

# **Preliminary Application for Site Certificate for the Muddy Creek Energy Park**

---

## **Exhibit H. Threatened and Endangered Species**

**Submitted to the  
Oregon Energy Facility Siting Council**

**Prepared for  
Muddy Creek Energy Park LLC**

**Prepared by**



**1750 S Harbor Way, Suite 400 | Portland, OR 97201**

**May 2026**

## Table of Contents

1.0	Introduction.....	1
2.0	Analysis Area.....	1
3.0	Agency Coordination.....	1
4.0	Identification of Species – OAR 345-022-0070(3)(a).....	2
4.1	Desktop Review.....	2
4.2	Field Surveys.....	5
4.2.1	Wildlife.....	5
4.2.2	Plants.....	5
5.0	Occurrence and Potential Adverse Impacts – OAR 345-022-0070(3)(b).....	5
5.1	Wildlife.....	5
5.1.1	Northern Spotted Owl.....	5
5.2	Plants.....	6
5.2.1	Golden Paintbrush.....	6
5.2.2	Tall Bugbane.....	6
5.2.3	Willamette Valley Larkspur.....	7
5.2.4	Willamette Daisy.....	7
5.2.5	Wayside Aster.....	7
5.2.6	Shaggy Horkelia.....	8
5.2.7	Thin-leaved Pea.....	8
5.2.8	Bradshaw’s Desert Parsley.....	9
5.2.9	Kincaid’s Lupine.....	9
5.2.10	Howell’s Montia.....	10
5.2.11	Willamette Navarretia.....	10
5.2.12	White-topped Aster.....	10
5.2.13	Meadow Checkermallow.....	11
5.2.14	Nelson’s Checkermallow.....	11
5.2.15	Hitchcock’s Blue-eyed Grass.....	11
6.0	Avoidance and Mitigation – OAR 345-022-0070(3)(c).....	12
6.1	Wildlife.....	12
6.2	Plants.....	12
7.0	Plant Species.....	13

7.1	Compliance with Protection and Conservation Programs – OAR 345-022-0070(3)(d).....	13
7.2	Potential Impacts to Other Plants – OAR 345-022-0070(3)(e).....	13
8.0	Impacts to Animal Species and Critical Habitat – OAR 345-022-0070(3)(f).....	13
9.0	Monitoring – OAR 345-022-0070(3)(g).....	14
10.0	Conclusion .....	14
11.0	References .....	14
12.0	Approval Standards and Submittal Requirements .....	18

**List of Tables**

Table H-1. State Threatened & Endangered, and Candidate Species with the Potential to Occur within the Analysis Area.....	4
Table H-2. Approval Standards and Submittal Requirements Matrix.....	18

**List of Figures**

Figure H-1. Analysis Area for Threatened and Endangered Species	
---	--

## Acronyms and Abbreviations

Acronym/Abbreviation	Definition
Applicant	Muddy Creek Energy Park, LLC
ASC	Application for Site Certificate
Council	Oregon Energy Facility Siting Council
ESA	Endangered Species Act
Facility	Muddy Creek Energy Park
NSO	northern spotted owl
OAR	Oregon Administrative Rules
ODA	Oregon Department of Agriculture
ODOE	Oregon Department of Energy
ODFW	Oregon Department of Fish and Wildlife
OESA	Oregon Endangered Species Act
ORBIC	Oregon Biodiversity Information Center
ORS	Oregon Revised Statutes
Tetra Tech	Tetra Tech, Inc.
USFWS	U.S. Fish and Wildlife Service

## **1.0 Introduction**

Muddy Creek Energy Park, LLC (Applicant) seeks to develop the Muddy Creek Energy Park (Facility), a solar energy generation and battery storage project and related or supporting facilities in Linn County, Oregon. This Application for Site Certificate (ASC) demonstrates that the proposed Facility will be designed, constructed, and operated consistent with the relevant Oregon Energy Facility Siting Council (Council) siting criteria and standards. In addition to meeting the minimum required Council criteria, the Applicant proposes to design, construct, and operate the Facility using agrivoltaics. Agrivoltaics co-locates the Facility with active farm operations to retain agricultural production and minimize agricultural impacts within the Facility Site Boundary.

The information contained herein supports demonstration of compliance with the Threatened and Endangered Species approval standard for Oregon Administrative Rules (OAR) 345-022-0070.

