

Wheatridge Wind Energy Project Habitat Mitigation Plan

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1.0 Introduction

The Wheatridge Wind Energy Facility (Facility) is a 300 megawatt (MW) wind energy generation facility located in Morrow county that was granted approval of a site certificate by the Oregon Department of Energy's (ODOE) Energy Facility Siting Council (EFSC) for construction and operation on April 28, 2017 (EFSC 2017). The Certificate Holder subsequently received EFSC approval to amend the site certificate three times, prior to facility construction.

Facility components within Morrow County are referred to as "Wheatridge West" and include the following related or supporting facilities:

- Electrical collection system;
- One collector substation;
- Permanent meteorological (met) towers;
- Communication and Supervisory Control and Data Acquisition (SCADA) System;
- One operations and maintenance (O&M) building;
- New or improved access roads; and
- Additional temporary construction areas (including staging areas and one or more temporary concrete batch plant areas).

Wheatridge West is located entirely within Morrow County and is bisected by Oregon Highway 207. It is approximately 5 miles northeast of Lexington, and approximately 7 miles northwest of Heppner.

This HMP provides documentation that construction and operation of Wheatridge West is in compliance with EFSC's Fish and Wildlife Habitat standard (OAR 345-022-0060), which implements Oregon Department of Fish and Wildlife's (ODFW) Fish and Wildlife Habitat Mitigation Policy, Oregon Administrative Rule (OAR) 635-415-0000 through 0025. The Certificate Holder's goal is to reduce and eliminate the effects on wildlife and habitat from construction and operation of Wheatridge West by implementing this HMP along with the Revegetation Plan and Wildlife Monitoring and Mitigation Plan. This HMP commits to preserving, enhancing, and maintaining in-kind habitat in the Columbia Basin Ecoregion to achieve the mitigation goals described in the ODFW Habitat Mitigation Policy.

2.0 Pre-Construction Compliance

This HMP for the Wheatridge West portion of the Facility will show compliance with Site Certificate condition PRE-FW-01 and PRE-FW-4, which read:

***PRE-FW-01** Prior to final site design and facility layout, the certificate holder shall conduct a field-based habitat survey to confirm the habitat categories of all areas that will be affected by*

facility components, as well as the locations of any sensitive resources such as active raptor and other bird nests. The survey shall be planned in consultation with the department and ODFW, and survey protocols shall be confirmed with the department and ODFW. Following completion of the field survey, and final layout design and engineering, the certificate holder shall provide the department and ODFW a report containing the results of the survey, showing expected final location of all facility components, the habitat categories of all areas that will be affected by facility components, and the locations of any sensitive resources.

The report shall also include an updated version of Table FW-1 Potential Temporary and Permanent Impacts by Habitat Category and Type of the final order, showing the acres of expected temporary and permanent impacts to each habitat category, type, and sub-type. The preconstruction survey shall be used to complete final design, facility layout, and micro-siting of facility components. As part of the report, the certificate holder shall include its impact assessment methodology and calculations, including assumed temporary and permanent impact acreage for each transmission structure, wind turbine, access road, and all other facility components. If construction laydown yards are to be retained post construction, due to a landowner request or otherwise, the construction laydown yards must be calculated as permanent impacts, not temporary. In classifying the affected habitat into habitat categories, the certificate holder shall consult with the department and ODFW. The certificate holder shall not begin construction of the facility until the habitat assessment, categorization, and impact assessment has been approved by the department, in consultation with ODFW. The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.

PRE-FW-04 *Before beginning construction the certificate holder shall prepare and receive approval from the department of a final Habitat Mitigation Plan. The final Habitat Mitigation Plan shall be based on the final facility design and shall be approved by the department in consultation with ODFW. The Council retains the authority to approve, reject or modify the final HMP.*

- a. The final Habitat Mitigation Plan and the department's approval must be received prior to beginning construction. The department shall consult with ODFW on the final plan. The certificate holder shall implement the requirements of the approved plan during all phases of construction and operation of the facility.*
- b. The certificate holder shall calculate the size of the habitat mitigation area according to the final design configuration of the facility and the estimated areas of habitat affected in each habitat category, in consultation with the department, as per the pre-construction survey results and impact assessment calculations called for in Fish and Wildlife Condition 1.*
- c. The certificate holder shall acquire the legal right to create, enhance, maintain, and protect the 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 prior to the start of*

construction. Within the habitat mitigation area, the certificate holder shall improve the habitat quality as described in the final Habitat Mitigation Plan.

- d. The certificate holder shall provide a habitat assessment of the habitat mitigation area, based on a protocol approved by the Department in consultation with ODFW, which includes methodology, habitat map and available acres by habitat category and subtype in tabular format.*
- e. The final HMP shall include an implementation schedule for all mitigation actions, including securing the conservation easement, conducting the ecological uplift actions at the habitat mitigation area, revegetation and restoration of temporarily impacted areas, and monitoring. The mitigation actions shall be implemented according to the following schedule, as included in the HMP:*
 - i. Restoration and revegetation of temporary construction-related impact area shall be conducted as soon as possible following construction.*
 - ii. The certificate holder shall obtain legal authority to conduct the required mitigation work at the compensatory habitat mitigation site before commencing construction. The habitat enhancement actions at the compensatory habitat mitigation site shall be implemented concurrent with construction.*
- f. The final HMP shall include a monitoring and reporting program for evaluating the effectiveness of all mitigation actions, including restoration of temporarily impacted areas and ecological uplift actions at the habitat mitigation area.*
- g. The final HMP shall include mitigation in compliance with the Council's Fish and Wildlife Habitat standard, including mitigation for temporary impacts to Category 4 habitat (shrub-steppe habitat); and, mitigation for all Category 2 habitat impacts that meet the mitigation goal of no net loss of habitat quality or quantity, plus a net benefit of habitat quality or quantity.*
- h. The final HMP may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this plan agreed to by the Department.*

3.0 Habitat Categories and Habitat Types

In compliance with Condition PRE-FW-01, a pre-construction habitat survey was conducted in 2019 to verify habitat subtypes and habitat categories of all areas to be affected by Wheatridge West facilities. This survey was planned in consultation with ODFW and a protocol was reviewed and approved by ODFW (Appendix A). Pre-construction surveys for Washington ground squirrels, rare plants, raptor nests, and special-status species were also conducted in 2019 in compliance with Condition PRE-FW-01 for identification of sensitive resources and other conditions specific to the implementation of Washington ground squirrel and rare plant surveys.

The ODFW Fish and Wildlife Habitat Mitigation Policy provides a framework to categorize habitats based on type, quality, availability, and usefulness/importance to wildlife, and establishes mitigation goals and implementation standards for each. Table 1 defines each of the six habitat category types as presented in the ODFW Habitat Mitigation Policy.

Table 1. Habitat Categorization Types

Category Type	Definition ¹	Mitigation Goal
1	Irreplaceable, essential habitat for a fish or wildlife species, population, or a unique assemblage of species and is limited on either a physiographic province or site-specific basis, depending on the individual species, population or unique assemblage.	The mitigation goal for Category 1 habitat is no loss of either habitat quantity or quality.
2	Essential habitat for a fish or wildlife species, population, or unique assemblage of species and is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.	The mitigation goal if impacts are unavoidable is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality.
3	Essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.	The mitigation goal is no net loss of either habitat quantity or quality.
4	Important habitat for fish and wildlife species.	The mitigation goal is no net loss of either habitat quantity or quality.
5	Habitat for fish and wildlife having high potential to become either essential or important habitat.	The mitigation goal, if impacts are unavoidable, is to provide a net benefit in habitat quantity or quality.
6	Habitat that has low potential to become essential or important habitat for fish and wildlife.	The mitigation goal is to minimize impacts.
1. Source: OAR 635-415-0025.		

For Wheatridge West, Category 1 habitat could include suitable habitat within 785 feet of documented Washington ground squirrel (*Urocitellus washingtoni*) colonies. Category 2 habitat could be associated with ODFW mule deer winter range (ODFW 2012), areas of potential Washington ground squirrel use, and high-quality native habitat. Areas of potential ground squirrel use are defined as being within 4,921 feet (1.5 kilometers [km]) of ground squirrel Category 1 habitat, but not occupied by any squirrels either for burrowing or foraging. Category 3, 4, and 6 habitats could include areas that do not function as mule deer winter range and do not contain Washington ground squirrel colonies or areas of potential use. Category 5 has not been identified for Wheatridge West and does not occur in the site boundary. Habitat types include grassland, shrub-steppe, and developed. Each of these habitat types contain habitat subtypes that were used to map habitat in the Wheatridge West site boundary. Table 2 is a habitat categorization matrix that defines the habitat subtypes and the corresponding habitat categories in which each habitat subtype may fall based on proximity to wildlife resources and/or vegetation composition.

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Table 2. Wheatridge West Habitat Categorization Matrix

Habitat type	Habitat Subtype	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Grassland	Exotic Annual Grassland	Active Washington ground squirrel colony with a 785-foot buffer (area required for squirrel survival) in suitable habitat.	Additional 4,921 foot (1.5km) buffer (area of potential WAGS use) of WAGS Category 1 habitat except where there are habitat barriers to dispersal. OR Overlaps with ODFW mule deer winter range.	-	Non-native grasslands with a very high weed component and disturbed or less nutrient-rich soils. The forb component is composed primarily of non-native weeds, such as cheatgrass, bulbous bluegrass, cereal rye, tumbled mustard, and Russian thistle, with occasional patches of native bunchgrass, primarily Sandberg bluegrass. The high weed content is primarily due to past fires, which burned native shrubs and bunchgrasses and were followed by heavy grazing and/or wind erosion. Some of these sites support long-billed curlew. Category 4 Exotic Annual Grassland provides important habitat to common species like horned lark, but the dense weed cover and lack of native grasses limit the ability of most wildlife species to use these areas for forage or cover. In addition, the weed cover, often dominated by annuals such as cheatgrass, makes the slopes in this area more susceptible to erosion and soil damage from grazing, because of a lack of the robust root structure found in perennial species, such as the native bunchgrasses. With sufficient time and appropriate livestock grazing practices, however, these areas could become suitable habitat for some native wildlife species. This habitat is commonly found throughout the Columbia Basin.	-	-
	Native Grassland	Active Washington ground squirrel colony with a 785-foot buffer (area required for squirrel survival) in suitable habitat.	Additional 4,921 foot (1.5km) buffer (area of potential WAGS use) of WAGS Category 1 habitat except where there are habitat barriers to dispersal. OR Overlaps with ODFW mule deer winter range.	Dominated by native perennial grasses such as Sandberg bluegrass, bluebunch wheatgrass, Idaho fescue, western needlegrass, and needle-and-thread grass. Various native forbs and low shrubs such as gray rabbitbrush and, to a lesser extent, green rabbitbrush are present but are an inconspicuous component. Native vascular plants are diverse and a variety of invertebrates can be found utilizing the plants throughout the growing season. These habitats have been altered through land use or wildfires, and generally contain a significant component of non-native vegetation (broad-leaf weeds and annual grasses). Category 3 Native Perennial Grasslands generally occur on sites with shallow soils and harsh exposures, or in areas that have experienced livestock grazing or frequent fires. Provide essential foraging habitat to a variety of common resident and migratory birds and common mammals. State Sensitive species that occur in this habitat include white-tailed jackrabbit, long-billed curlew, burrowing owl, and grasshopper sparrow. Native grasses and forbs provide forage for mule deer.	Category 4 Native Perennial Grassland is ecologically similar to Category 3 Native Perennial Grassland but is classified as Category 4 because its small size and isolated nature limit its value to wildlife.	-	-

