ORBIC was also reviewed (Exhibit P, Attachment P1). Based on these data reviews, nine state and federal threatened, endangered, and candidate species may potentially occur within the study area. Non-listed special-status species (state sensitive species, federal species of concern, and other non-listed rare species) are addressed in Exhibit P.

A summary of the state or federal threatened, endangered, and candidate plant and wildlife species with known or potential occurrence in the study area are presented in Table Q1 and Table Q2. The only listed or candidate species with known records within 5 miles of the Facility are the state threatened Laurent's milkvetch (*Astragalus collinus* var. *laurentii*), state candidate sessile mousetail (*Myosurus sessilis*), federal threatened steelhead (*Oncorhynchus mykiss*), and the federal candidate and state endangered WGS. The impact potential for the nine listed species is shown in Table Q1 and Table Q2.

**Table Q1: State and Federal Listed and Candidate Vascular Plant Species with Potential Occurrence within Study area**

Species	Federal Status <sup>1</sup>	ODFW Status <sup>2</sup>	Likelihood of Occurrence	Impact Potential
Laurent's milkvetch <i>Astragalus collinus</i> var. <i>laurentii</i>	SC	LT	Moderate	Yes
Sessile Mousetail <i>Myosurus sessilis</i>	SC	C	High	Yes
Dwarf Evening Primrose <i>Camissonia pygmaea</i>	SC	C	Low	No
Disappearing Monkeyflower <i>Mimulus evanescens</i>	SC	C	Low	No
Hepatic (Liverwort) monkeyflower <i>Mimulus jungermannioides</i>	--	C	Low	No

Source: (NWC, 2011)

**<sup>1</sup>Federal Status Definitions (USFWS Ranking Key):**

SC = Species of Concern. Available information supports tracking the status and threats to species/subtaxon.

**<sup>2</sup>State Status Definitions (ODA Ranking Key):**

LT = Listed Threatened.

C = Candidate for listing as Threatened or Endangered.

**Table Q2: State and Federal Listed and Candidate Wildlife Species with Potential Occurrence**

Species	Federal Status <sup>1</sup>	ODFW Status <sup>2</sup>	Occurrence <sup>3</sup>	Impact Potential
<b>Mammals</b>				
Washington Ground squirrel <i>Urocitellus washingtoni</i>	C Priority List 2	E	D – Observed during special status wildlife surveys in multiple locations in 2010 (NWC, 2011) (Figure Q3. ORBIC has 6 records of individuals and holes within 5 miles of proposed turbines (NWC, 2011 [ORBIC, 2010c]).	Yes
<b>Birds</b>				
Bald Eagle <i>Haliaeetus leucocephalus</i>	NW EPA BoCC	T	N – May occasionally occur during winter months, but not documented during surveys. Wintering population in the Columbia Basin, primarily along watercourses. Known to hunt uplands for carrion and small mammals. Nearest known nest is ~25 miles from the Project (NWC, 2011 [C. Flick, Pers. Comm., 2009]).	No
<b>Fish</b>				
Steelhead (Mid-Columbia River ESU, summer run) <i>Oncorhynchus mykiss</i> population 28	T	SC	D – ORBIC records list this species as potentially occurring in streams within the 5-mile study area. Documented within Rock Creek (NWC, 2011 [K. Kronner and J. Neil, Pers. Comm., 2010]).	No
Bull trout <i>Salvelinus confluentus</i>	T	SC	N – No potential for occurrence in the portion of Rock Creek that flows near the Facility (NWC, 2011 [J. Neil, Pers. Comm., 2010]).	No

Source: (NWC, 2011 [CBMRCD/NWPPC, 2004; ODFW, 2008; ORBIC, 2010d; USFWS, 2008b; USFWS, 2009])

**<sup>1</sup>Federal Status Definitions (USFWS Ranking Key):**

T = Threatened.

C = Candidate.

NW = Not Warranted; delisted

EPA = Eagle Protection Act (16 U.S.C. 668-668d, June 8, 1940, as amended 1959, 1962, 1972, 1978)

BoCC = USFWS Birds of Conservation Concern (Table 7 BCR 9, Great Basin Region)

Note: All migratory birds are protected by the Migratory Bird Treaty Act (MBTA)

**<sup>2</sup>State Status Definitions (ODA Ranking Key):**

E = Endangered

T = Threatened

SC = "Critical" sensitive species are those for which listing as Threatened or Endangered will be appropriate if immediate conservation actions were not taken. Some peripheral species which are at risk throughout their range and some disjunct populations (those that are not geographically isolated from other populations) area also considered "Critical".

**<sup>3</sup>Occurrence** within or near Facility site boundary. D = Documented and N = Not Documented

### **Q.1.2 Methodology Used to Identify Threatened and Endangered Species**

Sections Q.1.2.1 and Q.1.2.2 describe the methods used to identify state and federal threatened, endangered, and candidate species.

#### **Q.1.2.1 Literature Review**

NWC reviewed wildlife fatality monitoring studies as well as pre-construction wildlife and habitat data in public files for other wind projects in the area. The review included the following wind projects: Montague Wind Power Facility, Leaning Juniper I, Leaning Juniper IIB, Vansycle, Klondike I, II, III, and IIIa, Biglow Canyon Phase I and II (year two is still ongoing), Hay Canyon, Pebble Springs, Combine Hills, Rattlesnake Road, Willow Creek Winds, Shepherds Flat, Saddle Butte Wind Park, and Wheat Field in Oregon, and Big Horn, Nine Canyon, Hopkins Ridge, Wild Horse, Marengo I and II, and Tuolumne in Washington, and Stateline in both Oregon and Washington (Caithness Shepherds Flat, 2007; Kronner et al., 2007a; Kronner et al., 2008b; Kronner et al., 2010; NWC 2009; NWC, 2010b; PPM, 2006; Saddle Butte Wind, 2009).

In September 2010, records of state and federal threatened, endangered, and candidate species, as well as state sensitive species, federal species of concern, and other non-listed rare species were requested from the ORBIC for the area within the study. USFWS County-level special status species lists for Gilliam, Morrow, and Sherman Counties were reviewed for potential species occurrence. NWC also reviewed 2008 and 2009 bald eagle and peregrine falcon nest information from the ODFW and placed it in a confidential nest file (NWC, 2011).

NWC's review of USFWS County lists and the ORBIC database query resulted in identifying nine state and federal threatened, endangered and candidate species as potentially occurring within the study area. The only listed or candidate species with known records within 5 miles of the Facility are the state threatened Laurent's milkvetch, state candidate sessile mousetail, and the federal candidate and state endangered WGS.