## **2.0 Analysis Area**

The analysis area for threatened and endangered species is the proposed Site Boundary plus a 5-mile buffer, as defined by OAR 345-001-0010(35)(a) and re-affirmed in the Project Order. The Facility is defined in detail in the Background Information Exhibit. The threatened and endangered species analysis area is shown on Figure H-1.

## **3.0 Agency Coordination**

The Applicant met with the Oregon Department of Energy (ODOE) on March 21, 2023, to introduce the Facility, describe the anticipated schedule, and describe the biological surveys proposed for 2023. Coordination with personnel from the Oregon Department of Fish and Wildlife (ODFW) occurred on April 12, 2023, to discuss potential threatened and endangered fish and wildlife species within the Facility, as well as upcoming biological survey methodology. The Applicant and Tetra Tech, Inc. (Tetra Tech) met again with personnel from ODFW, as well as the U.S. Fish and Wildlife Service (USFWS), on April 27, 2023. During these meetings, the Applicant introduced the Facility, described the anticipated schedule, described the threatened and endangered plant and animal species identified as potentially occurring in the Facility vicinity, and described the biological surveys proposed for 2023. In addition, the Applicant provided the 2023 Habitat Categorization and 2023 Botanical Survey Report to personnel from the Oregon Department of Agriculture (ODA) on December 12, 2023, with a request for comments. ODA responded on January 2, 2024, after reviewing the report that impacts to listed plants are not expected.

Most recently, the Applicant and Tetra Tech had a hybrid in-person and virtual meeting with personnel from ODFW on February 11, 2026, and ODFW and USFWS on March 17, 2026, to share Facility updates since the previous meetings. Discussion topics included the results of completed

surveys, and habitat and streaked horn lark (*Eremophila alpestris strigata*) mitigation strategy. Agency coordination is further described in Exhibit G.

## **4.0 Identification of Species – OAR 345-022-0070(3)(a)**

*(3) To assist the Council in determining whether the standard outlined in (1) through (2) has been met, the Applicant must submit 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 must include:*

*(a) Based on appropriate literature and field study, identification of all threatened or endangered species listed under ORS 496.172(2) and ORS 564.105(2) that may be affected by the proposed facility;*

The Applicant identified threatened and endangered plant and animal species that might be affected by the Facility through initial desktop review and input provided by the ODFW and USFWS. Information and data gathered during the desktop review and agency coordination were then used to inform field surveys conducted from 2023 through 2025. The Applicant conducted the desktop review within the analysis area and performed field surveys within the Site Boundary for plants, and within the Site Boundary and additional portions of the analysis area for wildlife, as described in Exhibit G. The Applicant conservatively included candidate species in this Exhibit in the event that they become listed during construction or operation of the Facility.

### **4.1 Desktop Review**

Prior to conducting field surveys in 2023, the Applicant conducted a desktop review to identify special status plant and wildlife species with the potential to occur in the analysis area, including federal and state endangered, threatened, proposed, and candidate species; species of concern; birds of conservation concern; sensitive and sensitive-critical species; and Oregon Conservation Strategy species (See Exhibit G, Attachment G-1; OCS 2016, ODFW 2021a, ODFW 2021b, ORBIC 2019, ORBIC 2023a, ORBIC 2025, Sullivan et al. 2009, USFWS 2020, USFWS 2021, USFWS 2022, USFWS 2023a, USFWS 2023b, Wildlife Explorer 2023). The Applicant reviewed habitat and range information for special status plant and wildlife species known or predicted to occur within 5 miles of the Facility (e.g., species known to occur in Linn County or in the Willamette Valley Ecoregion) to develop the list of species that had the potential to occur within the analysis area. Species were eliminated from consideration if their habitat was absent from the analysis area, or their range did not overlap with the proposed analysis area; but were included if they have the potential for vagrancy at the Facility.

The Applicant identified special status plant species with the potential to occur within the analysis area based on known occurrences recorded by herbaria and other sources (CPNWH 2023; ODA 2023a, ODA 2023b, ORBIC 2019, ORBIC 2023a, ORBIC 2023b, OregonFlora 2023a, OregonFlora 2023b; USFWS 2023a, USFWS 2023b). Special status plant species considered included all vascular plants listed as endangered or threatened by USFWS under the federal Endangered Species Act, as

well as candidates and species proposed for listing, and plants listed as endangered, threatened, or candidates for listing by ODA under the Oregon Endangered Species Act (OESA). The sources listed in this section were reviewed for both wildlife and plants in 2026 to ensure that no new species had become listed since the time of the surveys and the initial desktop review in 2023.