Habitat type	Habitat Subtype	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Shrub-steppe	Basin Big Sagebrush Shrub-steppe	Active Washington ground squirrel colony with a 785-foot buffer (area required for squirrel survival) in suitable habitat.	<p>Additional 4,921 foot (1.5km) buffer (area of potential WAGS use) of WAGS Category 1 habitat except where there are habitat barriers to dispersal.</p> <p>OR</p> <p>Overlaps with ODFW mule deer winter range.</p> <p>OR</p> <p>Shrub-steppe habitat with an overstory of mature (large structure) patches of basin big sagebrush. Understory plants consist of a mix of native bunchgrasses and exotic annual grasses depending largely on level of impact from disturbance. Common grasses are Sandberg bluegrass, bluebunch wheatgrass, cheatgrass, and bulbous bluegrass. Category 2 Basin Big Sagebrush Shrub-steppe has a higher shrub density and greater plant health than similar but lesser quality Category 3 Basin Big Sagebrush Shrub-steppe habitat. Category 2 Basin Big Sagebrush Shrub-steppe offers high quality breeding habitat for shrub obligate species including loggerhead shrike, and may support Washington ground squirrel and white-tailed jackrabbit. Sagebrush lizard may be found in areas where more sandy soils are present.</p>	<p>Patches of Category 3 Basin Big Sagebrush Shrub-steppe lack the density and plant health of Category 2 Basin Big Sagebrush Shrub-steppe or are in patches of limited size. The overstory sagebrush in this type is often decadent or lacks full foliage. Understory vegetation in Category 3 Basin Big Sagebrush Shrub-steppe often tends toward annual grasses and low weeds. These areas were historically higher quality habitats but are experiencing degradation due to land use practices or frequent fires. However, the mature shrub cover provides escape and resting cover for common wildlife and is limited in the immediate area and the region.</p>	-	-	-
	Rabbitbrush/Snakeweed Shrub-steppe	Active Washington ground squirrel colony with a 785-foot buffer (area required for squirrel survival) in suitable habitat.	<p>Additional 4,921 foot (1.5km) buffer (area of potential WAGS use) of WAGS Category 1 habitat except where there are habitat barriers to dispersal.</p> <p>OR</p> <p>Overlaps with ODFW mule deer winter range.</p>	<p>Have been affected by recent fires and are in a relatively early seral stage. Native rabbitbrush and other low-stature plants such as broom snakeweed and various buckwheat species are common. The understory is native Sandberg bluegrass, non-native cheatgrass, bulbous bluegrass, and tumbled mustard. Patches of native perennial grasses, such as bluebunch wheatgrass and needle-and-thread grass, are present. Many of these sites contain small patches of sagebrush that are less than one acre (0.4 ha) in size. Category 3 Rabbitbrush/Snakeweed Shrub-steppe provides foraging, cover, and/or nesting habitat for white-tailed jackrabbit and grasshopper sparrow.</p>	<p>Has the same plant species, but differs in composition from Category 3 Rabbitbrush/Snakeweed Shrub-steppe in that it has a greater weed and annual grass component than Category 3 Rabbitbrush/Snakeweed Shrub-steppe. While aspect and soils may contribute somewhat to this, disturbances such as livestock grazing and fires likely have a far greater effect.</p>	-	-

Habitat type	Habitat Subtype	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Developed	Revegetated or Other Planted Grasslands	Active Washington ground squirrel colony with a 785-foot buffer (area required for squirrel survival) in suitable habitat.	Additional 4,921 foot (1.5km) buffer (area of potential WAGS use) of WAGS Category 1 habitat except where there are habitat barriers to dispersal. OR Overlaps with ODFW mule deer winter range.	Planted grasslands on previously farmed or other disturbed lands that may be enrolled in the Conservation Reserve Program. This habitat subtype is comprised mainly of native or native-like grasses. Native vegetation in Category 3 Revegetated or Other Planted Grasslands may be sparse and not well-developed, and may have a significant component of annual grasses and weeds. This habitat supports state Sensitive species such as grasshopper sparrow and white-tailed jackrabbit.	-	-	-
	Dryland Wheat	-	-	-	-	-	Agricultural fields that are currently in small grain production or fallow.
	Other	-	-	-	-	-	Includes farming/ranching home and shop sites, corrals, structures, feedlots, active and inactive gravel quarries, non-irrigated pastures, graveled and paved roads, rights-of-way, and waste areas associated with on-going human activities.

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4.0 Micrositing

Sensitive resources were avoided during development of the site boundary based on baseline surveys performed in support of the Application for Site Certificate (ASC; Wheatridge Wind Energy 2015). Pre-construction surveys performed in 2019 have informed constraints mapping used by the Certificate Holder during micrositing within the approved site boundary.

Washington ground squirrel (*Uroditellus washingtoni*) colonies were identified during surveys performed between 2011 and 2013 in support of Exhibits P and Q of the ASC (Wheatridge Wind Energy 2015). The approved site boundary avoided these colonies and their associated Category 1 habitat. No Washington ground squirrels were detected during 2019 preconstruction surveys of the Facility (Tetra Tech 2019a).

Similar to Washington ground squirrel colonies, raptor nest locations (specifically ferruginous hawks and golden eagles) were avoided during initial siting of the Facility for the ASC (Wheatridge Wind Energy 2015). The 2019 pre-construction raptor nest surveys identified 34 active nests within 2 miles of the site boundary (NWC 2019). Of those, nine nests of state sensitive raptors are within 0.25 miles of the site boundary. Condition CON-FW-02 stipulates that no ground-disturbing activity should occur within 0.25 miles of state sensitive raptor nests during seasonal restrictions. Table 3 provides information on the nest, the seasonal restriction, and the approach by the Certificate Holder to avoid impacts to the nest during construction (if nest were to be active in 2020). The location of the nests are included in Figure 1.

Table 3. 2019 State Sensitive Raptor Nests within 0.25 Miles of the Site Boundary

Nest ID	Species ¹	Nest Buffer Restriction	Mule Deer Winter Range Restriction	Resolution
3770	FEHA	March 15 – August 15	December 1 – March 31	While the nest buffer intersects the site boundary, there are no ground disturbing activities proposed within the nest buffer. All Facility components were removed from nest buffer during micrositing.
4688	SWHA	April 1 – August 15	NA	This nest is located in a tree at a residence near the intersection of HWY 207/Bombing Range Rd/Strawberry Ln, which will be used for delivery of Facility components. No ground disturbing activities will occur within the nest buffer.
4689	SWHA	April 1 – August 15	NA	While the nest buffer intersects the site boundary, there are no ground disturbing activities proposed within the nest buffer. All Facility components were removed from nest buffer during micrositing.
5001 & 5002	BUOW	April 1 – August 15	NA	The 0.25-mile buffer extends across Bombing Range Rd to the east of the burrows. Approximately 475 feet of an access road occurs within the nest buffer; however, the access road is on the opposite side of Bombing Range Rd from the burrows. The level of

Nest ID	Species ¹	Nest Buffer Restriction	Mule Deer Winter Range Restriction	Resolution
				activity associated with Bombing Range Rd effectively negates the need to extend seasonal restrictions across the road. Construction of the access road will be completed prior to April 1.
1727	SWHA	April 1 – August 15	NA	Ground disturbing activities within the nest buffer will occur outside of the nest buffer seasonal restriction. Some construction traffic may use the road within the nest buffer during the seasonal restriction.
4692	SWHA	April 1 – August 15	NA	Construction of the collector line will occur within the nest buffer but outside of the nest buffer seasonal restriction.
3789	SWHA	April 1 – August 15	December 1 – March 31	Turbine, collection, and roads are within the nest buffer. Construction will be completed prior to April 1. Work in this area will occur within the mule deer winter range restriction. The Certificate Holder has prepared an exception request to perform work in mule deer winter range during the winter range restriction.
4685	SWHA	April 1 – August 15	December 1 – March 31	While the nest buffer intersects the site boundary, there are no ground disturbing activities proposed within the nest buffer. All Facility components were removed from nest buffer during micro-siting.
4696	FEHA	March 15 – August 15	December 1 – March 31	While the nest buffer intersects the site boundary, there are no ground disturbing activities proposed within the nest buffer. All Facility components were removed from nest buffer during micro-siting.

1. BUOW = Burrowing Owl; FEHA = Ferruginous Hawk; SWHA = Swainson's Hawk.

Condition CON-FW-01 states that no construction shall occur in mule deer winter range during winter, defined as December 1 to March 31. In order to avoid ground disturbing activities within a raptor nest buffer (Nest ID 3789; Table 3) during the nesting period, the Certificate Holder must perform work associated with Turbine 111 during the mule deer winter restriction period. This includes constructing approximately 1,500 feet of access road; blasting, excavating, and pouring a concrete turbine foundation; erecting the turbine; and trenching collection lines. This would occur in revegetated grassland and dryland wheat habitat. The Certificate Holder has prepared an exception request to condition CON-FW-01 to perform this work, including a plan to avoid, minimize, and mitigate for impacts on mule deer winter range during the seasonal restriction.

Condition PRE-TE-03 states that the Certificate Holder will avoid ground disturbance where Laurent's milkvetch (*Astragalus collinus* var. *laurentii*) occurs. Pre-construction surveys identified this plant within the site boundary (Tetra Tech 2019b). The extent of the population is such that micro-siting within the site boundary cannot avoid impacts to the population. The Certificate Holder

has prepared an exception request to condition PRE-TE-03 to perform this work, including a plan to avoid, minimize, and mitigate for impacts on the rare plant population.

5.0 Temporary and Permanent Impacts

The construction area for Wheatridge West is confined to the regulatory site boundary/micrositing corridors included in the Site Certificate, as shown in Figure 1. The Wheatridge West components and their assumed temporary and permanent impact acreage are shown in Table 4, as required by condition PRE-FW-01. The SCADA system is incorporated into the components listed in Table 4. The temporary disturbance areas for each component often overlaps with the temporary disturbance areas for other components; therefore, the values presented in Table 4 should not be compared against the temporary disturbances by habitat subtype presented in this HMP. For instance, the collection system is usually sited adjacent to access roads and turbine pads, and their temporary disturbance areas overlap. See Table 5 for the presentation of temporary and permanent impact acreages that considers this overlap.

Table 4. Assumed Temporary and Permanent Impact Acreage for Wheatridge West Components

Component	Temporary Disturbance per Component ¹	Permanent Disturbance per Component	Number of Components	Project-Wide Temporary Disturbance by Component ¹	Project-Wide Permanent Disturbance by Component
Turbine ²	1.57acres	0.05 acres	120	188.4 acres	6.0 acres
Collector Substation	N/A ³	1.69 acres ⁴	1	N/A	1.69 acres
O&M Building	N/A ³	0.86 acres ⁴	1	N/A	0.86 acres
Collection System	4.8 acres per mile ⁵	N/A ⁶	134.9 miles	647.5 acres	N/A ⁶
Met Towers	0.04 acres	0.01 acres	4	0.16 acres	0.04 acres
Access Roads	4.2 acres per mile ⁷	1.9 acres per mile ⁸	42 miles	176.4	80.4
Temporary Construction Area 1	30.7	N/A ⁶	1	30.7	N/A ⁶
Temporary Construction Area 2	22.1	N/A ⁶	1	22.1	N/A ⁶
Project-Wide Grand Total				1,065.3⁸	89.0

Note: All disturbances are estimates based on GIS measurements.