The potential for these species to occur was assessed based on literature and database review, presence of suitable habitat, professional experience, and consultation with the ODFW. NWC used the information from database inquiries, along with the results of ongoing surveys in the area, and interviews with ODFW biologists regarding potential species occurrence to develop lists of plant and vertebrate wildlife species with potential for occurrence in the Facility site boundary (Appendices C and D of Attachment P1 in Exhibit P).

No plant conservation program is applicable to the site (ODA, 2009). No wildlife conservation program is applicable to the site (ODFW, 2011).

#### **Plants**

To supplement the information provided by the USFWS and ORBIC data, the following sources were consulted to obtain information regarding the species listed in Table Q1:

- Flora of the Pacific Northwest (Hitchcock and Cronquist, 1973)
- Vascular plants of the Pacific Northwest (5 volumes) (Hitchcock et al., 1955-1969)

- The PLANTS Database (NRCS, 2010)

### Wildlife

To supplement the information provided by the USFWS and ORBIC, the following sources were used to obtain information regarding the species listed in Table Q2.

- Washington ground squirrel biological status assessment (ODFW, 1999)
- Unpublished Report on Washington Ground Squirrel Monitoring at Boardman Bombing Range and the Boardman Conservation Area (Marr, 2004)
- Personal field notes on Washington ground squirrels and other special status wildlife species in the Columbia Plateau (Kronner, 2001–2010)
- Abundance and habitat associations of Washington ground squirrels in north-central Oregon (Greene, 1999)
- Geographical range, habitat requirements, and a preliminary population study of *Spermophilus washingtoni* (Carlson et al., 1980)
- The relationship of body weight to overwinter survival in Columbian ground squirrels (Murie and Boag, 1984)
- Bald Eagle nest locations and history of use in Oregon and the Washington portion of the Columbia River Recovery Zone, 1971 through 2006 (Isaacs and Anthony, 2007)

#### **Q.1.2.2 Field Surveys**

A draft survey study plan (NWC, 2010) was submitted by representatives of the Applicant to the ODFW District Biologist. Draft figures of the special status survey extent and results were submitted to ODFW in early September 2010. Attachment P1 of Exhibit P describes informal agency consultation between NWC, the Applicant, ODFW and USFWS. A follow up meeting with ODFW and USFWS was held on July 19, 2011. At this meeting, the Applicant shared survey findings and discussed ongoing study efforts.

### Plants

Rare plant field surveys were conducted by NWC May 17–19, 22, 24–27, and June 2, 2010. The timing for these surveys was based on review of the database search results and NWC's local knowledge of target plant species and phenology. Target species included all possible federal and state candidate, threatened and endangered species considered likely to occur in the study area.

NWC investigated all areas within the Facility site boundary where suitable habitat was present and near areas where construction will occur. Areas of intensively altered nonnative grasslands and agricultural fields were not surveyed at the same level that undisturbed areas were surveyed due to the extremely low potential for target species occurrence in these areas. Figure Q2 displays the areas that were surveyed within the Facility site boundary.

During the survey, NWC compiled all vascular species encountered and informal and formal collections were identified in the laboratory. A comprehensive list of all plant species recorded during NWC surveys is included in Appendix E of Attachment P1 in Exhibit P.

Noxious weed populations were noted but not mapped. The primary flora reference for the field surveys was Hitchcock and Cronquist (1973) with supplemental texts from the five-volume Flora of the Pacific Northwest (1955–1969).

### Wildlife

Methods to assess presence of the species in Table Q2 were developed by NWC using the background and experience of the staff, informal consultation with ODFW, and suggested methods in the Oregon Methodology Manual (ODFW, 1994). Methods selected were similar to those used for the Leaning Juniper IIA and IIB and Montague Wind Power Facilities (NWC, 2011).

Target species included state and federal listed species (candidate, threatened, endangered) believed to have potential for occurrence in the study area during the breeding season based on range and habitat associations (Appendix D of Attachment P1 in Exhibit P). As previously noted, special-status species (state sensitive species and federal species of concern) are addressed in Exhibit P.

Surveys were conducted by NWC March 31 through April 12, 2010 and May 20 through June 1, 2010. The most suitable weather conditions for detection of breeding birds and mammals include diurnal periods of sunrise to early afternoon. Experienced biologists and technicians walked meandering transects approximately 164 to 230 ft apart in all habitats suitable for target species within the Facility site boundary (Figure Q2 and Figure Q3). All trees were examined for nests, and all nest structures were examined for occupancy by raptors. Cliffs and escarpments were scanned from above and below for nest structures. Unsafe areas, dryland wheat areas, and residences were not surveyed by this method. If necessary, areas near survey transects were investigated more thoroughly for confirmation of observation or species habitat.

Aquatic habitats for fish and amphibians were not surveyed because the Facility avoids impacts to these habitats. During the surveys, all observed wildlife was recorded with a handheld GPS unit or plotted on a USGS topographic map. A comprehensive list of all wildlife species recorded during NWC surveys is included in Appendix F of Attachment P1 in Exhibit P. Additional details about the wildlife survey methods are included of Attachment P1 in Exhibit P. Night-spotlighting was determined to be unnecessary. NWC's extensive survey experience indicated diurnal surveys result in flushing jackrabbits from resting spots in shrubs. This worked as a method to search for signs of jackrabbit droppings.

During the surveys described above, WGS were targeted March 31 through April 12, 2010. Protocols were the same as previously described, but if ground squirrels were detected, values were given to different types of detections, following a system implemented during studies conducted on the Boardman Bombing Range and the adjoining Boardman Conservation Area (NWC, 2011 [Marr, 2004]). The additive values are as follows:

- Number 1 indicates holes are characteristic of those used by squirrels; droppings, if present are not from current year.
- Number 2 indicates droppings from the current year.
- Number 4 indicates recognizable calls given by WGS.

- Number 8 indicates a visual observation of a WGS.

A positive detection meant values that equaled 3 or higher, which is at a minimum a hole with droppings positively identified as belonging to WGS from the current year. Additional details regarding the value system are included in Attachment P1 in Exhibit P. When a call or visual detection was obtained, efforts were made to find the nearest hole and look for droppings. If a hole with droppings could not be found, the visual detection of the WGS or the approximate location of an auditory only detection was marked.