In addition to reviewing publicly available sources, the Applicant submitted a request to the Oregon Biodiversity Information Center (ORBIC) to obtain site-specific records of special status species occurrences and sensitive habitats within 5 miles of the Facility (ORBIC 2023a). The Applicant also reviewed aerial photographs, National Wetlands Inventory data, the National Hydrography Dataset, and range and habitat information for special status wildlife and plant species to determine their potential to occur with the analysis area (ODA 2023a; ORBIC 2019; Oregon Flora 2023a, 2023b; StreamNet 2023; USFWS 2022; USFWS 2023c; USGS 2023; Wildlife Explorer 2023).

Fifteen state-listed and candidate plant species and one state-listed wildlife species were identified with the potential to occur within the analysis area, based on their known or suspected ranges, presence of suitable habitats in the area, and known/historical occurrences in the ORBIC database (Table H-1). An additional species of interest, the streaked horned lark, is listed as state-sensitive-critical and federally threatened and was identified by the USFWS for special consideration during agency coordination (Section 3.0). Because it is not listed as a state endangered, threatened, or candidate species, it is discussed further in Exhibit G.

**Table H-1. State Threatened & Endangered, and Candidate Species with the Potential to Occur within the Analysis Area**

Scientific Name	Common Name	Federal Status <sup>1</sup>	State Status <sup>2</sup>	Occurrence within Analysis Area	Potential Habitat within the Analysis Area
<b>Wildlife</b>					
<i>Strix occidentalis caurina</i>	Northern spotted owl	FT	T	Yes	No
<b>Plants</b>					
<i>Cimicifuga elata</i> var. <i>elata</i>	Tall bugbane	-	C	Yes	Yes
<i>Delphinium oregonum</i>	Willamette Valley larkspur	-	C	No	Yes
<i>Erigeron decumbens</i>	Willamette daisy Willamette Valley daisy	FE	E	Yes	Yes
<i>Eucephalus vialis</i>	Wayside aster	-	T	Yes	Yes
<i>Horkelia congesta</i> ssp. <i>congesta</i>	Shaggy horkelia	-	C	No	Yes
<i>Lathyrus holochlorus</i>	Thin-leaved pea	-	E	No	Yes
<i>Lomatium bradshawii</i>	Bradshaw's desert parsley	DL	E	No	Yes
<i>Lupinus oregonus</i>	Kincaid's lupine	FT	T	Yes	Yes
<i>Montia howellii</i>	Howell's montia	-	C	No	Yes
<i>Navarretia willamettensis</i>	Willamette navarretia	-	E	No	Yes
<i>Sericocarpus rigidus</i>	White-topped aster	-	T	No	Yes
<i>Sidalcea campestris</i>	Meadow checkermallow	-	C	No	Yes
<i>Sidalcea nelsoniana</i>	Nelson's checkermallow	FT	T	No	Yes
<i>Sisyrinchium hitchcockii</i>	Hitchcock's blue-eyed grass	-	E	Yes	Yes
1. Federal Status: DL = federally delisted; FE = federally endangered; FT = federally threatened					
2. State Status: C = state candidate; E = state endangered; T = state threatened					

## **4.2 Field Surveys**

As described below, the Applicant conducted biological field surveys in 2023 and 2024 to evaluate the potential presence of state-listed species. Additional details are provided in Exhibit G as well as the biological survey reports prepared for the Facility (Exhibit G, Attachment G-1).

### **4.2.1 Wildlife**

The Applicant conducted surveys for special status species as described in Exhibit G. No field studies were conducted for fish because construction and operation of the Facility will involve no temporary or permanent impacts to intermittent or perennial fish-bearing streams. Moreover, no state-listed fish have the potential to occur within the analysis area (ORBIC 2023a; StreamNet 2023).

### **4.2.2 Plants**

The Applicant conducted botanical field surveys within the Facility Site Boundary on May 12, May 19, June 28, August 10, 2023, and May 22, 2024. Botanical survey methods are described in detail in Exhibit G, Attachment G-1. No threatened, endangered, or candidate plants were observed at the Facility during botanical surveys.