1. Temporary disturbance does not include the footprint of the permanent disturbance.
2. Turbine temporary disturbance assumes a 150-foot radius work area around the center of turbine minus the permanent disturbance footprint. Turbine permanent disturbance extends 20 feet around center of turbine and includes the driveway.
3. N/A = not applicable. There are no temporary disturbances associated with this Facility component.
4. Includes driveway.
5. This assumes a 40-foot wide ground disturbance centered on the collection line.
6. N/A = not applicable. There is no permanent disturbance associated with this Facility component.

Component	Temporary Disturbance per Component ¹	Permanent Disturbance per Component	Number of Components	Project-Wide Temporary Disturbance by Component ¹	Project-Wide Permanent Disturbance by Component
7. Access roads temporary disturbance assumes a 50-foot wide temporary ground disturbance centered on the access road minus the permanent disturbance footprint. The access roads permanent disturbance assumes a 16-foot wide permanent road surface.					
8. This total includes 398 acres of overlap between the assumed temporary disturbance area of all Facility components. The actual temporary disturbance minus overlap is 667.3 acres (Table 5).					

Table 5. Temporary and Permanent Impacts by Habitat Category and Habitat Subtype in Wheatridge West

Habitat Category and Habitat Subtype	Impacts (acres) ¹	
	Temporary	Permanent
Category 2		
Developed-Revegetated or Other Planted Grassland	87.4	16.3
Grassland-Exotic Annual	10.3	1.4
Grassland-Native Perennial	18.3	3.1
Subtotal Category 2	115.9	20.9
Category 3		
Developed-Revegetated or Other Planted Grassland	44.4	3.5
Grassland-Native Perennial	32.7	5.5
Shrub-steppe-Basin Big Sagebrush	1.5	0.4
Shrub-steppe-Rabbitbrush/Snakeweed	2.4	0.0
Subtotal Category 3	80.9	9.4
Category 4		
Grassland-Exotic Annual	17.5	1.4
Shrub-steppe-Rabbitbrush/Snakeweed	0.3	0.0
Subtotal Category 4	17.8	1.5
Category 6		
Developed-Dryland Wheat	451.7	57.2
Developed-Other	1.0	0.1
Subtotal Category 6	452.6	57.3
Total for Wheatridge West	756.3	89.0
1. Totals in this table may not be precise due to rounding.		

Impacts may be permanent or temporary. Permanent impacts are defined as those impacts that will exist for the life of the Facility. Temporary impacts are those impacts that will be limited to the construction period, although recovery of habitat will vary by type. For example, the recovery period for agricultural areas that are temporarily disturbed could be as short as 1 to 3 years, while grasslands generally recover within 3 to 7 years and shrublands may require 10 to 50 years to

recover (with the longer recovery periods being associated with mature sagebrush habitats). The Certificate Holder will restore temporary impacts consistent with the Revegetation Plan.

Pre-construction Washington ground squirrel surveys did not identify any colonies within the survey area associated with Wheatridge West (Tetra Tech 2019a). Therefore, **there are no impacts to Category 1 habitat**. Also, these surveys did not identify any Washington ground squirrel colonies whose associated areas of potential Washington ground squirrel use extend into the Wheatridge West site boundary. Therefore, there are no impacts to Category 2 Washington ground squirrel habitat, and the only impacts to Category 2 habitat comes from overlap with ODFW mule deer winter range.

Table 5 shows the acres of permanent and temporary impacts in each habitat category by habitat subtype for Wheatridge West. No wetlands, perennial streams or other aquatic habitats are addressed in this document because no components of the Facility are planned for these habitat types. Figure 1 shows all areas of temporary and permanent disturbance by habitat category and habitat subtype.

6.0 Methods for Calculating Mitigation

The HMP included in the ASC had used either a 2:1 or >1:1 ratio for impacts on Category 2 habitat, depending on whether or not that habitat is within big game winter ranges. Condition PRE-FW-04(g) of the site certificate establishes that mitigation ratios for Category 2 habitat should all be the same, and that mitigation should be proposed for temporary impacts to Category 4 shrub-steppe habitat (EFSC 2017). In a conference call on November 8, 2019, ODFW provided further clarification to ODOE and the Certificate Holder that temporary impacts to Category 2 grasslands (including native, annual, and revegetated grasslands) would not require mitigation and that revegetation of those temporary disturbances should be adequate. The ratios have been modified to reflect all ODFW input. Table 6 shows the methods for calculating mitigation for permanent impacts and Table 7 shows the methods for calculating mitigation for temporary impacts. The Certificate Holder is not proposing compensatory mitigation under the ODFW Fish and Wildlife Habitat Mitigation Policy for impacts to Category 6 habitat.

Table 6. Calculating Mitigation for Permanent Impacts

Habitat Category	Impact Acres	Mitigation Ratio ¹	Mitigation Description
Category 2	1	2	The mitigation goal for Category 2 habitat is “no net loss” and “net benefit.” Accordingly, mitigation for permanent impacts on Category 2 habitat needs to demonstrate a net benefit in quality or quantity.
Category 3 and Category 4	1	1	The mitigation goal for Category 3 and 4 habitat is “no net loss” in quantity or quality.
Category 6	1	0	The mitigation goal for impacts on Category 6 habitat is minimization; no compensatory mitigation proposed.
1. Mitigation ratios follow recommendations included in the August 27, 2019 comment letter from ODFW to ODOE regarding the Draft Proposed Order for RFA 4.			

Table 7. Calculating Mitigation for Temporary Impacts

Habitat Category	Habitat Subtype	Impact Acres	Mitigation Ratio ¹	Mitigation Description
Category 2	Grassland-Native Perennial, Grassland-Exotic Annual, Developed-Revegetated or Other Planted Grassland	1	0	The mitigation goal for Category 2 habitat is “no net loss” and “net benefit.” All areas of temporary disturbance would be restored at the site of impact to meet the “no net loss” requirement. The proposed mitigation ratio for permanent impacts (Table 6) to grasslands would meet the “net benefit” requirement for all impacts to Category 2 grasslands.
Category 3	Shrub-steppe-Basin Big Sagebrush	1	1	The mitigation goal for Category 3 and 4 habitat is “no net loss” in quantity or quality. Depending on the habitat subtype temporarily disturbed, the proposed mitigation ratio would result in an equal or lesser amount of acreage of mitigation than what is impacted by the project. Combined with restoration of temporary disturbances, the proposed mitigation ratio is intended to account for the temporary loss of habitat functionality and meet the “no net loss” goal. Temporary disturbances to Category 3 and Category 4 Grasslands are not mitigated beyond restoration.
	Shrub-steppe-Rabbitbrush/Snakeweed	1	0.5	
	Grassland-Native Perennial, Developed-Revegetated or Other Planted Grassland	1	0	
Category 4	Shrub-steppe-Rabbitbrush/Snakeweed	1	0.5	The mitigation goal for Category 6 habitat is minimization; no compensatory mitigation is proposed.
	Grassland-Exotic Annual	1	0	
Category 6	Developed-Dryland Wheat, Developed-Other	1	0	

1. Mitigation ratios follow recommendations included in the August 27, 2019 comment letter from ODFW to ODOE regarding the Draft Proposed Order for RFA4.

7.0 Estimated Mitigation for Wheatridge West Wind

Table 8 applies the acres of temporary and permanent impacts shown in Table 5 with the mitigation ratios shown in Table 6 and Table 7 to estimate mitigation requirements.

Table 8. Estimated Mitigation by Habitat Category and Habitat Subtype

Habitat Category ¹	Habitat Subtype	Impact	Acres	Mitigation Ratio	Estimated Mitigation ²	Mitigation Subtotal by Habitat Category ²
2	Developed-Revegetated or Other Planted Grassland	Temp	87.4	0	0	41.8 ³
		Perm	16.3	2	32.7	
	Grassland-Exotic Annual	Temp	10.3	0	0	
		Perm	1.4	2	2.9	
	Grassland-Native Perennial	Temp	18.3	0	0	
		Perm	3.1	2	6.2	
3	Developed-Revegetated or Other Planted Grassland	Temp	44.4	0	0.0	12.1
		Perm	3.5	1	3.5	
	Grassland-Native Perennial	Temp	32.7	0	0	
		Perm	5.5	1	5.5	
	Shrub-steppe-Basin Big Sagebrush	Temp	1.5	1	1.5	
		Perm	0.4	1	0.4	
	Shrub-steppe-Rabbitbrush/Snakeweed	Temp	2.4	0.5	1.2	
		Perm	0.0	1	0.0	
4	Grassland-Exotic Annual	Temp	17.5	0	0.0	1.6
		Perm	1.4	1	1.4	
	Shrub-steppe-Rabbitbrush/Snakeweed	Temp	0.3	0.5	0.2	
		Perm	0.0	1	0.0	
TOTALS						55.5
<p>1. No mitigation is accrued for impacts on Category 6 habitat.</p> <p>2. Totals in this table may not be precise due to rounding.</p> <p>3. All Category 2 habitat mitigation originates from impacts in mule deer winter range.</p>						

8.0 Habitat Mitigation Area

The Habitat Mitigation Area (HMA) is the area where the Certificate Holder is proposing to perform enhancement and preservation actions that are in addition to the revegetation of areas of temporary disturbance associated with the Facility. The HMA must be large enough and have the characteristics to meet the standards set in OAR 635-415-0025.

According to ODFW standards, areas appropriate for mitigation of Category 2 and Category 3 habitat impacts must provide “in-kind” mitigation which creates similar structure and function to that being disturbed and also be “in-proximity” to the Project and have potential for habitat enhancement. The Certificate Holder identified privately-owned land that contains native and revegetated uplands of interest and importance for conservation. The Certificate Holder also looked for land that is within designated mule deer winter range. The Certificate Holder has secured an option agreement for up to 300 acres to be placed into a conservation easement where the HMA will be located. Once finalized, the executed conservation easement will be provided to ODOE.

8.1 Habitat Assessment and Mitigation Accounting

The Certificate Holder has identified a 187.9-acre parcel of suitable in-kind and in-proximity habitat on 2,100 acres of private land along Rock Creek in Gilliam County within which they will establish a 55.5-acre HMA. Per Condition PRE-FW-04(d), a habitat assessment of the HMA has occurred, using methods approved by ODFW (Appendix A). Primary habitat subtypes were delineated on the property by qualified biologists (the private landowners of the HMA) using an intuitive meandering pedestrian survey. The 187.9-acre parcel that will contain the 55.5-acre HMA includes two primary habitat subtypes: 1 - Native Perennial Grassland and Shrub-steppe Mosaic; and 2 - Revegetated or Other Planted Grassland (Figure 2). A few rock escarpments also occur within the parcel. These habitats correspond with those being impacted by Wheatridge West (Section 5.0). The Native Perennial Grassland and Shrub-steppe Mosaic includes native perennial grassland areas interspersed with sagebrush, rabbitbrush, and snakeweed. Representative photos of each habitat subtype are included in Appendix B. The primary habitat subtypes within the 187.9-acre parcel that will contain the 55.5-acre HMA correspond to Category 3 and Category 4 habitat subtype descriptions for Wheatridge West. However, the primary habitat subtypes in the 187.9-acre parcel that will contain the 55.5-acre HMA are in designated mule deer winter range (ODFW 2012) and are therefore modified to a Category 2 habitat.

Table 9 shows the acres of primary habitat subtypes that occur within the 187.9-acre parcel that will contain the 55.5-acre HMA that would provide a no net loss and/or a net benefit for areas disturbed by Wheatridge West. Table 10 shows the mitigation accounting that results in a net benefit for impacts in Category 2 habitat and a no net loss for impacts in Category 3 and Category 4 habitat.