## **Q.2 Existing Conditions and Potential Impacts to Threatened and Endangered Species**

**ORAR 345-021-0010(1)(q)(B)** *For each species identified under (A), a description of the nature, extent, locations and timing of its occurrence in the analysis area and how the facility might adversely affect it;*

### **Q.2.1 Potentially Occurring Species**

USFWS County species lists for Gilliam, Morrow, and Sherman counties, Oregon were reviewed by NWC. The data request from ORBIC was also reviewed and included species records within 5 miles of the Facility site boundary. Based on these data reviews, NWC developed lists of potentially occurring species within the study area (Appendices C and D of Attachment P1 in Exhibit P). The lists included the following nine threatened, endangered or candidate species: Laurent's milkvetch, dwarf evening-primrose, disappearing monkeyflower, hepatic (liverwort) monkeyflower, sessile mousetail, WGS, bald eagle, bull trout and steelhead.

Non-listed special-status species (state sensitive species, federal species of concern, and other non-listed rare species) are addressed in Exhibit P.

### **Q.2.2 Identification of Species that May Be Affected**

Of the nine potentially occurring threatened, endangered, proposed, or candidate species, the only known records within 5 miles of the Facility are for the state threatened Laurent's milkvetch, state candidate sessile mousetail, federal threatened steelhead, and the federal candidate and state endangered WGS. Candidate and proposed species are included in this Exhibit because of their potential to be listed during the time this ASC is being prepared and processed.

#### **Q.2.2.1 Plants**

No threatened, endangered, candidate, or proposed plant species were detected during NWC's spring 2010 site-specific surveys for the Facility. Field surveys were timed to the appropriate identification period for most target species. Certain northern portions of the Facility were not included in field surveys because permission to access was not granted; however, construction is not planned in these areas. Field surveys occurred for all areas where construction will occur (see Figure Q2).

### Laurent's Milkvetch

#### *Natural History and Occurrence in the Study Area*

Laurent's milkvetch is Oregon state listed as threatened and is a federal species of concern. Laurent's milkvetch is a perennial and the identification period for this plant is May through June. Typical habitat for this plant is basaltic grassland and sagebrush desert.

ORBIC has one record of this species occurring within 5 miles of the Facility site boundary. The Applicant also reviewed the Montague Wind Power Facility ASC Exhibit Q, which indicated a population of Laurent's milkvetch was discovered during 2009 surveys within the adjacent Leaning Juniper IIB site boundary (Iberdrola Renewables, Inc., 2010). NWC's assessment for likelihood of occurrence is moderate (NWC, 2011).

#### *Potential Impacts*

No impacts are anticipated because no plants have been identified within the Facility site boundary. If discovered, primary threats to this species include livestock grazing and roadside herbicide application. The Applicant will implement the measures described under Section Q.3 so impacts do not occur.

### Dwarf Evening Primrose

#### *Natural History and Occurrence in the Study Area*

Dwarf evening primrose is an Oregon State candidate for listing as threatened or endangered and a federal species of concern. Dwarf evening primrose is an annual, and the identification period for this plant is late April through June. Typical habitat for this plant is rocky slopes, sandy banks, and dry gravelly washes.

ORBIC does not have any records of this species occurring within 5 miles of the Facility site boundary. NWC's assessment for likelihood of occurrence is low (NWC, 2011).

#### *Potential Impacts*

No impacts are expected to occur to dwarf evening primrose because no plants have been identified. If discovered, primary threats to this species include roadside herbicide application, gravel extraction, and exotic plant invasion. The Applicant will implement the measures described under Section Q.3 so impacts do not occur.

### Disappearing Monkeyflower

#### *Natural History and Occurrence in the Study Area*

Disappearing monkeyflower is an Oregon State candidate for listing as threatened or endangered and a federal species of concern. Disappearing monkeyflower is an annual and the identification period for this plant is late April through June. Typical habitat for this plant is rocky slopes, sandy banks, and dry gravelly washes.

ORBIC has no records of this species occurring within 5 miles of the Facility site boundary. NWC's assessment for likelihood of occurrence is low (NWC, 2011).

*Potential Impacts*

No impacts are expected to occur to disappearing monkeyflower because no plants have been identified. If discovered, primary threats to this species include livestock grazing and changes to local soil hydrology (Meinke, 2007). The Applicant will implement the measures described under Section Q.3 so impacts do not occur.

Hepatic (Liverwort) Monkeyflower*Natural History and Occurrence in the Study Area*

Hepatic monkeyflower is an Oregon State candidate for listing as threatened or endangered. The hepatic monkeyflower is a perennial and the identification period is May through late August. Typical habitat for this plant is basalt crevices in seepage zones in vertical cliff faces and canyon walls at an elevation of 500 to 3,300 ft.

ORBIC has no records of this species occurring within the study area. NWC's assessment for likelihood of occurrence is low (NWC, 2011).

*Potential Impacts*

No impacts are expected to occur to hepatic monkeyflower because no plants have been identified. If discovered, primary threats to this species will include Facility development that results in a decrease or elimination of water seepage and competition with weedy species within the seepage zones (Washington Department of Natural Resources [WDNR] et al., 1997). The Applicant will implement the measures described under Section Q.3 so impacts do not occur.

Sessile Mousetail*Natural History and Occurrence in the Study Area*

Sessile mousetail is an Oregon State candidate for listing as threatened or endangered and a federal species of concern. Sessile mousetail is a perennial and the identification period is May through July. Typical habitat is moist areas and drying vernal pools and alkali flats with elevation of 50 to 5,200 ft. ORBIC has two records of this species occurring within 5 miles of the Facility site boundary. The Applicant also reviewed the Montague Wind Power Facility's ASC Exhibit Q, which indicated populations of sessile mousetail were discovered within the adjacent Leaning Juniper II site boundary and Montague Wind Power Facility site boundary and the nearby Pebble Springs site boundary (Iberdrola Renewables, Inc., 2010). NWC's assessment for likelihood of occurrence is high (NWC, 2011).

*Potential Impacts*

No impacts are expected to occur to sessile mousetail because no plants have been identified. If discovered, primary threats to this species include livestock grazing and roadside herbicide application. The Applicant will implement the measures described under Section Q.3 to prevent or minimize impacts.

**Q.2.2.2 Wildlife**

According to the information reviewed from USFWS and ORBIC, state and federally listed and candidate wildlife species that may occur in the study area are the WGS, bald eagle,

Middle Columbia steelhead Evolutionarily Significant Unit (ESU), and bull trout. Only the WGS and bald eagle are likely to occur based on a review of habitat within the Facility site boundary.