## **5.0 Occurrence and Potential Adverse Impacts – OAR 345-022-0070(3)(b)**

*(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;*

### **5.1 Wildlife**

One state listed wildlife species has been historically observed within the analysis area: the northern spotted owl (NSO, *Strix occidentalis caurina*). Suitable habitat for this species was not found to occur within the Facility Site Boundary during surveys, and construction and operation of the Facility are not expected to result in adverse effects to this species.

#### **5.1.1 Northern Spotted Owl**

The NSO was identified as having the potential to occur in the analysis area based on four ORBIC records (ORBIC 2023a). The most recent record is from 2001; all records are located roughly 3.5 miles southeast of the Facility Site Boundary. Historical aerial imagery in Google Earth indicates that most of the area where those records were made has since been logged (Google 2026). NSO habitat is characterized by mature and old-growth forests with complex structure and multiple canopy layers (Bird Alliance of Oregon 2026). Within the Facility Site Boundary there are 4 acres of westside lowland conifer-hardwood upland forest (see the Habitat Categorization Survey Report in

Attachment G-1). Because this habitat is unsuitable to support NSO, and the recent logging mentioned above, the species is not likely to occur within the Facility vicinity, and will not be affected by construction or operation of the Facility.

## **5.2 Plants**

Based on desktop analysis, 15 state listed and candidate vascular plant species have the potential to occur within the analysis area. None of these species were found to occur within the Site Boundary during surveys, and the construction and operation of the Facility are not expected to result in adverse effects to these species, as described below.

### **5.2.1 Golden Paintbrush**

Golden paintbrush is a perennial in the broomrape (Orobanchaceae) family with many stems growing from a short-branching base and golden yellow bracts. Habitat for this species includes flat grasslands, mounded prairies, and steep, grassy bluffs (ODA 2023c). Surveys for golden paintbrush should occur between late-April to early-June when this species is typically in flower. Golden paintbrush historically ranged from the Willamette Valley of Oregon north to British Columbia; however, the species is now believed to be extirpated in Oregon (ODA 2023c).

Golden paintbrush is listed as a state candidate species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Although suitable grassland and prairie habitat for this species is present in the analysis area, it is limited within the Site Boundary. This species was not observed during Facility surveys and is believed to be extirpated in Oregon; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.2 Tall Bugbane**

Tall bugbane is a 3- to 6.5-foot-tall perennial from woody rootstalks in the buttercup (Ranunculaceae) family that typically flowers between late-May to August (OregonFlora 2019a). This species occurs in or at the margins of moist conifer forests or mixed conifer-deciduous forests (OregonFlora 2019a). Threats to this species include habitat loss and degradation from timber harvesting, as well as competition from invasive weedy species and residential development (NatureServe Explorer 2023a).

Tall bugbane is listed as a state candidate species under the OESA. The desktop review identified four element occurrence records for tall bugbane within the analysis area; the closest of which is located approximately 3 miles northeast of the Site Boundary (ORBIC 2023a). Although suitable coniferous and mixed conifer-deciduous forest habitat is present within the analysis area, this habitat is not present within the Site Boundary. In addition, this species was not observed during Facility surveys; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.3 Willamette Valley Larkspur**

Willamette Valley larkspur is a slender perennial in the buttercup (Ranunculaceae) family that typically blooms between May and July (OregonFlora 2019b). Habitat for this species includes wet prairies with shrubby or Oregon ash (*Fraxinus latifolia*) overstory, as well as dry oak woodlands, open hillsides, well-drained native prairies, and along roadsides and fencerows. Willamette Valley larkspur is endemic to the Willamette Valley and high elevation peaks in the northern Coast Range (OregonFlora 2019b). The primary threats to this species include habitat isolation, fragmentation, and invasion by non-native plant species.

Willamette Valley larkspur is listed as a state candidate species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Although suitable habitat is present in the analysis area, it is limited within the Site Boundary. As this species was not observed during Facility surveys and is not known to occur within the analysis area, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.4 Willamette Daisy**

Willamette daisy is a tap-rooted perennial in the aster (Asteraceae) family with blue-purple or pale pink ray flowers and stems that are decumbent and often purplish at the base. This species is found in both seasonally flooded bottomland prairies and well-drained upland prairies and typically flowers from June through early July (ODA 2023d). While habitat loss due to urban and agricultural development is the primary threat to Willamette daisy, encroachment by trees and shrubs, competition from invasive weeds, and possible inbreeding depression due to small population sizes also pose threats to this species (ODA 2023d).