Table 9. Primary Habitat Subtypes that Occur on the HMA

Habitat Category	Primary Habitat Subtype	Acres	Description
2	Native Perennial Grassland and Shrub-steppe Mosaic	90	<p><i>Grassland</i></p> <p>Soil type and depth varies but is mostly deep loamy soils. Some shallow soils on plateaus and west or south facing slopes (stony loam). Small basalt escarpments on slopes. Canyons include small seeps and springs and basin wildrye, wild rose, clematis, larkspur and phacelia.</p> <p>Dominated by native perennial bunchgrass consisting of bluebunch wheatgrass, Sandberg's bluegrass, Idaho fescue and needle-and-thread grass. Scattered mature and young shrubs, not dense except in canyons. Sagebrush and rabbitbrush. Small areas of broom snakeweed scattered in disturbed areas. Numerous native forb species such as phlox, balsamroot, woolypod milkvetch, lupine, mariposa lily, shooting star and many others.</p> <p>Includes small patches of exotic annual grass and/or weeds (cheatgrass, bulbous bluegrass, cereal ryegrass, ventenata, tumbled mustard, etc.). Open, low shrubs such as snakeweed and rabbitbrush in the annual grass sites.</p> <p><i>Shrub-steppe Mosaic</i></p> <p>Shrub-steppe patches in predominantly grassland habitat. Shrublands are dominated by cover of basin big sagebrush, some gray and green rabbitbrush and broom snakeweed. Open low shrubs such as buckwheats (<i>Erigonum</i> sp.) found in patches.</p>
	Revegetated or Other Planted Grassland	97.9	<p>Soils are mostly silt-loam. Perennial grassland revegetated after being previously farmed for dryland wheat, some historically enrolled in the Conservation Reserve Program or other previously farmed sites. Mature grasslands dominated by intermediate and tall wheatgrass and Sandberg or bulbous bluegrass, some fescue. Enhancements in the past ten years in some areas (seeding native perennials such as bluebunch wheatgrass, Idaho fescue, Sandberg's bluegrass and bottlebrush squirreltail) Residual (not previously plowed) native vegetation patches in a few locations and also on steeper slopes next to native perennial grassland. Scattered mature and young shrubs throughout (gray or green rabbitbrush, sagebrush), broom snakeweed in disturbed areas. Includes small patches of exotic annual grassland and/or weeds. Non-native forbs such as salsify, storksbill and field bindweed and native forbs such as lupine, shaggy fleabane and common yarrow.</p>

Table 10. Mitigation Accounting

Impacted Habitat Subtype	Impacted Habitat Category	Mitigation Debit from Table 8 (Acres)	HMA Primary Habitat Subtypes Mitigation Credit - Category 2 (Acres)		Mitigation Debit Balance (Acres)
			Revegetated or Other Planted Grassland	Native Perennial Grassland and Shrub-steppe Mosaic	
Developed-Revegetated or Other Planted Grassland	2	-32.7	+32.7	-	0
Grassland-Exotic Annual		-2.9	-	+2.9	0
Grassland-Native Perennial		-6.2	-	+6.2	0
All Remaining Habitat	3 and 4	-13.7	-	+13.7	0
HMA Credit Subtotal by Habitat Subtype			32.7	22.8	
HMA Credit Grand Total			55.5		

Wildlife species usage of the approximately 2,100-acre property in which the HMA lies has been recorded for the past 11 years and is similar to what has been recorded during surveys of Wheatridge West. There are 152 bird species recorded from the property containing the HMA. This includes special status nesting bird species such as grasshopper sparrow. Several species of raptors, including golden eagle and ferruginous hawk, have been documented hunting on the property containing the HMA and some species nest onsite or in the general area. Mule deer and occasionally elk are observed wintering in the HMA and nearby. Appendix C includes a list of wildlife species observed at the property. Wind-blown ridges and south-facing slopes provide for early green-up big game forage. Other long-term conserved habitat (approximately 324 acres) consisting of Native Perennial Grassland and Shrub-steppe Mosaic, cliffs and escarpments along canyons is nearby (Figure 2). The property supports documented Washington ground squirrel use areas and habitat. With the addition of this HMA, a larger more contiguous tract of preserved habitat will be available for wildlife that provides important functionality and connectivity along Rock Creek in the Columbia Plateau.

8.2 Habitat Enhancement Actions

The HMA will be placed into a conservation easement that will not allow development of the HMA for the life of the Facility. Besides such legal protection to ensure no development, potential enhancement actions for the HMA include the following.

- Grazing practices compatible with conservation—wildlife habitat values will have priority and incompatible livestock grazing practices will not be allowed.

- The Certificate Holder will work with the landowner to monitor and control County-designated noxious weeds impacting wildlife habitat quality across the entire HMA.
- Seeding and planting sagebrush—sagebrush will be planted on 1.9 acres of the HMA (Figure 2) to account for the temporary (1.5 acres) and permanent disturbance (0.4 acres) to 1.9 acres of Category 3 Shrub-steppe with Basin Big Sagebrush habitat subtype. Sagebrush planting will provide year-round thermal and hiding cover and browse for mule deer.
- A plan for fire response and control at the HMA will be coordinated with the landowner. This could be a stand-alone plan or the HMA could be included in the Facility's Emergency Management Plan. It will include fire prevention measures, methods to detect fires, and a protocol for fire response and suppression. Some example measures that could be included are:
 - No vehicular travel will be permitted during periods of high fire potential.
 - When any spark producing equipment is being used onsite, the operator and assistants will have fire suppression items readily available and cell phones for calling responders if needed.
 - Fire response and suppression would be handled by the North Gilliam County Rural Fire Protection District, 1500 Railroad Ave, Arlington, OR 97812, (541) 454-2900.
 - Suppression efforts would be tailored to the habitat subtypes on the HMA, such as allowing grass fires while focusing suppression on sagebrush plantings.
- Modification of winter human activities— commitment to minimize human-caused disturbance to mule deer during the winter period will enhance the HMA's ability to provide quality winter range. Some of the desirable winter range values described by ODFW are thermal cover, security from predation and harassment, adequate nutritional and escape from disturbance (ODFW 2013).
- Wildlife Projects:
 - Where old barbed wire fence on the HMA presents potential problems for big game and other wildlife, the Certificate Holder will work with the landowner to remove such fencing. An estimated 0.25-miles of old interior fencing is laid down or not functioning within the HMA boundary.
 - Upland gamebird/CRP-type guzzler as a watering source for wildlife. Example would be a full-ramp 500-gallon guzzler by Rainmaker Wildlife.
- Habitat protection will involve restricting any uses of the HMA that would be inconsistent with the goals of no net loss of habitats in Categories 2, 3, and 4 and a net benefit to Category 2 habitat quantity or quality.

8.3 HMA Monitoring

The Certificate Holder will hire a qualified, independent investigator (wildlife biologist, botanist, or revegetation specialist) to conduct monitoring at the HMA and the success of its protection and

(within applicable acres) enhancements. Monitoring duration is for the life of the Facility, with annual monitoring occurring over the first 5 years. After Year 5, a long-term monitoring plan will be developed in consultation with ODOE and ODFW. At a minimum, annual monitoring for the first 5 years will include assessments of:

- Description of the amount and quality of vegetation at the HMA. Describe year-to-date climate data;
- Success of weed control measures;
- Degree of recovery of native grasses and forbs following disturbances such as habitat enhancement actions, fire, or erosion;
- Success of sagebrush plantings monitored in a 50- by 100-foot plot within each of the two planting areas (Figure 2). Three 50-foot transects will be established perpendicular to the long side of the plot. The transect monitoring will be of 6-foot wide belt transects with all shrubs occurring within the belt transect being recorded;
- Wildlife observed and notes on special status species (wildlife and plants) present;
- Observations of wintering mule deer will be recorded as observed from a distance (so disturbance is kept at a minimum); and
- Maintenance needs of guzzler.

Methods and results of all monitoring will be reported to ODOE and ODFW, along with a report of the mitigation/enhancement measures undertaken since the last monitoring report. An annual monitoring report outline is included as Appendix D. This outline is subject to change based on actual executed easement.

8.4 HMA Success Criteria

The goal of the habitat mitigation described herein is to protect and enhance a sufficient quantity of habitat to meet ODFW standards of no net loss of habitat Category 3 and Category 4 and a net gain in habitat quantity and quality of Category 2. Habitat protection alone—apart from enhancement—is not sufficient to meet the net-benefit criterion for Category 2 habitat. The entire HMA is within Category 2 mule deer winter range, so modifying the category through habitat enhancement actions is not possible. However, habitat enhancement actions will be implemented, and progress can be monitored against baseline conditions to determine success. It is also assumed that the Category 2 habitat in the HMA is currently functioning at a higher quality than the Category 2 habitat being disturbed at the Facility because the HMA contains a greater acreage of contiguous native grassland and shrub-steppe mosaic compared to what is being impacted by the Facility (122 acres at the HMA versus approximately 60 acres impacted by the Facility). Table 11 shows the success criteria for the habitat enhancement actions proposed in Section 7.2.

Table 11. HMA Success Criteria

Habitat Enhancement Action	Success Criteria
Grazing practices compatible with conservation	<p>The Easement terms state that grazing, nature study, and other land uses are permitted provided that conservation and wildlife habitat values and wildlife use shall take precedence and priority where such uses are or may be deemed incompatible.</p> <p>Under the current ownership, no grazing is expected. If grazing is used in the future, monitoring of shrub recruitment and recruitment of other desirable shrub-steppe species can occur through photo point monitoring and qualitative observations.</p>
County-designated noxious weed control	Control of County-designated noxious weeds at the HMA. Photo point monitoring will show that known sites of noxious weeds are not expanding or have been reduced or eliminated. Chemical control is the most likely method to be used; however, mechanical control methods may also be used depending on site-specific conditions.
Planting of sagebrush.	Successful establishment of sagebrush on 1.9 acres of the HMA in two areas (Figure 2). Photo point monitoring will show successful shrub establishment where planted. The average density or frequency of the shrub component should be at least 50 percent of the reference site established at the Facility for revegetation monitoring.
Fire response plan	Deliver a plan for the HMA to the North Gilliam County Rural Fire Protection District
Modification of winter human activities	Minimize human disturbance on the HMA from December 1 to March 31. Schedule routine ranch activities to be performed during other times of the year. There are no public roads or access points in or adjacent to the HMA. Ensure that signage where public roads intersect with access points to the property within which the HMA is located are clearly marked as private property with no trespassing.
Removal of old barbed wire fences	Removal and disposal of approximately 0.25-miles of old barbed wire fencing will be deemed successful through photographic documentation.
Installation of a wildlife guzzler	This action will be deemed successful after installation is complete. Monitoring reports will confirm continued operation and describe any maintenance activities performed to keep the guzzler in operation.

9.0 Implementation Schedule

As required by condition PRE-FW-04 (e), Table 12 includes a schedule for implementation of all mitigation actions, including those covered in other pre-construction compliance plans.