Because there is no suitable habitat within the Facility site boundary for the bull trout and steelhead and because the Facility will not be located within potential habitat (Rock Creek), these species are not addressed further in this Exhibit.

In the year prior to construction, all areas of suitable WGS habitat where construction disturbance could occur will be surveyed for WGS and other listed wildlife species.

### Washington Ground Squirrel

#### *Natural History and Occurrence in the Study Area*

The WGS is a state endangered species and a federal candidate for listing as threatened or endangered. The WGS is native to the Columbia Plateau, south of the Columbia River and east of the John Day River, and was historically distributed over much of the shrub-steppe habitat of southeastern Washington and northeastern Oregon. Agricultural conversion of shrub-steppe habitat is the primary cause of WGS decline. Habitat includes annual grasses and forbs for cover and Warden soils for burrow excavation due to their high silt content and deep extent.

WGS may lose as much as half their body weight during estivation and hibernation (NWC, 2011 [Carlson et al., 1980; Yensen and Sherman, 2003; Barrett, 2005]). Adults emerge from hibernation between January and early March and return to their burrows by late May to early June. Limited forage in spring and early summer likely affects juvenile survival to independence, survival through estivation, and subsequent reproductive performance (NWC, 2011 [Carlson et al., 1980; Murie and Boag, 1984; Rieger, 1996; Greene, 1999; ODFW, 1999]). The WGS produces a single litter of young per year (USFWS, 2008).

ORBIC reported six historical (from 1977 to 1988) records of WGS within the study area; three of these were partially located within the Facility site boundary (NWC, 2011 [ORBIC, 2010c]).

#### *WGS Studies for the Facility*

Section Q.1.2.2 describes the methods used to identify WGS. Twenty-three WGS sites were found during NWC's 2010 wildlife surveys for the Facility. WGS were observed in the northeast portion of the Facility, in the southern portion west of Ridge Road, Cow Canyon, near Olex, and near Rock Creek in the central portion of the Facility. The areas of greatest activity occurred in the northeast where two individuals were seen and numerous holes were discovered, and in the southern portion of the Facility between Ridge Road and Rock Creek where multiple holes and droppings were found.

WGS sites are considered Category 1 habitat, as described in Exhibit P. WGS are usually found in open big sagebrush and grassland habitat, but also occur in pastures and abandoned fields (NWC, 2011). Ten 785-ft Category 1 buffers were developed to enclose the 23 WGS active sites (Figure Q3). Habitat types within the 10 buffers were mapped by NWC as shrub-steppe (Basin Big Sagebrush and Rabbitbrush/Snakeweed), Grassland (Exotic Annual and Native Perennial), and Developed (Revegetated/Other Planted Grassland).

None of the 23 sites was of single WGS-confirmed holes and the number of holes recorded ranged from 2 to 17. Of the 23 sites, one was an auditory-only detection north of Olex (animal heard, not seen). This site is not considered Category 1 habitat. As previously noted, all areas of suitable habitat where construction disturbance could occur will be surveyed prior to construction.

#### *WGS Studies for Other Facilities*

WGS have been observed in the surrounding area. Active WGS colonies in the general area include Leaning Juniper IIA and IIB, Montague Wind Power Facility, Pebble Springs, and Shepherds Flat wind projects (NWC, 2011 [NWC, 2009; NWC, 2010b; Kronner et al., 2005a; PPM, 2006; Caithness Shepherds Flat, 2007]). At Leaning Juniper IIA and IIB, most sites were in shrub-steppe habitats (Sagebrush and some Rabbitbrush/Snakeweed), and a few were in Juniper Woodland habitat, Annual Grassland, or near the edge of a disturbed field (NWC, 2011 [NWC, 2009; Kronner et al., 2005a]). At the Montague Wind Power Facility, WGS were found in native shrub-steppe (including Sagebrush and Rabbitbrush/Snakeweed), Exotic Annual Grassland, and Native Perennial Grassland (NWC, 2011 [NWC, 2010b]).

#### *Potential Impacts*

The Facility will be microsited to avoid Category 1 WGS habitat so direct loss of known individual WGS will be minimized and temporary and permanent impacts will not occur. Section Q.3 discusses mitigation measures to ensure impacts are avoided.

Facility construction or disturbance from operations may disturb estivating squirrels or interrupt WGS daily habits during the above-ground activity period (late January through early June). Disturbance from construction or operation of the Facility may result in increased energy consumption followed by underweight immergence, resulting in greater over-winter mortality. Loss and degradation of occupied habitat will likely result in loss of individual WGS. Loss or degradation of suitable, unoccupied areas may reduce the ability of subpopulations to communicate and limit population expansion (NWC, 2011).

Collision with vehicles could occur if individual WGS travel outside of identified colonies into Facility construction zones. Incidental injuries or deaths will not reduce the likelihood of the survival or recovery of the species. Based on the worst-case layout for the Facility (Figure P14), up to 313.4 acres of habitat consisting of variable quality and suitability for the WGS could be impacted temporarily during construction, and approximately 34.2 acres could be permanently impacted (NWC, 2011 [Table 2]).

#### Bald Eagle

##### *Natural History and Occurrence in the Study Area*

Bald eagles are a uniquely North American species that historically occurred throughout the contiguous United States and Alaska. The largest North American breeding populations are in Alaska and Canada. There are nesting records for 45 of the lower 48 states, with significant bald eagle nesting populations in the Great Lakes states, Florida, the Pacific Northwest, the Greater Yellowstone area, and the Chesapeake Bay region. Pesticides and habitat loss had reduced the species in the lower 48 states to about 4 % of original population by the 1960s. The midwestern states had lost their breeding populations by that

same time. The species has since recovered to have healthy populations throughout its historic range.

Though no longer federally listed, the bald eagle is still protected under the Bald and Golden Eagle Protection Act and the MBTA. An Oregon State threatened species, the bald eagle was not documented during NWC surveys, but it has the potential to occur within the study area during the winter season because it is known to hunt upland from the Columbia River for carrion and small mammals.