Willamette daisy is listed as a state endangered species under the OESA and federal endangered species under the federal Endangered Species Act (ESA). One element occurrence record for Willamette daisy, located approximately 2.4 miles north of the Site Boundary, was identified within the analysis area during the desktop review (ORBIC 2023a). However, this occurrence was last observed in 1993 and was considered to have a poor estimated viability. Suitable seasonally flooded or well-drained prairie habitat is present within the analysis area but is limited within the Site Boundary. As this species was not observed during Facility surveys and is not known to occur within the Site Boundary, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.5 Wayside Aster**

Wayside aster is a 24- to 45-inch tall, erect perennial in the aster (Asteraceae) family. This species occupies a range of habitat types, including dense coniferous forests, open deciduous woodlands, grassy balds, and exposed serpentine slopes, and is often found in relatively open areas in the understory of mixed coniferous/hardwood forests, along roadsides, and on open slopes and prairie balds (ODA 2023e). Surveys for wayside aster can be completed when the species is in flower or

fruit, which typically occurs between July through September. Although the range of this species is from Linn County, Oregon, south to northern California, most occurrences are found in Oregon (ODA 2023e).

Wayside aster is listed as a state threatened species under the OESA. The desktop review identified five element occurrence records for wayside aster within the analysis area; the closest of which is located approximately 4.9 miles northeast of the Site Boundary (ORBIC 2023a). Although suitable habitat is present within the analysis area, it is not present within the Site Boundary. In addition, wayside aster was not observed during Facility surveys and is not known to occur within the Site Boundary; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.6 *Shaggy Horkelia***

Shaggy horkelia is a taprooted perennial in the rose (Rosaceae) family that is endemic to the Willamette Valley, Umpqua Valley, and Klamath Mountains ecoregion in Oregon (OregonFlora 2019c). Habitat for this species includes meadows and open woods at low elevations. Surveys for shaggy horkelia should be completed during this species flowering period, which is typically between April to July (OregonFlora 2019c).

Shaggy horkelia is listed as a state candidate species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Although suitable meadow and open wood habitat is present in the analysis area, it is limited within the Site Boundary. As this species was not observed during Facility surveys and is not known to occur within the Site Boundary, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.7 *Thin-leaved Pea***

Thin-leaved pea is a climbing perennial with white to cream flowers in the pea (Fabaceae) family that is found in low elevation roadsides, fencerows, creek banks, forest edges, oak savannas, shrublands, and grasslands (OregonFlora 2019d, OregonFlora 2023b). In Oregon, this species, which was added to the state list of endangered and threatened species on June 8, 2023 (OAR 603-073-0070), is found in the Willamette and Umpqua valleys. Surveys for thin-leaved pea should occur when this species is in flower; typically, between April to June but sometimes occurring as early as March and extending as late as July (OregonFlora 2019d).

Thin-leaved pea is listed as a state endangered species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable habitat is present within the analysis area but is limited within the Site Boundary. As this species was not observed during Facility surveys and is not known to occur within the Site Boundary, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.8 Bradshaw's Desert Parsley**

Bradshaw's desert parsley is a low-growing perennial with small, light-yellow flowers in the parsley (Apiaceae) family. This species occurs in wet prairie habitats in clay soils or substrates having a dense clay layer below the surface, and most of the known populations are found in the southern Willamette Valley in seasonally saturated or flooded prairies near creeks and small rivers (ODA 2023f). Surveys for Bradshaw's desert parsley should be conducted when this species is in flower, typically between mid-April through May. Threats to this species include habitat loss due to agricultural, commercial, and residential development, as well successional encroachment of woody plants, competition from weedy invasive species, herbivory, and grazing (ODA 2023f). In addition, many populations of this species occur near roadways and fields where pesticides are sprayed; this could potentially kill pollinators and inhibit reproduction in Bradshaw's desert parsley populations (ODA 2023f).