Table 12. Mitigation Implementation Schedule

Mitigation Action	Schedule	Associated Plan
Restoration and revegetation of temporary construction-related impacts at the Facility.	As soon as possible following construction. Late fall seeding, just before the soil freezes, is typical when seeding grasses in the Columbia basin shrub-steppe ecoregion. Seeding can occur through early spring.	Wheatridge Wind Energy Project Revegetation Plan
Monitoring revegetation success at the Facility.	<p>Annually for the first 5 years. Annual monitoring is anticipated to occur in the fall, with the annual monitoring report being provided the following spring.</p> <p>The Certificate Holder will consult with ODOE and ODFW to design a long-term monitoring schedule.</p>	Wheatridge Wind Energy Project Revegetation Plan
Monitoring weed control in the Facility revegetation areas.	<p>Annually for the first five years. Early detection is paramount for successful weed control. Therefore, monitoring may occur earlier in the growing season and again during revegetation monitoring. Reporting on noxious weeds will be included in the revegetation annual monitoring report.</p> <p>The Certificate Holder will consult with ODOE and ODFW to design a long-term monitoring schedule.</p>	Wheatridge Wind Energy Project Noxious Weed Control Plan
Securing the conservation easement establishing the HMA.	Prior to commencing construction.	Wheatridge Wind Energy Project Habitat Mitigation Plan
Performing habitat enhancement actions at the HMA.	Concurrently with construction.	Wheatridge Wind Energy Project Habitat Mitigation Plan
Monitoring habitat enhancement actions at the HMA.	<p>Annually for the first 5 years. Annual monitoring is anticipated to occur in the fall, with the annual monitoring report being provided the following spring.</p> <p>Then the Certificate Holder will consult with ODOE and ODFW to design a long-term monitoring schedule.</p>	Wheatridge Wind Energy Project Habitat Mitigation Plan

10.0 Amendment of the HMP

The final HMP may be amended from time to time by agreement of the Certificate Holder and EFSC. Such amendments may be made without amendment of the site certificate. EFSC authorizes ODOE to agree to amendments to this plan. ODOE shall notify EFSC of all amendments, and EFSC retains the authority to approve, reject, or modify any amendment of this plan agreed to by ODOE.

11.0 References

- EFSC (Energy Facility Siting Council). 2017. Final Order: In the Matter of the Application for a Site Certificate for the Wheatridge Wind Energy Facility. April 2017.
- ODFW (Oregon Department of Fish and Wildlife). 2012. Elk and Deer Winter Range for Eastern Oregon, East of the Crest of the Cascades. GIS data files (2). Available online at: <https://nrimp.dfw.state.or.us/DataClearinghouse/default.aspx?p=202&XMLname=885.xml>
- ODFW. 2013. 2013 Oregon Big Game Winter Range Habitat Rationale. September 6, 2013.
- Tetra Tech. 2019. 2019 Washing Ground Squirrel Survey Report. Prepared for NextEra Energy. Portland, OR.

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Figures

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Appendix A. Email Approval from ODFW on Habitat Categorization Surveys

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Appendix B. Photolog

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**Appendix C. Wheatridge Habitat
Mitigation Area and Surrounding Area
Comprehensive List of All Vertebrate
Wildlife Observed 2008–2019**

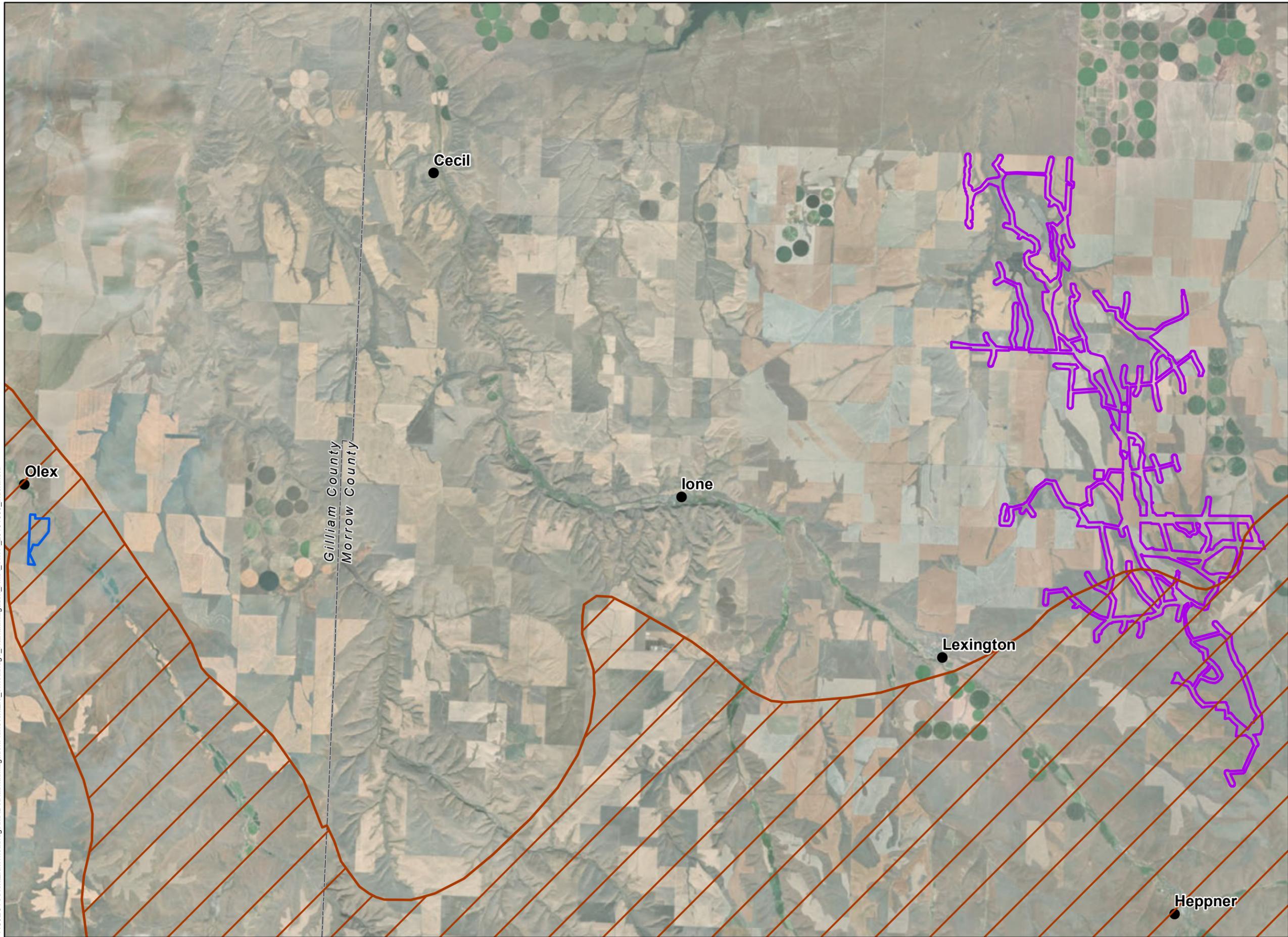
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Appendix D. Wheatridge Wind Energy Facility's Habitat Mitigation Area Annual Reporting Outline

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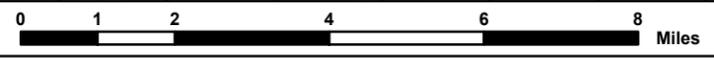
Figure 2
Wheatridge Wind Energy
Final Habitat Mitigation Plan
 Overview - Habitat Mitigation Area
 GILLIAM AND MORROW COUNTY, OR

-  Wheatridge West Site Boundary
-  Habitat Mitigation Area
-  ODFW Mule Deer Winter Range
-  City/Town
-  County Boundary



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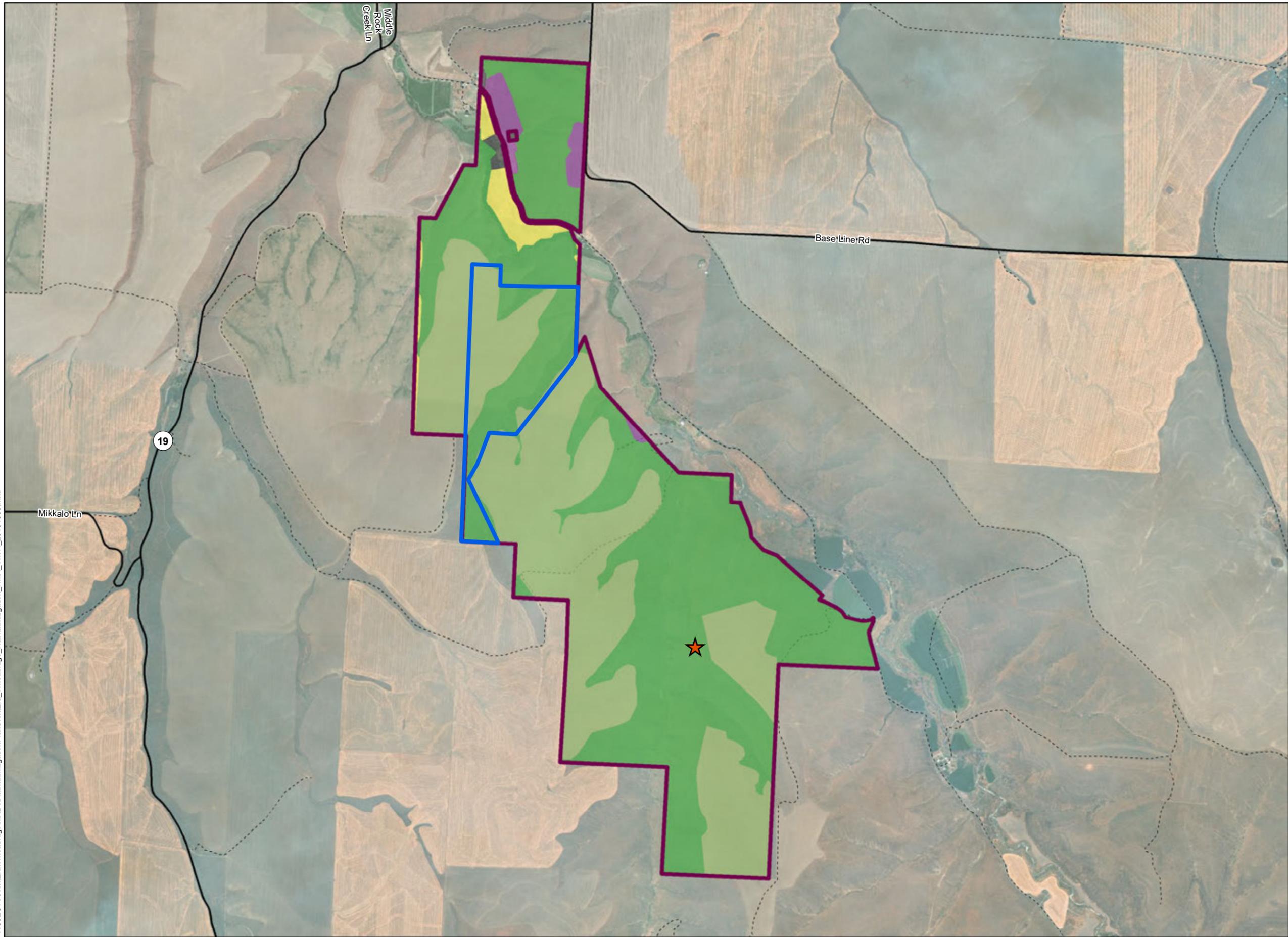
 1:150,000 WGS 1984 UTM Zone 11N



Not for Construction

Figure 2.1
Wheatridge Wind Energy
Final Habitat Mitigation Plan
 Detailed - Habitat Mitigation Area
 MORROW COUNTY, OR

-  Olex Property Boundary
 -  324 acres in Current Conservation
 -  Habitat Mitigation Area
 -  Secondary Road
 -  Local Road
 -  County Boundary
- Habitat Subtype**
-  Agriculture
 -  Developed
 -  Native Perennial Grassland and Shrub-steppe Mosaic
 -  Old Field
 -  Revegetated or Other Planted Grassland



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Appendix A. Email Approval from ODFW on Habitat Categorization Surveys

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From: [Cambier, Matt](#)
To: [Merrick, Jennifer](#)
Subject: FW: Wheatridge Wind Pre-Construction Habitat Categorization Survey Protocol
Date: Tuesday, June 18, 2019 3:07:02 PM

Jennifer,

Email approval from ODFW on Habitat Categorization surveys for compliance with F&W 1.