Bald eagles eat mostly fish along with waterfowl, shorebirds, colonial waterbirds, small mammals, turtles, and carrion. As visual hunters, bald eagles need perches or soaring flight to swoop down and strike their prey. Their nesting period in the Pacific Northwest begins with courtship and nest building in January and ends by August 15 when the young fledge; the non-nesting period is from August 16 through December 31. During nesting, bald eagles are near coastlines, rivers and large lakes with adequate food supplies. Nests are in mature or old-growth trees (just below the canopy), snags, cliffs, rock promontories, and some artificial structures that allow for clear views of the open water and where human disruption is minimal. During non-nesting, bald eagles stay near permanent open water, but some fly to terrestrial habitats away from open water where small mammals are easily spotted. Wintering bald eagles congregate and rely on established roost sites due to their proximity to sufficient food sources near ice-free lakes, streams, and rivers. Roost sites occur in locations where human disturbance is minimal and bald eagles are protected from the wind by vegetation or terrain (USFWS, 2011).

ORBIC results did not identify any bald eagle nests or roosting areas within the study area. The nearest known nest is approximately 25 miles from the Facility site boundary (NWC, 2011 [C. Flick, Pers. Comm., 2009]). One bald eagle was recorded during a winter avian use study at Rattlesnake Road Wind Power Facility, one at Willow Creek Winds in winter, and one was observed in the northern portion of Shepherds Flat Wind Farm area during the winter (NWC, 2011 [Kronner et al., 2007a and b; Caithness Shepherds Flat, 2007]). There is slight potential for the bald eagle to appear in the study area during spring and fall migration.

#### *Potential Impacts*

Neither breeding habitat nor important wintering habitat is associated with the Facility and no bald eagles were detected during surveys, indicating a limited use of the study area. Potential impacts to bald eagles include strikes from operating turbines resulting in death or injury. NWC indicated there have been no reported instances of bald eagle fatalities at any U.S. wind projects (NWC, 2011 [Erickson et al., 2001; Table 10]). Recently, a bald eagle fatality was discovered at a wind project in Ontario, Canada but cause of death has not been directly attributed to turbine collision (NWC, 2011 (M. Anderson, 2010)).

Wind turbine collisions for this species have likely been low because roosting and breeding areas have not substantially overlapped with turbine sites to date. However, a study in Alaska where bald eagle use was high showed that eagles altered their flight behavior to avoid turbines (NWC, 2011 [Sharp et al., 2010]). Construction and operation of the Facility are not expected to have a negative effect on bald eagles or cause a significant reduction in the survival or recovery of the species (NWC, 2011).

### **Q.3 Measures Proposed to Avoid or Reduce Adverse Impacts**

***OAR 345-021-0010(1)(q)(C)** For each species identified under (A), a description of measures proposed by the applicant, if any, to avoid or reduce adverse impact;*

For impacts to threatened and endangered species, the Applicant will implement measures to avoid or reduce potential adverse impacts. Exhibit P describes protective measures for non-listed special status wildlife and habitat. The Wildlife Monitoring and Mitigation Plan, Revegetation Plan, and Habitat Mitigation Plan (HMP) for the Facility will be developed in consultation with ODFW. Measures for avoiding or reducing adverse impacts to other species identified under OAR 345-021-0010(1)(q)(A) are not proposed because adverse impacts are not anticipated, as discussed in OAR 345-021-0010(1)(q)(B). However, measures proposed by the Applicant for the WGS will also be protective of other species.

#### **Q.3.1 Pre-Construction Measures to Avoid or Reduce Adverse Impacts**

##### **Q.3.1.1 Avoidance in Facility Design**

Facility design measures will be incorporated into the design of the roads, turbine towers, met towers, collector lines, and the generator lead line. Prior to construction, facilities will be designed to avoid impacts to special status plant and animal species, riparian areas, and native habitats to the extent practicable, including the following measures:

- Existing roads will be utilized to the extent possible, except when the use of existing roads will impact sensitive species.
- Turbine towers and permanent met towers will be un-guyed and, where practicable, collector lines will be buried in temporarily-disturbed road shoulders.
- Turbine locations, laydown areas, and roads will be microsited to avoid WGS colonies; no components will be located in Category 1 habitat associated with known WGS colonies, and there will be no temporary or permanent impacts to Category 1 habitat.
- Facility design will also take into account the locations of nests of special status raptors, particularly ferruginous hawks and also Swainson's hawks.
- Underground collector lines will be installed in agricultural or other disturbed habitats where feasible, and overhead lines will be constructed according to Avian Power Line Interaction Committee (APLIC) recommendations. Overhead collector lines will be used to avoid wetlands, canyons, or rugged terrain that is unsafe for trenching.

##### **Q.3.1.2 Avoidance During Micrositing**

The Facility will be microsited to avoid and minimize temporary and permanent impacts to sensitive species, riparian areas, shrub-steppe habitat, and other high quality native habitat where practicable, with the goal of retaining these habitats in the general landscape. To field-verify habitat mapping and categorization and to identify state- and federally-listed species, additional plant and wildlife surveys will be conducted prior to construction. Those planned for the year of construction (prior to construction) are rare plant surveys in areas not yet surveyed, WGS surveys, and a raptor nest survey. Though not found to date within areas planned for development, special status plants may be found during supplemental surveys. If found, populations of listed species will be avoided and no permanent or temporary impacts will occur.

To retain habitat cover in the general landscape, the Facility will be micro-sited to avoid and minimize temporary and permanent impacts to high quality native habitat.

Field investigation of the final layout will be conducted by qualified personnel. A written report of the field investigation will be provided to the EFSC. The written report will detail any identified state- and federally-listed species or Category 1 habitat. Category 1 habitat and state- or federally-listed plant species identified during field investigations will be avoided by the Facility. Sensitive areas and threatened and endangered species locations, such as WGS sites, will be avoided during micro-siting. Prior to construction, the Applicant will provide the EFSC with a map that displays the final layout and disturbed areas during construction. Construction personnel will be instructed to avoid sensitive areas. Surveying Category 1 WGS habitat (colony edge) prior to construction will ensure the area is correctly flagged and avoided. As described in the HMP, impacts to Category 2 habitat will be mitigated.

### **Q.3.2 Construction Measures to Avoid or Reduce Adverse Impacts**

#### **Q.3.2.1 Construction Monitoring**

A field representative designated by the construction contractors will oversee compliance with protective measures and coordination with regulatory agencies. The Applicant will also use an on-site manager.

Construction personnel will be trained by qualified biologists to avoid sensitive areas. Qualified biologists will also provide environmental monitoring and visit the Facility before construction to flag sensitive resource areas. During construction, a qualified biologist will periodically visit the site to maintain sensitive resource flagging and oversee permit compliance. A qualified biologist will monitor raptor nesting behaviors (without disturbing the birds) during construction site visits to quantify nest site abandonment. The biologist will also record the number of young fledged, where possible.