Bradshaw's desert parsley is listed as a state endangered species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable seasonally saturated or flooded prairie habitat near creeks and small rivers is present within the analysis area but is limited within the Site Boundary. As Bradshaw's desert parsley was not observed during Facility surveys and is not known to occur within the Site Boundary, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.9 Kincaid's Lupine**

Kincaid's lupine is a 12- to 40-inch-tall perennial in the pea (Fabaceae) family that is found in upland prairie remnants, oak savannas, and ecotones between grassland and forest (ODA 2023g; OregonFlora 2019e). This species occurs from Douglas County, Oregon, to Lewis County, Washington, with most populations located in the Willamette Valley (ODA 2023g). Threats to Kincaid's lupine include habitat loss due to urbanization, agriculture, forestry practices, and roadside maintenance, as well successional encroachment of woody plants, and competition from weedy invasive species. This species, which typically flowers from mid-April through June, is the host plant for the federally threatened Fender's blue butterfly (*Icaricia icarioides fenderi*).

Kincaid's lupine is listed as a state threatened species under the OESA and federal threatened species under the ESA. The desktop review identified three element occurrence records for Kincaid's lupine within the analysis area; the closest of which is located approximately 4.3 miles northeast of the Site Boundary (ORBIC 2023a). Suitable habitat is present within the analysis area but is limited within the Site Boundary. In addition, Kincaid's lupine was not observed during Facility surveys and is not known to occur within the Site Boundary; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.10 *Howell's Montia***

Howell's montia is a small annual in the miner's lettuce (Montiaceae) family that flowers between March and May (Miller and Chambers 2012). This species occurs west of the Cascade crest in southern British Columbia to northern California and is found in vernal wet sites, often in compacted soil (Burke Museum Herbarium 2023, Miller and Chambers 2012). Most of the approximately 150 known occurrences of Howell's montia are in Oregon and California (NatureServe Explorer 2023b). Threats to this species include agriculture and grazing (NatureServe Explorer 2023b).

Howell's montia is listed as a state candidate species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable habitat is present within the analysis area but is limited in the Site Boundary. As Howell's montia was not observed during Facility surveys and is not known to occur within the Site Boundary, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.11 *Willamette Navarretia***

Willamette navarretia is a small (1- to-6-inch-tall) annual in the phlox (Polemoniaceae) family with pink to lavender flowers (Hitchcock and Cronquist 2018). This species is endemic to the Willamette Valley in Benton, Lane, and Linn counties, Oregon, and was designated as a state endangered species on June 8, 2023 (OAR 603-073-0070; NatureServe Explorer 2023c). Willamette navarretia occurs in seasonally wet meadows or prairies and vernal pools that flowers in June and July (LBJWC 2021; NatureServe Explorer 2023c). Threats to this species include competition with non-native plants and encroachment of woody plants.

Willamette navarretia is listed as a state endangered species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable seasonally wet meadow and vernal pool habitat is present within the analysis area but is limited within the Site Boundary. In addition, Willamette navarretia was not observed during Facility surveys and is not known to occur within the Site Boundary; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### **5.2.12 *White-topped Aster***

White-topped aster is a perennial in the aster (Asteraceae) family, with terminal clusters of flowering heads at the end of generally unbranched stems (ODA 2023h). Habitat for this species includes open, grassy, seasonally moist prairie and savannah habitats (ODA 2023h). Surveys for white-topped aster should be conducted when this species is flowering; typically, between the end of July through September. Threats to this species include habitat loss due to urban and agricultural development and habitat degradation from invasive species and anthropogenic alterations to hydrologic and disturbance regimes (ODA 2023h).

White-topped aster is listed as a state threatened species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable open, grassy,

seasonally moist prairie and savannah habitat is present within the analysis area but is limited within the Site Boundary. In addition, white-topped aster was not observed during Facility surveys and is not known to occur within the Site Boundary; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### ***5.2.13 Meadow Checkermallow***

Meadow checkermallow is a 20- to 80-inch-tall perennial with white to pale-pink or occasionally pinkish-lavender flowers in the mallow (Malvaceae) family (Burke Museum Herbarium 2023; Hitchcock and Cronquist 2018). This species typically flowers between May to July and is found in open shrublands, meadows, hedgerows, prairies, dry fields and roadsides (Burke Museum Herbarium 2023; FNA 2023). Threats to this species include roadside spraying programs (OregonFlora 2023b).