Matt Cambier | Biologist

Direct: 208.489.2861 | Cell: 208.954.9415
matt.cambier@tetrattech.com

Tetra Tech | Boise Office

3380 Americana Terrace, Suite 201 | Boise, Idaho 83706 | www.tetrattech.com

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From: Steve Cherry <Steve.P.Cherry@state.or.us>
Sent: Monday, June 10, 2019 10:44 AM
To: Cambier, Matt <Matt.Cambier@tetrattech.com>; Steve Cherry <steve.p.cherry@state.or.us>
Cc: Konkol, Carrie <Carrie.Konkol@tetrattech.com>; 'Pappalardo, Mike' <MIKE.PAPPALARDO@nexteraenergy.com>; Hurley, Susan <Susan.Hurley@tetrattech.com>
Subject: RE: Wheatridge Wind Pre-Construction Habitat Categorization Survey Protocol

 **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. 

This all looks good to me. I think you have covered the appropriate issues that need to be addressed in the final habitat assessment. Please let me know if you need anything else.

Steve

From: Cambier, Matt <Matt.Cambier@tetrattech.com>
Sent: Thursday, June 6, 2019 9:16 AM
To: Steve Cherry <steve.p.cherry@state.or.us>
Cc: Konkol, Carrie <Carrie.Konkol@tetrattech.com>; 'Pappalardo, Mike' <MIKE.PAPPALARDO@nexteraenergy.com>; Hurley, Susan <Susan.Hurley@tetrattech.com>
Subject: RE: Wheatridge Wind Pre-Construction Habitat Categorization Survey Protocol

Steve,

Meant to send the PDF version with map. See attached.

Matt Cambier | Biologist

Direct: 208.489.2861 | Cell: 208.954.9415
matt.cambier@tetrattech.com

Tetra Tech | Boise Office

3380 Americana Terrace, Suite 201 | Boise, Idaho 83706 | www.tetrattech.com

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From: Cambier, Matt

Sent: Thursday, June 06, 2019 9:57 AM

To: Steve Cherry <steve.p.cherry@state.or.us>

Cc: Konkol, Carrie <Carrie.Konkol@tetrattech.com>; 'Pappalardo, Mike' <MIKE.PAPPALARDO@nexteraenergy.com>; Hurley, Susan <Susan.Hurley@tetrattech.com>

Subject: Wheatridge Wind Pre-Construction Habitat Categorization Survey Protocol

Steve,

Attached is a memo of the survey protocol for the pre-construction habitat categorization effort that will begin next week for the Wheatridge project. Please review and provide your approval (and any requested changes) via email.

Thank you.

Matt Cambier | Biologist

Direct: 208.489.2861 | Cell: 208.954.9415

matt.cambier@tetrattech.com

Tetra Tech | Boise Office

3380 Americana Terrace, Suite 201 | Boise, Idaho 83706 | www.tetrattech.com

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MEMO

To:	Steve Cherry, Oregon Department of Fish and Wildlife
Cc:	Mike Pappalardo, NextEra; Carrie Konkol, Tetra Tech
From:	Susan Hurley and Matt Cambier, Tetra Tech
Date:	June 5, 2019
Correspondence #	TTCES-PTLD-2019-086
Subject:	Wheatridge West 2019 Pre-Construction Habitat Categorization Survey Protocol

Wheatridge Wind Energy, LLC (Wheatridge) an indirect subsidiary of NextEra Energy Resources, LLC (NEER) received a site certificate authorizing certificate holder to construct, operate, and retire the Wheatridge Wind Energy Facility within Morrow and Umatilla counties.

The site certificate approves construction of facilities in Umatilla County and two consolidated site battery storage systems; however, the Umatilla County and battery storage system facilities are not identified for construction as part of the Wheatridge West Project (Project) area. This memo describes the habitat categorization surveys proposed to occur in support of the Project area, located only in Morrow County, Oregon.

The Wheatridge West facility components that Wheatridge intends to begin constructing as early as November 2019 will include:

- Approximately 120 turbines;
- One collector substation;
- One operations and maintenance (O&M) building;
- The Communication and Supervisory Control and Data Acquisition System;
- The electrical collection system;
- Approximately 4 met towers;
- Temporary construction areas;
- New access roads; and

- Other public road improvements, including increases to the turning radius in several locations.

Wheatridge intends to begin construction of the above facilities as early as November 2019, with construction being completed in advance of a December 2020 operational date. In addition, this pre-construction compliance survey covers the maximum area in which solar facilities could be constructed, as described in the Preliminary Request for Amendment #4 (Wheatridge 2019). Construction timing for the proposed solar facilities is under review.

NextEra contracted with Tetra Tech, Inc. (Tetra Tech) to conduct these surveys for the Project pre-construction survey per condition PRE-FW-01 - habitat categorization, as presented in the Final Order on the Application for Site Certificate for the Wheatridge Wind Energy Facility through the Oregon Energy Facility Siting Council (EFSC 2017). The Survey Area (see attached figure) encompasses all areas of potential impact for both wind and solar facility components at Wheatridge West. The Survey Area is a combination of the micrositing corridor approved for the wind facilities described in the ASC and the amended site boundary associated with the solar facility described in Request for Amendment #4. However, the Survey Area only includes portions of the wind facility micrositing corridor that contain temporary and/or permanent disturbances associated with construction (the micrositing corridor, as permitted, is not going to be completely utilized due to Project design changes).

Survey Approach and Schedule

Condition PRE-FW-01 (EFSC 2017) reads:

“Prior to final site design and facility layout, the certificate holder shall conduct a field-based habitat survey to confirm the habitat categories of all areas that will be affected by facility components, as well as the locations of any sensitive resources such as active raptor and other bird nests. The survey shall be planned in consultation with the department and ODFW, and survey protocols shall be confirmed with the department and ODFW. Following completion of the field survey, and final layout design and engineering, the certificate holder shall provide the department and ODFW a report containing the results of the survey, showing expected final location of all facility components, the habitat categories of all areas that will be affected by facility components, and the locations of any sensitive resources.

The report shall also include an updated version of Table FW-1 Potential Temporary and Permanent Impacts by Habitat Category and Type of the final order, showing the acres of expected temporary and permanent impacts to each habitat category, type, and sub-type. The preconstruction survey shall be used to complete final design, facility layout, and micrositing of facility components. As part of the report, the certificate holder shall include its impact assessment methodology and calculations, including assumed temporary and permanent impact acreage for each transmission structure, wind turbine, access road, and all other facility components. If construction laydown yards are to be retained post construction, due to a landowner request or otherwise, the construction laydown yards must be calculated as permanent impacts, not temporary.

In classifying the affected habitat into habitat categories, the certificate holder shall consult with the department and ODFW. The certificate holder shall not begin construction of the facility until the habitat assessment, categorization, and impact assessment has been approved by the department, in consultation with ODFW. The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.”

Tetra Tech will use aerial photography, topographic maps, National Land Cover Database, Northwest Regional Gap Analysis data, and Oregon Department of Fish and Wildlife (ODFW) Big Game habitat data to confirm habitat types within the Survey Area that were previously mapped for the Project. Previous habitat polygons will be reviewed using these desktop sources and edited to reflect obvious land use changes. These edits and less obvious changes to habitat type and/or habitat category will be confirmed during field efforts. Consistent with Fish and Wildlife Condition 1 (EFSC 2017), habitat categories will be identified in the Survey Area (see attached figure), as well as the locations of any sensitive resources observed while performing the habitat survey, such as active raptor and other bird nests.

Habitat will be mapped and classified per the habitat categories set forth in Oregon Administrative Rules (OAR) 635-415-0025, including an assessment of habitat quality. If a biologist determines that a habitat type designation or categorization does not correspond to conditions previously described, or that the extent of a previously described area had changed, that area will be surveyed to assess habitat type and category in a manner consistent with previous survey definitions (Wheatridge 2015, Wheatridge 2019). Surveyors will document all state sensitive wildlife species observed during surveys, as well as noxious weeds and Oregon Department of Agriculture-listed and candidate plant species with the potential to occur at the Project (Wheatridge 2019). The schedule for field efforts is tentatively set to begin on June 12, 2019. The surveys will be completed in 5-10 days and a survey report will be prepared in a timeframe that meets all applicable pre-construction conditions.

The survey report will contain the results of this habitat mapping and categorization effort, along with a summary of the state sensitive wildlife species observed during other surveys conducted at the Project. According to the requirements of Fish and Wildlife Condition 1 (EFSC 2017), Tetra Tech will include in the report a map showing expected final location of all Project components, the habitat categories of all areas that will be affected by Project components, and the locations of any sensitive resources. The report shall also include an updated version of Table FW-1 (Potential Temporary and Permanent Impacts by Habitat Category and Type) from the Final Order, showing the acres of expected temporary and permanent impacts to each habitat category, type, and sub-type. The report will include impact assessment methodology and calculations, including assumed temporary and permanent impact acreage for each transmission structure, wind turbine, access road, and all other facility components.

EFSC (Energy Facility Siting Council). 2017. Final Order on the Wheatridge Wind Energy Facility. April 2017.

Wheatridge (Wheatridge Wind Energy, LLC). 2015. Wheatridge Wind Energy Facility Application for Site Certificate. Prepared by Tetra Tech, Inc. July 2015.

Wheatridge (Wheatridge Wind Energy, LLC). 2019. Preliminary Request for Amendment #4 for the Wheatridge Wind Energy Facility. Prepared by Tetra Tech, Inc. November 2018.