#### **Q.3.2.2 Exclusion Flagging**

Exclusion flagging by qualified biologists will occur to mark threatened and endangered or candidate species occurrences, wetlands, sensitive raptor nests, and other high quality native habitats. Flagging will entail brightly colored pin flags or wooden lathes and signing. Contractors will be instructed to work outside the boundaries marked by exclusion flags.

Listed or candidate plant species within 200 ft of construction areas will be flagged. Wetlands and streams will also be flagged prior to construction. WGS colonies and other populations of threatened, endangered, or candidate wildlife identified during surveys will be flagged prior to construction. WGS colonies within 785 ft of construction areas and Facility components will be flagged as avoidance areas. High impact construction activities (e.g., blasting and grading) and high levels of construction traffic will not be allowed within 1,760 ft of the nest sites. Other active raptor nests (e.g., red-tailed hawk) will be flagged within approximately 1,320 ft of construction areas. Construction work in these areas will be minimized to the extent possible.

During the breeding season, no-disturbance buffers will be maintained around Swainson's and ferruginous hawk nests (1/2 mile) and other active raptor nests (1,300 ft).

**Q.3.2.3 Dust Control**

Due to dust control measures, dust levels generated from construction activities will not significantly impact vegetation or wildlife species. Water applications on disturbed ground will occur during construction. Graveling permanent roads (including existing unimproved roads), erosion control measures, revegetation, and 20 mph speed limits are effective dust control measures that the Applicant will implement. Graveling roads will likely reduce traffic on the unimproved roads and four-wheel-drive tracks within the Facility site boundary. Post-construction dust from vehicular traffic will likely be reduced from current conditions on-site.

**Q.3.2.4 Erosion Control**

In accordance with the NPDES 1200-C permit, the Applicant will prepare an Erosion and Sediment Control Plan (ESCP). The contractor will be required to install erosion and siltation controls near riparian and other designated areas, which will be monitored by the field representative.

**Q.3.2.5 Environmental Training**

A mandatory environmental training course detailing information about sensitive species, exclusion flagging, and permit requirements will be presented to construction personnel. The construction contractor will maintain a list of personnel that received the training. The training will include protocol for responding to dead or injured wildlife, as described in the WMMP. Any dead or injured wildlife encountered on-site must be reported to qualified biologists during construction or the on-site manager during operation.

**Q.3.2.6 Limited Work Areas**

Driving cross-country within the Facility site boundary will not be allowed, unless prior approval is received from appropriate authorities. Facility constraints maps will display the approved and surveyed areas where construction work will occur.

**Q.3.2.7 Speed Limits**

Speed limits will be posted throughout the Facility's construction areas. Construction personnel will maintain 20 miles per hour speed limits, especially during the hour before dusk and hour after dawn. Construction personnel will be instructed to exercise caution in order to prevent harassment or accidental strikes to wildlife.

**Q.3.2.8 Fire Control**

Wildfires could affect wildlife habitat during construction. The Applicant will be prepared to quickly respond to wildfires.

**Q.3.3 Post Construction Measures to Avoid or Reduce Adverse Impacts****Q.3.3.1 Post Construction Monitoring**

The Applicant will perform post construction monitoring to document conditions during Facility operation. The following will be performed:

- Wildlife fatality monitoring, including fatality searches, removal trials, searcher efficiency trials, and statistical analysis
- Raptor nest surveys and monitoring; short term and long term schedule
- Washington ground squirrel surveys
- Habitat protection and enhancement measures effectiveness monitoring

In addition, a wildlife reporting and handling system will be developed so the on-site manager can effectively respond to any wildlife concerns.

Habitat Restoration

The Applicant will restore habitat to preconstruction standards by implementing a Revegetation Plan. Weed control and native species will be used to restore habitat in nonagricultural areas to the extent possible.

Habitat Conservation

Impacts that cannot be avoided or minimized will be addressed through mitigation measures in compliance with ODFW habitat mitigation rules (OAR 635-415-0025). An HMP will be implemented for the Facility, which includes preservation and enhancement of a conservation area. A conservation easement will protect the conservation area property for the life of the Facility. Actions in the conservation easement area may include modification of livestock grazing practices, native plantings, weed control, fire control, and erection of an artificial raptor nest platform.

Fire Control

The Applicant will be prepared to quickly respond to wildfires that could affect wildlife habitat.

**Q.4 No Significant Reduction in the Likelihood of Survival or Recovery of Plant Species**

**Q.4.1 Identified Plant Species with an ODA Protection and Conservation Program**

**OAR 345-021-0010(1)(q)(D)** *For each plant species identified under (A), a description of how the proposed facility, including any mitigation measures, complies with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3);*

ODA prepares Protection and Conservation Programs for selected plant species listed as threatened or endangered under the Oregon ESA. No plant conservation program is applicable to the site (ODA, 2009). Therefore under this provision, OAR 345-022-0070(1)(a) does not apply and no additional information is required .

**Q.4.2 Identified Plant Species without an ODA Protection and Conservation Program**

**OAR 345-021-0010(1)(q)(E)** *For each plant species identified under (A), if the Oregon Department of Agriculture has not adopted a protection and conservation program under ORS 564.105(3), a description of significant potential impacts of the proposed facility on the*

*continued existence of the species and on the critical habitat of such species and evidence that the proposed facility, including any mitigation measures, is not likely to cause a significant reduction in the likelihood of survival or recovery of the species;*

No plant conservation program is applicable to the site (ODA, 2009). Section Q.2 describes the potential impacts of the Facility on the continued existence of state and federally listed, proposed, and candidate plant species and their habitat. Section Q.3 discusses mitigation and avoidance measures, which were designed to avoid or minimize adverse impacts on state and federally listed, proposed, and candidate wildlife species. The Facility's construction, operation, and maintenance activities are not likely to cause a significant reduction in the likelihood of survival or recovery of the state threatened Laurent's milkvetch, state candidate dwarf evening-primrose, state candidate disappearing monkeyflower, state candidate hepatic (liverwort) monkeyflower, and state candidate sessile mousetail.

**Q.5 No significant Reduction in the Likelihood of Survival or Recovery of Fish and Wildlife Species**

**OAR 345-021-0010(1)(q)(F)** *For each animal species identified under (A), a description of significant potential impacts of the proposed facility on the continued existence of such species and on the critical habitat of such species and evidence that the proposed facility, including any mitigation measures, is not likely to cause a significant reduction in the likelihood of survival or recovery of the species;*

No wildlife conservation program is applicable to the site (ODFW, 2011). Section Q.2 describes the potential impacts of the Facility on the continued existence of state and federally listed, proposed, and candidate wildlife species and their habitat. Section Q.3 discusses mitigation and avoidance measures, which were designed to avoid or minimize adverse impacts on state and federally listed, proposed, and candidate wildlife species. The Facility's construction, operation, and maintenance activities are not likely to cause a significant reduction in the likelihood of survival or recovery of the state endangered WGS or the state threatened bald eagle.