Meadow checkermallow is listed as a state candidate species under the OESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable habitat is present within the analysis area but is limited within the Site Boundary. In addition, meadow checkermallow was not observed during Facility surveys and is not known to occur within the Site Boundary; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### ***5.2.14 Nelson's Checkermallow***

Nelson's checkermallow is a 15- to 40-inch-tall with pinkish-lavender flowers in the mallow (Malvaceae) family. In the Willamette Valley, this species is typically found in open prairie remnants along the margins of streams, sloughs, ditches, roadsides, fence rows, and drainage swales and in fallow fields, although it occasionally occurs in the understory or at the edges of ash woodlands or among woody shrubs (ODA 2023i). Surveys for Nelson's checkermallow should occur when it is flowering, typically late May through mid-July, but depending on the year, can continue into early September. Threats to this species include habitat loss due to agricultural and urban development, encroachment of woody plants, competition weedy non-native species, and predation by native weevils (ODA 2023i).

Nelson's checkermallow is listed as a state threatened species under the OESA and federal threatened species under the ESA. The desktop review did not identify any element occurrences of this species within the analysis area. Suitable habitat is present within the analysis area and Site Boundary. However, as this species was not observed during Facility surveys and is not known to occur within the Site Boundary, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

### ***5.2.15 Hitchcock's Blue-eyed Grass***

Hitchcock's blue-eyed grass is a rhizomatous perennial with purple to dark reddish purple or rarely bluish violet flowers in the iris (Iridaceae) family. This species is endemic to the Willamette and

Umpqua valleys in Oregon and was designated as a state endangered species on June 8, 2023 (OAR 603-073-0070; OregonFlora 2019f). Hitchcock's blue-eyed grass typically flowers between May and early June and occurs in prairies, oak savannas, grassy areas, and openings in woods; mostly where soil is dry late in season (OregonFlora 2019f; OregonFlora 2023b).

Hitchcock's blue-eyed grass is listed as a state endangered species under the OESA. The desktop review identified one element occurrence record for Hitchcock's blue-eyed grass within the analysis area. This occurrence is located approximately 4.6 miles to the northeast of the Site Boundary and was last observed in 2012 (ORBIC 2023a). Suitable habitat is present within the analysis area but is limited in the Site Boundary. In addition, Hitchcock's blue-eyed grass was not observed during Facility surveys and is not known to occur within the Site Boundary; therefore, no potential adverse effects to this species are anticipated as a result of construction and operation of the Facility.

## **6.0 Avoidance and Mitigation – OAR 345-022-0070(3)(c)**

*(c) For each species identified under (a), a description of measures proposed by the applicant, if any, to avoid or reduce adverse impact;*

Based on the results of desktop review and field surveys, no state listed or candidate species are expected to be affected by the Facility and therefore the Applicant does not propose avoidance and mitigation measures for threatened and endangered species. The potential for impacts to state listed and candidate species was minimized by siting the Facility primarily on moderately to highly disturbed habitat in a relatively developed landscape and away from known existing threatened and endangered species locations.

### **6.1 Wildlife**

No state threatened, endangered, or candidate wildlife species were found or are expected to occur within the Site Boundary. Therefore, no mitigation measures are planned or required for the Facility.

### **6.2 Plants**

No state-listed species were observed within the Site Boundary. Additionally, due to the developed nature (cultivated croplands) and abundance of non-native invasive species and noxious weeds, very little suitable habitat for listed plant species was observed within the Site Boundary. Therefore, because no state listed species are expected to be affected by the Facility, no mitigation measures are planned or required for the Facility.

## 7.0 Plant Species

### 7.1 Compliance with Protection and Conservation Programs – OAR 345-022-0070(3)(d)

*(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);*

There are no species with the potential to occur within the analysis area for which ODA has adopted a protection and conservation program. As a result, the Facility is not likely to impact any of ODA's recovery efforts, nor is the Facility likely to cause a significant reduction in the likelihood of survival or recovery of plants with a protection or conservation program under Oregon Revised Statutes (ORS) 564.105(3).

### 7.2 Potential Impacts to Other Plants – OAR 345-022-0070(3)(e)

*(e) For each plant species identified under paragraph (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 state listed or candidate plant species are known or expected to occur within the Site Boundary; therefore, the Facility is not likely to cause a significant reduction in the likelihood of survival or recovery of any state listed or candidate plant species, and no mitigation measures are proposed by the Applicant.

## 8.0 Impacts to Animal Species and Critical Habitat – OAR 345-022-0070(3)(f)

*(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; and*

No state listed fish or wildlife species are known or expected to occur within the Site Boundary; therefore, the Facility is not likely to cause a significant reduction in the likelihood of survival or recovery of any state listed or candidate animal species, and no mitigation measures are proposed by the Applicant.