Wheatridge Wind Energy Facility



Habitat Survey Area

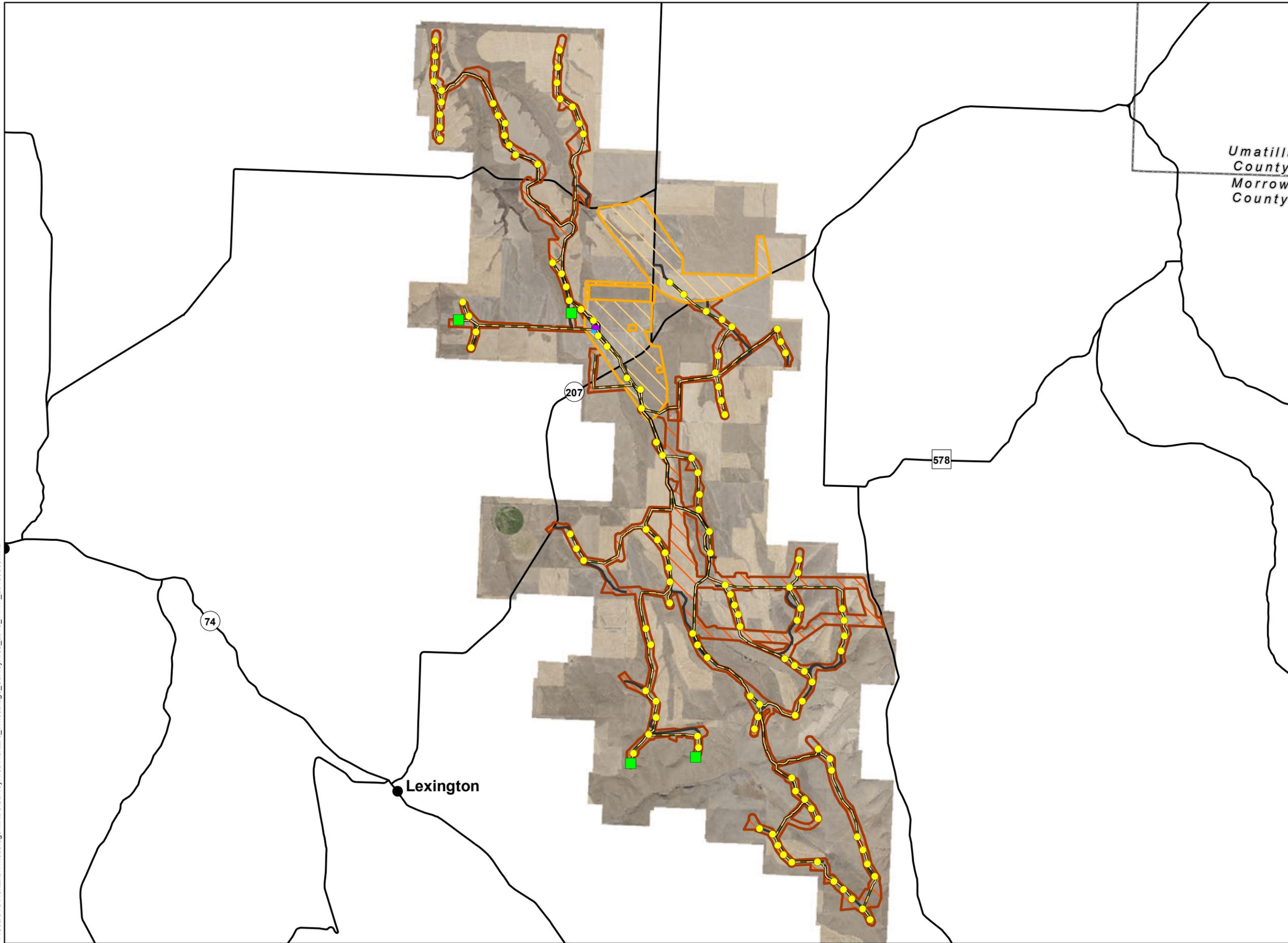
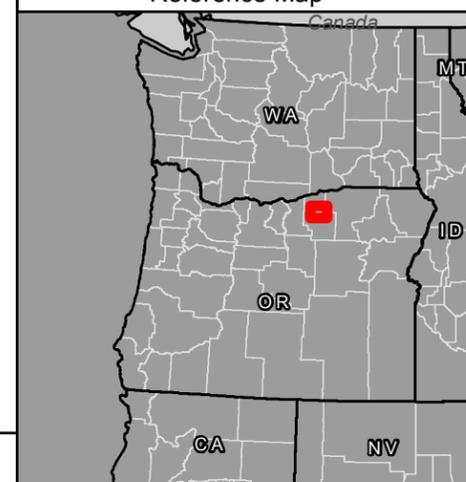
UMATILLA COUNTY, OR

Umatilla
County
Morrow
County

- Solar Survey Area
- Wind Survey Area
- Turbine
- Met Tower
- Substation
- O&M Facility
- Collection Lines
- Access Road
- Secondary Road
- City/Town



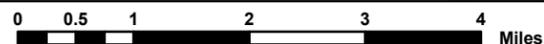
Reference Map



P:\GIS_PROJECTS\NextEra\Wheatridge\SurveyArea\Areal\NextEra_Wheatridge_SurveyArea_2019_111171_20190605.mxd



1:100,000 WGS 1984 UTM Zone 11N



NOT FOR CONSTRUCTION

Archived: Wednesday, September 4, 2019 1:51:17 PM

From: Steve Cherry

Sent: Fri, 16 Aug 2019 17:44:43

To: Cambier, Matt; Steve Cherry; ESTERSON Sarah * ODOE

Cc: Konkol, Carrie; Merrick, Jennifer; Hurley, Susan; Karen Kronner; Pappalardo, Mike

Subject: RE: Wheatridge West HMA habitat assessment protocol

Sensitivity: Normal

\u9888 ? **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. \u9888 ?

That methodology looks acceptable to ODFW. I appreciate you putting that together for us. Please let me know if you need anything else. Thanks

Steve

From: Cambier, Matt <Matt.Cambier@tetrattech.com>

Sent: Wednesday, August 14, 2019 3:35 PM

To: Steve Cherry <steve.p.cherry@state.or.us>; ESTERSON Sarah * ODOE <Sarah.Esterson@oregon.gov>

Cc: Konkol, Carrie <Carrie.Konkol@tetrattech.com>; Merrick, Jennifer <Jennifer.Merrick@tetrattech.com>; Hurley, Susan <Susan.Hurley@tetrattech.com>; Karen Kronner <Kronner@NW-WildlifeConsultants.com>; Pappalardo, Mike <MIKE.PAPPALARDO@nexteraenergy.com>

Subject: Wheatridge West HMA habitat assessment protocol

Hi Sarah and Steve,

Attached is a memo describing the habitat assessment of the HMA that will be included in the Final HMP for Wheatridge West. Per condition PRE-FW-04 (d) – as recommended in the DPO for RFA4, the certificate holder needs to get approval of the habitat assessment methods from ODOE and ODFW.

PRE-FW-04 (d) *The certificate holder shall provide a habitat assessment of the habitat mitigation area, based on a protocol approved by the Department in consultation with ODFW, which includes methodology, habitat map and available acres by habitat category and subtype in tabular format.*

Please review and provide either your approval or your recommended changes.

Thank you.

Matt Cambier | Biologist

Direct: 208.489.2861 | Cell: 208.954.9415

matt.cambier@tetrattech.com

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MEMO

To: Steve Cherry, Oregon Department of Fish and Wildlife; Sara Esterson, Oregon Department of Energy

Cc: Mike Pappalardo, NextEra; Carrie Konkol, Tetra Tech; Karen Kronner, NWC

From: Matt Cambier and Susan Hurley, Tetra Tech

Date: August 14, 2019

Correspondence # TTCES-PTLD-2019-124

Subject: Wheatridge West Project: 2019 Habitat Assessment Protocol for Habitat Mitigation Area

Wheatridge Wind Energy, LLC (Wheatridge) an indirect subsidiary of NextEra Energy Resources, LLC (NEER) received a site certificate authorizing certificate holder to construct, operate, and retire the Wheatridge Wind Energy Facility within Morrow and Umatilla counties.

The site certificate approves construction of facilities in Umatilla County and two consolidated site battery storage systems; however, the Umatilla County and battery storage system facilities are not identified for construction as part of the Wheatridge West Project (Project) area. This memo describes the habitat assessment protocol to be used to evaluate the habitat subtypes and categories available at the Habitat Mitigation Area (HMA) being proposed in the Project's Habitat Mitigation Plan (HMP).

The HMP is being finalized prior to construction in accordance with site certificate conditions PRE-FW-01 and PRE-FW-04. Condition PRE-FW-04 was modified on July 25, 2019 in the Draft Proposed Order¹ on Request for Amendment 4 of the Site Certificate to require a habitat assessment of the HMA. The additional language regarding the habitat assessment is at PRE-FW-04(d) and reads:

PRE-FW-04 (d) *The certificate holder shall provide a habitat assessment of the habitat mitigation area, based on a protocol approved by the Department in consultation with ODFW, which includes methodology, habitat map and available acres by habitat category and subtype in tabular format.*

¹ The Draft Proposed Order on Request for Amendment 4 of the Site Certificate Energy Facility Siting Council Hearing is scheduled for August 22, 2019.

Wheatridge West HMA Habitat Assessment Protocol

The HMA is the area where the Certificate Holder is proposing to perform enhancement and preservation actions that are in addition to the revegetation of areas of temporary disturbance associated with the Project. The Certificate Holder identified privately-owned land that contains native and revegetated uplands of interest and importance for conservation.

The private land owners of the HMA are Karen Kronner and Bob Gritski. Karen is the president of Northwest Wildlife Consultants, Inc., an Oregon registered woman business enterprise specializing in Columbia Basin and Great Basin wildlife and botanical surveys, monitoring and environmental permitting for wind power and other energy projects. Karen and Bob are experienced biologists, with a working familiarity of the habitat subtypes being impacted by the Project. They have delineated the habitat subtypes on their property already.

The habitat assessment that will be included in the HMP will show the following:

1. habitat subtypes as delineated by the land owners in a tabular format by acreage;
2. habitat subtypes as delineated by the land owners in a map/figure;
3. a general description of each habitat subtype including the dominant grasses, forbs, and/or shrubs found in each;
4. representative photos of each habitat subtype; and
5. the habitat subtypes at the HMA will be categorized following the methods in the ODFW Habitat Mitigation Policy, in the same manner that habitat categorization was performed for the Project.

Appendix B. Photolog

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Photo 1. Big Game Winter Range. Mule deer in native grassland and basin big sagebrush/rabbitbrush cover, early winter.



Photo 2. Big Game Winter Range. Upper half of photo is upland habitat in winter at the HMA and surrounding ranch property. There are canyons with cover, shallow soil slopes that have green up starting in late fall to early winter and topographic relief for escape cover.



Photo 3. Native Perennial Grassland and Shrub-steppe Mosaic. Exotic Annual Grassland with some residual native perennial grasses, native forbs, and scattered sagebrush and rabbitbrush. Fall season photo.



Photo 4. Native Perennial Grassland and Shrub-steppe Mosaic. Native perennial grassland, scattered shrubs, exotic annual grasses, snakeweed, Basin big sagebrush and grey and green rabbitbrush. Large canyon with seeps and springs and basin wild ryegrass. Fall season photo.



Photo 5. Native Perennial Grassland and Shrub-steppe Mosaic. Native perennial grassland with scattered shrubs, sagebrush in lower elevations.



Photo 6. Native Perennial Grassland and Shrub-steppe Mosaic. Native perennial grassland in canyon with forbs, shrubs, and clematis. North-facing slope with deeper soils and south-facing slope with shallow soil and basalt outcroppings. Resting and escape cover for deer and elk.



Photo 7. Native Perennial Grassland and Shrub-steppe Mosaic. Example of inclusions of annual grasses (cheatgrass) with some native perennial grasses, native forbs, and scattered sagebrush and rabbitbrush.



Photo 8. Revegetated or Other Planted Grassland. Higher elevation is planted perennial grassland (revegetated with 3-5 grass species). Slopes are native perennial grasses with patches of exotic annual grasses.



Photo 9. Revegetated or Other Planted Grassland. Mature revegetated grassland with scattered rabbitbrush and sagebrush. Perennial grasses, exotic annual grasses and some native bunchgrass and forbs.



Photo 10. Native Perennial Grassland and Shrub-steppe Mosaic. Example of inclusions of basin big sagebrush.



Photo 11. Native Perennial Grassland and Shrub-steppe Mosaic. Example of inclusions of basin big sagebrush and rabbitbrush.



Photo 12. Native Perennial Grassland and Shrub-steppe Mosaic. Maturing shrub-steppe: sagebrush, gray and green rabbitbrush, snakeweed. Perennial and annual grasses. Native perennial grassland on slope. Canyon with shrubs and seeps.