**Q.5.1 Washington Ground Squirrel**

During micrositing, Facility components will be located outside Category 1 WGS habitat. Vehicle strikes may result in injury or death if individual WGS enter construction areas; these impacts will not reduce the likelihood of the survival or recovery of the species (NWC, 2011). A reporting procedure will be in place to document WGS vehicle strikes.

It is not known how the WGS will respond to the Facility and human activities. The Applicant reviewed the Montague Wind Power Facility's ASC Exhibit Q, which indicated no displacement or abandonment of WGS colonies is likely to occur. This is demonstrated by extensive informal monitoring of WGS colonies during and after construction of Stateline turbine strings WS-A and B (Iberdrola Renewables, Inc., 2010 (FPLE, 2002a, 2002b, 2002c and Erickson et al., 2004), and the Leaning Juniper I (LJI) operational monitoring and ITP reporting (NWC, 2007; Kronner, 2001-2010).

Revegetation of Facility construction areas with native vegetation species will occur, along with weed and fire management and appropriate grazing practices during the vegetation recovery period. These measures may have the potential to improve the habitat in

construction areas (NWC, 2011). Post-construction monitoring of WGS use near the Facility's turbines may help to understand behavior and persistence of WGS in the presence of wind projects.

#### **Q.5.2 Bald Eagle**

Construction and operation of the Facility will have no significant impact on the survival or recovery of the bald eagle. The ORBIC database search and bald eagle reports reviewed by NWC did not identify any bald eagle nests or roosting areas within the 5-mile study area (NWC, 2011 (ORBIC, 2010c; Isaacs and Anthony, 2007)). Neither breeding habitat nor important wintering habitat is associated with the Facility. No bald eagles were detected during NWC surveys, but bald eagles may fly infrequently through the study area during their non-nesting period. Construction and operation of the Facility are not expected to have a negative effect on bald eagles and are not likely to cause a significant reduction in the likelihood of survival or recovery of this species.

#### **Q.6 Monitoring Program**

**OAR 345-021-0010(1)(q)(G)** *The applicant's proposed monitoring program, if any, for impacts to threatened and endangered species;*

A WMMP, Revegetation Plan, and HMP will be implemented for the Facility. ODFW will be consulted during development of the plans. The WMMP will be similar to nearby Facilities' plans, such as for Leaning Juniper II Wind Power Facility and the Montague Wind Power Facility. The WMMP will evaluate direct and indirect impacts on wildlife and habitat during operation of the Facility. The WMMP will include post construction monitoring of WGS colonies, avian and bat mortality monitoring, and special status raptor nest monitoring.

The Revegetation Plan will outline restoration for temporarily disturbed habitats. Mitigation will be developed for the impacts that cannot be avoided or minimized and will be in compliance with OAR 635-415-0025. The HMP will implement mitigation measures.

#### **Q.7 Proposed Site Certificate Conditions**

Similar to the conditions proposed by previously-approved wind energy facilities in the vicinity of the Facility, the Applicant proposes the following conditions, which ensure necessary actions are taken to protect threatened, endangered, or candidate species during Facility construction and operation:

##### **Condition 57**

*The certificate holder shall conduct wildlife monitoring as described in the Wildlife Monitoring and Mitigation Plan, and as amended from time to time.*

##### **Condition 58**

*The certificate holder shall restore areas disturbed by Facility construction but not occupied by permanent Facility structures according to the methods and monitoring procedures described in the Revegetation Plan, and as amended from time to time.*

##### **Condition 59**

*The certificate holder shall acquire the legal right to create, enhance, maintain, and protect a habitat mitigation area as long as the site certificate is in effect by means of an outright purchase, conservation easement, or similar conveyance and shall provide a copy of the*

documentation to the Department. Within the habitat mitigation area, the certificate holder shall improve the habitat quality as described in the Habitat Mitigation Plan, and as amended from time to time.

**Condition 60**

The certificate holder shall determine the boundaries of Category 1 WGS habitat based on the locations where the squirrels were found to be active in the most recent WGS survey prior to the beginning of construction in habitat suitable for WGS foraging or burrow establishment ("suitable habitat"). The certificate holder shall hire a qualified professional biologist who has experience in detection of WGS to conduct surveys using a survey protocol approved by the Oregon Department of Fish and Wildlife (ODFW). The biologist shall survey all areas of suitable habitat where permanent Facility components will be located or where construction disturbance could occur. Except as provided in (a), the biologist shall conduct the protocol surveys in the active squirrel season (March 1 to May 31) prior to construction and in the active squirrel seasons in subsequent years until the beginning of construction in suitable habitat. The certificate holder shall provide written reports of the surveys to the Department and ODFW and shall identify the boundaries of Category 1 WGS habitat. The certificate holder shall not begin construction within suitable habitat until the identified boundaries of Category 1 WGS habitat have been approved by the Department. Category 1 WGS habitat includes the areas described in (b) and (c).

- (a) The certificate holder may omit the WGS survey in any year if the certificate holder avoids all permanent and temporary disturbance within suitable habitat until a WGS survey has been completed in the following year and the boundaries of Category 1 habitat have been determined and approved based on that survey.
- (b) Category 1 WGS habitat includes the area within the perimeter of multiple active WGS burrows plus a 785-foot buffer, excluding areas of habitat types not suitable for WGS foraging or burrow establishment. If the multiple-burrow area was active in a prior survey year, then Category 1 habitat includes the largest extent of the active burrow area ever recorded (in the current or any prior-year survey), plus a 785-foot buffer.
- (c) Category 1 WGS habitat includes the area containing single active burrow detections plus a 785-foot buffer, excluding areas of habitat types not suitable for WGS foraging or burrow establishment. Category 1 habitat does not include single-burrow areas that were found active in a prior survey year, but are no longer active in the current survey year.

**Condition 61**

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

- (a) The certificate holder shall not construct any Facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.
- (b) Before beginning construction, the certificate holder shall provide to the Department a map showing the final design locations of all components of the Facility and the areas that will be disturbed during construction and identifying the survey areas for all plant and wildlife surveys. The certificate holder shall hire a qualified professional biologist to conduct a pre-construction plant and wildlife investigation of all areas that will be disturbed during construction that lie outside of the previously surveyed areas. The certificate holder shall provide a written report of the investigation to the Department and ODFW. Based on consultation with the Department and ODFW, the certificate holder shall

- implement appropriate measures to avoid impacts to any Category 1 habitat, to any State-listed threatened or endangered plant or wildlife species, and to any State Candidate plant species.*
- (c) Before beginning construction, the certificate holder's qualified professional biologist shall survey the Category 1 WGS habitat to ensure that the sensitive use area is correctly marked with exclusion flagging and avoided during construction. The certificate holder shall maintain the exclusion markings until construction has been completed.*
- (d) Before beginning construction, the certificate holder's qualified professional biologist shall complete raptor nest surveys within the raptor nest survey area. The purposes of the survey are to identify any sensitive raptor nests near construction areas and to provide baseline information on raptor nest use for analysis as described in the WMMP. The certificate holder shall provide a written report on the raptor nest surveys to the Department and ODFW.*
- (e) In the final design layout of the Facility, the certificate holder shall locate Facility components, access roads, and construction areas to avoid or minimize temporary and permanent impacts to high quality native habitat and to retain habitat cover in the general landscape where practicable.*

**Condition 62**

*During construction, the certificate holder shall avoid all construction activities within a 1,300-foot buffer around potentially-active nest sites of the following species during the sensitive period, as provided in this condition:*

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

*During the year in which construction occurs, the certificate holder shall use a protocol approved by ODFW to determine whether there are any active nests of these species within 0.5-mile of any areas that will be disturbed during construction. The certificate holder shall begin monitoring potential nest sites by March 15 and shall continue monitoring until at least May 31 to determine whether any potentially-active nest sites become active during the sensitive period.*

*If any nest site is determined to be unoccupied by the early release date (May 31), then unrestricted construction activities may occur within 1,300 feet of the nest site after that date. If a nest is occupied by any of these species after the beginning of the sensitive period, the certificate holder will flag the boundaries of a 1,300-foot buffer area around the nest site and shall instruct construction personnel to avoid disturbance of the buffer area. During the sensitive period, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading, or other major ground disturbance) within the buffer area. The certificate holder shall restrict construction traffic within the buffer, except on public roads, to vehicles essential to the limited construction activities allowed within the buffer.*

*If burrowing owl nests are occupied during the sensitive period, the certificate holder may adjust the 1,300-foot buffer around these nests after consultation with ODFW and subject to Department approval.*

*The certificate holder shall hire a qualified independent professional biologist to observe the active nest sites during the sensitive period for signs of disturbance and to notify the Department of any non-compliance with this condition. If the biologist observes nest site abandonment or other adverse impact to nesting activity, the certificate holder shall implement appropriate mitigation, in consultation with ODFW and subject to the approval of the Department, unless the adverse impact is clearly shown to have a cause other than construction activity.*

*The certificate holder may begin or resume construction activities within the buffer area before the ending day of the sensitive period with the approval of ODFW, after the young are fledged. The certificate holder shall use a protocol approved by ODFW to determine when the young are fledged (the young are independent of the core nest site).*

**Condition 63**

*The certificate holder shall implement measures to avoid or mitigate impacts to sensitive wildlife habitat during construction including, but not limited to, the following:*

- (a) Preparing maps to show exclusion areas that are off-limits to construction personnel, such as nesting or denning areas for sensitive wildlife species.*
- (b) Avoiding unnecessary road construction, temporary disturbance, and vehicle use.*
- (c) Limiting construction work to approved and surveyed areas shown on Facility constraints maps.*
- (d) Ensuring that all construction personnel are instructed to avoid driving cross-country or taking short-cuts within the Facility site boundary or otherwise disturbing areas outside of the approved and surveyed construction areas.*

**Condition 64**

*The certificate holder shall reduce the risk of injuries to avian species by:*

- (a) Installing turbine towers that are smooth steel structures that lack features that will allow avian perching.*
- (b) Locating turbine towers to avoid areas of increased risk to avian species, such as cliff edges, narrow ridge saddles and gaps between hilltops.*
- (c) Installing met towers that are non-guyed structures to eliminate the risk of avian collision with guy-wires.*
- (d) Designing and installing all aboveground transmission line support structures following the most current suggested practices for avian protection on power lines published by the Avian Power Line Interaction Committee.*

**Condition 65**

*The certificate holder shall hire a qualified environmental professional to provide environmental training during construction and operation. Environmental training includes providing information on the sensitive species present on-site, precautions to avoid injuring or destroying wildlife or sensitive wildlife habitat, exclusion areas, permit requirements, and other environmental issues. The certificate holder shall instruct construction and operations*

*personnel to report any injured or dead wildlife detected while on the site to the appropriate on-site environmental manager.*

**Condition 66**

*The certificate holder shall impose and enforce a construction and operation speed limit of 20 miles per hour throughout the Facility site and, during the active squirrel season (March 1 to May 31), a speed limit of 10 miles per hour from 1 hour before sunset to 1 hour after sunrise on private roads near known WGS colonies. The certificate holder shall ensure that all construction and operations personnel are instructed to watch out for and avoid WGS and other wildlife while driving through the Facility site.*

**Condition 67**

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

**Q.8 Conclusion**

Mitigation measures, including avoidance for Facility design, will reduce the potential for impacts on state or federally listed, candidate, and proposed species to insignificant levels. No state or federally listed, proposed, or candidate plant species was documented during NWC surveys; however, the sessile mousetail has a high potential for occurrence in the study area. The WGS is a state listed endangered species located within the Facility site boundary. The bald eagle is state listed threatened and may travel through the study area. Neither the WGS or bald eagle or their habitat will be significantly affected by the Facility.

In the year prior to construction, all areas of suitable habitat where construction disturbance could occur will be surveyed for listed, proposed, or candidate wildlife species. Based on the information provided in this Exhibit, including the proposed mitigation measures, EFSC may find the Facility is not likely to cause a significant reduction in the likelihood of survival or recovery of threatened or endangered plant or wildlife species within the study area. Through these efforts, the Applicant has demonstrated that OAR 345-022-0070 is met.

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## Figures

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**Figure Q1:** Threatened and Endangered Species Analysis Area

**Figure Q2:** Facility Survey Area and Special-status Plants and Wildlife (*Confidential*)

**Figure Q3:** Facility Washington Ground Squirrels (*Confidential*)