**Appendix C. Wheatridge Habitat
Mitigation Area and Surrounding Area
Comprehensive List of All Vertebrate
Wildlife Observed 2008–2019**

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Wheatridge Habitat Mitigation Area and Surrounding Area Comprehensive List of all Vertebrate Wildlife Observed 2008-2019

(listed alphabetically within wildlife groups and classes)

Common Name	<i>Scientific Name</i>
Birds - 152	
<i>Waterfowl - 11</i>	
American white pelican	<i>Pelecanus erythrorhynchos</i>
Blue-winged teal	<i>Anas discors</i>
Canada goose	<i>Branta canadensis</i>
Cinnamon teal	<i>Anas cyanoptera</i>
Common merganser	<i>Mergus merganser</i>
Greater white-fronted goose	<i>Anser albifrons</i>
Green-winged teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</i>
Northern pintail	<i>Anas acuta</i>
Northern shoveler	<i>Anas clypeata</i>
Snow goose	<i>Chen caerulescens</i>
<i>Raptors - 21</i>	
Cooper's hawk	<i>Accipiter cooperii</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Ferruginous hawk ¹	<i>Buteo regalis</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Rough-legged hawk	<i>Buteo lagopus</i>
Swainson's hawk ¹	<i>Buteo swainsoni</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Golden eagle	<i>Aquila chrysaetos</i>
American kestrel	<i>Falco sparverius</i>
Merlin	<i>Falco columbarius</i>
Peregrine falcon	<i>Falco peregrinus</i>
Prairie falcon	<i>Falco mexicanus</i>
Northern harrier	<i>Circus cyaneus</i>
Osprey	<i>Pandion haliaetus</i>
Barn owl	<i>Tyto alba</i>
Barred Owl	<i>Strix varia</i>
Great horned owl	<i>Bubo virginianus</i>
Northern saw-whet owl	<i>Aegolius acadicus</i>
Short-eared owl	<i>Asio flammeus</i>
Western screech owl	<i>Megascops kennicottii</i>

Common Name	Scientific Name
Turkey vulture	<i>Cathartes aura</i>
Crane - 1	
Sandhill crane	<i>rus canadensis</i>
Dove - 3	
Eurasian collared-dove	<i>Streptopelia decaocta</i>
Mourning dove	<i>Zenaida macroura</i>
Rock pigeon	<i>Columba livia</i>
Gamebird - 5	
California quail	<i>Callipepla californica</i>
Chukar	<i>Alectoris chukar</i>
Gray partridge	<i>Perdix perdix</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Wild turkey	<i>Meleagris gallopavo</i>
Goatsucker - 2	
Common nighthawk ¹	<i>Chordeiles minor</i>
Common poorwill	<i>Phalaenoptilus nuttallii</i>
Gull - 2	
Franklin's gull	<i>Larus pipixcan</i>
Western gull	<i>Larus occidentalis</i>
Hummingbird - 4	
Anna's hummingbird	<i>Calypte anna</i>
Black-chinned hummingbird	<i>Archilochus alexandri</i>
Calliope hummingbird	<i>Stellula calliope</i>
Rufous hummingbird	<i>Selasphorus rufus</i>
Kingfisher - 1	
Belted kingfisher	<i>Ceryle alcyon</i>
Shorebird - 5	
Greater yellowlegs	<i>Tringa melanoleuca</i>
Killdeer	<i>Charadrius vociferous</i>
Long-billed curlew ¹	<i>Numenius americanus</i>
Spotted sandpiper	<i>Actitis macularius</i>
Wilson's snipe	<i>Gallinago delicata</i>
Swift - 1	
Vaux's swift	<i>Chaetura vauxi</i>
Wading Bird - 5	
American bittern	<i>Botaurus lentiginosus</i>
American coot	<i>Fulica americana</i>

Common Name	Scientific Name
Black-crowned night-heron	<i>Nycticorax nycticorax</i>
Great blue heron	<i>Ardea herodias</i>
Virginia rail	<i>Rallus limicola</i>
Woodpecker - 5	
Downy woodpecker	<i>Picoides pubescens</i>
Hairy woodpecker	<i>Picoides villosus</i>
Lewis' woodpecker ¹	<i>Melanerpes lewis</i>
Northern flicker	<i>Colaptes auratus</i>
Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>
Passerine - 81	
American goldfinch	<i>Carduelis tristis</i>
American pipit	<i>Anthus rubescens</i>
American robin	<i>Turdus migratorius</i>
American tree sparrow	<i>Spizelloides arborea</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Bank swallow	<i>Riparia riparia</i>
Barn swallow	<i>Hirundo rustica</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Black-capped chickadee	<i>Poecile atricapillus</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Black-throated gray warbler	<i>Dendroica nigrescens</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brown creeper	<i>Certhia americana</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bullock's oriole	<i>Icterus bullockii</i>
Bushtit	<i>Psaltriparus minimus</i>
Canyon wren	<i>Catherpes mexicanus</i>
Cassin's finch	<i>Carpodacus cassinii</i>
Cassin's vireo	<i>Vireo cassinii</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Chipping sparrow	<i>Spizella passerina</i>
Cliff swallow	<i>Hirundo pyrrhonota</i>
Common redpoll	<i>Acanthis flammea</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>
European starling	<i>Sturnus vulgaris</i>

Common Name	Scientific Name
Evening grosbeak	<i>Coccothraustes vespertinus</i>
Fox sparrow	<i>Passerella iliaca</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
Grasshopper sparrow ¹	<i>Ammodramus savannarum perpallidus</i>
Gray flycatcher	<i>Empidonax wrightii</i>
Hammond's flycatcher	<i>Empidonax hammondi</i>
Harris's sparrow	<i>Zonotrichia querula</i>
Hermit thrush	<i>Catharus guttatus</i>
Horned lark	<i>Eremophila alpestris</i>
House finch	<i>Carpodacus mexicanus</i>
House sparrow	<i>Passer domesticus</i>
House wren	<i>Troglodytes aedon</i>
Lark sparrow	<i>Chondestes grammacus</i>
Lazuli bunting	<i>Passerina amoena</i>
Lesser goldfinch	<i>Carduelis psaltria</i>
Loggerhead shrike ¹	<i>Lanius ludovicianus</i>
MacGillivray's warbler	<i>Oporornis tolmiei</i>
Mountain chickadee	<i>Poecile gambeli</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Northern shrike	<i>Lanius excubitor</i>
Olive-sided flycatcher	<i>Contopus cooperi</i>
Orange-crowned warbler	<i>Oreothlypis celata</i>
Pacific wren	<i>Troglodytes pacificus</i>
Pine siskin	<i>Carduelis pinus</i>
Purple finch	<i>Carpodacus purpureus</i>
Red crossbill	<i>Loxia curvirostra</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rock wren	<i>Salpinctes obsoletus</i>
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Say's phoebe	<i>Sayornis saya</i>
Song sparrow	<i>Melospiza melodia</i>
Spotted towhee	<i>Pipilo maculatus</i>
Townsend's solitaire	<i>Myadestes townsendi</i>

Common Name	Scientific Name
Townsend's warbler	<i>Dendroica townsendi</i>
Tree swallow	<i>Tachycineta bicolor</i>
Varied thrush	<i>Ixoreus naevius</i>
Vesper sparrow	<i>Pooecetes gramineus</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Warbling vireo	<i>Vireo gilvus</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western tanager	<i>Piranga ludoviciana</i>
Western wood-peewee	<i>Contopus sordidulus</i>
White-breasted nuthatch	<i>Sitta carolinensis</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
White-throated sparrow	<i>Zonotrichia albicollis</i>
Willow flycatcher	<i>Empidonax traillii</i>
Wilson's warbler	<i>Wilsonia pusilla</i>
Yellow warbler	<i>Setophaga petechia</i>
Yellow-breasted chat	<i>Icteria virens</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>
Corvid - 5	
American crow	<i>Corvus brachyrhynchos</i>
Black-billed magpie	<i>Pica hudsonia</i>
Common raven	<i>Corvus corax</i>
Steller's jay	<i>Cyanocitta stelleri</i>
Western scrub-jay	<i>Aphelocoma californica</i>
Mammals - 40	
American badger	<i>Taxidea taxus</i>
American mink	<i>Neovison vison</i>
Beaver	<i>Castor canadensis</i>
Belding's ground squirrel	<i>Uroditellus beldingi</i>
Big-brown bat	<i>Eptesicus fuscus</i>
Bobcat	<i>Lynx rufus</i>
Bushy-tailed woodrat	<i>Neotoma cinerea</i>
California myotis	<i>Myotis californicus</i>
Canyon bat	<i>Parastrellus hesperus</i>
Porcupine	<i>Erethizon dorsatum</i>
Raccoon	<i>Procyon lotor</i>
Cougar	<i>Puma concolor</i>
Coyote	<i>Canis latrans</i>

Common Name	Scientific Name
Deer mouse	<i>Peromyscus maniculatus</i>
Elk	<i>Cervus elaphus</i>
Fringed myotis	<i>Myotis thysanodes</i>
Hoary bat ¹	<i>Lasiurus cinereus</i>
House mouse	<i>Mus musculus</i>
Little brown myotis	<i>Myotis lucifugus</i>
Long-eared myotis	<i>Myotis evotis</i>
Long-legged myotis	<i>Myotis volans</i>
Long-tailed weasel	<i>Mustela frenata</i>
Montane vole	<i>Microtus montanus</i>
Mountain cottontail	<i>Sylvilagus nuttallii</i>
Mule deer	<i>Odocoileus hemionus</i>
Northern pocket gopher	<i>Thomomys talpoides</i>
Ord's kangaroo rat	<i>Dipodomys ordii</i>
Pallid bat ¹	<i>Antrozous pallidus pacificus</i>
Pronghorn	<i>Antilocarpa americana</i>
Red fox	<i>Vulpes vulpes</i>
River otter	<i>Lutra canadensis</i>
Silver-haired bat ¹	<i>Lasionycteris noctivagans</i>
Striped skunk	<i>Mephitis mephitis</i>
Townsend's big-eared bat ¹	<i>Corynorhinus townsendii</i>
Virginia opossum	<i>Didelphis virginiana</i>
Washington ground squirrel ²	<i>Urocitellus washingtoni</i>
Western small-footed myotis	<i>Myotis ciliolabrum</i>
White-tailed deer	<i>Odocoileus virginianus</i>
White-tailed jackrabbit	<i>Lepus townsendii</i>
Yellow-bellied marmot	<i>Marmota flaviventris</i>
Amphibians and Reptiles - 14	
Common garter snake	<i>Thamnophis sirtalis</i>
Gopher snake	<i>Pituophis catenifer</i>
Great Basin spadefoot	<i>Elgaria coerulea</i>
Long-toed salamander	<i>Ambystoma macrodactylum</i>
Northern alligator lizard	<i>Spea intermontana</i>
Northern sagebrush lizard ¹	<i>Sceloporus graciosus graciosus</i>
Night snake	<i>Hypsiglena torquata</i>
Pacific chorus frog	<i>Pseudacris regilla</i>
Side-blotched lizard	<i>Uta stansburiana</i>

Common Name	Scientific Name
Racer	<i>Coluber constrictor</i>
Western fence lizard	<i>Sceloporus occidentalis</i>
Western rattlesnake	<i>Crotalus viridis</i>
Western skink	<i>Eumeces skiltonianus</i>
Western toad	<i>Bufo boreas</i>
1. Denotes ODFW Sensitive Species in the Columbia Plateau Ecoregion (ODFW 2016). ¹ 2. Denotes ODFW Endangered Species (ODFW 2018). ²	

¹ ODFW. 2016. Oregon Department of Fish and Wildlife Sensitive Species List. Available online at: https://www.dfw.state.or.us/wildlife/diversity/species/docs/2016_Sensitive_Species_List.pdf

² ODFW. 2018. Threatened, Endangered, and Candidate Fish and Wildlife Species in Oregon. Available online at: https://www.dfw.state.or.us/wildlife/diversity/species/docs/Threatened_and_Endangered_Species.pdf