## 9.0 Monitoring – OAR 345-022-0070(3)(g)

*(g) The applicant's proposed monitoring program, if any, for impacts to threatened and endangered species.*

As no impacts to threatened and endangered species are anticipated from the Facility, no monitoring program for threatened and endangered species is planned or required.

## 10.0 Conclusion

Based on the information provided above, the Council may conclude that the Facility will not cause a significant reduction in the likelihood of survival or recovery of listed threatened or endangered plant and animal species and therefore meets the Threatened and Endangered Species standard under OAR 345-022-0070.

## 11.0 References

- Bird Alliance of Oregon. 2026. Northern Spotted Owl. Available online at:  
<https://birdallianceoregon.org/our-work/protect/habitat-and-wildlife/imperiled-species/northern-spotted-owl-4/>
- Burke Museum Herbarium. 2023. Burke Herbarium and Image Collection. University of Washington. Seattle, WA. Available online at:  
<https://burkeherbarium.org/imagecollection/>.
- CPNWH (Consortium of Pacific Northwest Herbaria). 2023. Specimen Data and Digital Resources from Herbaria throughout Pacific Northwest. Available online at:  
<https://www.pnwherbaria.org/data/search.php>
- FNA (Flora of North America). 2023. eFloras – Flora of North America. Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA. Available online at:  
[http://www.efloras.org/flora\\_page.aspx?flora\\_id=1](http://www.efloras.org/flora_page.aspx?flora_id=1).
- Google. 2026. Google Earth. Version 2026. Mountain View, CA. Accessed March 30, 2026.  
<https://www.google.com/earth>.
- Hitchcock, C. L., and A. Cronquist. 2018. Flora of the Pacific Northwest; an Illustrated Manual. Second Edition. Edited by D.E Giblin, B. S. Legler, P.F. Zika, and R.G. Olmstead. University of Washington Press. Seattle, WA.
- LBJWC (Lady Bird Johnson Wildflower Center). 2021. *Navarretia willamettensis*. Available online at:  
[https://www.wildflower.org/plants/result.php?id\\_plant=NAWI](https://www.wildflower.org/plants/result.php?id_plant=NAWI)
- Miller, J.M. and K. L. Chambers. 2012. *Montia howellii* in Jepson Flora Project (eds.) Jepson eFlora. Available online at: [https://ucjeps.berkeley.edu/eflora/eflora\\_display.php?tid=33997](https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=33997).

- NatureServe Explorer. 2023a. *Actaea elata* - Tall bugbane. Available online at:  
[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.134578/Actaea\\_elata](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.134578/Actaea_elata).
- NatureServe Explorer. 2023b. *Montia howellii* – Howell’s Miner’s-lettuce. Available online at:  
[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.153784/Montia\\_howellii](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.153784/Montia_howellii).
- NatureServe Explorer. 2023c. *Navarretia willamettensis*. Available online at:  
[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.732428/Navarretia\\_willamettensis](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.732428/Navarretia_willamettensis).
- OCS (Oregon Conservation Strategy). 2016. Oregon Conservation Strategy species. Oregon Department of Fish and Wildlife, Salem, Oregon. <http://oregonconservationstrategy.org/> (Accessed May 2023).
- ODA (Oregon Department of Agriculture). 2023a. Oregon’s threatened, endangered, and candidate plants. Available online at:  
<https://www.oregon.gov/oda/programs/PlantConservation/Pages/AboutPlants.aspx>
- ODA. 2023b. Oregon Listed Plants by County. Available online at:  
<https://www.oregon.gov/ODA/programs/PlantConservation/Pages/ListedPlants.aspx>. ODFW (Oregon Department of Fish and Wildlife). 2021a. ODFW Sensitive Species List. Available online at:  
[https://www.dfw.state.or.us/wildlife/diversity/species/docs/Sensitive\\_Species\\_List.pdf](https://www.dfw.state.or.us/wildlife/diversity/species/docs/Sensitive_Species_List.pdf) (Accessed May 20223).
- ODA. 2023c. Golden Paintbrush (*Castilleja levisecta*). Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/CastillejaLevisectaProfile.pdf>
- ODA. 2023d. Willamette Daisy (*Erigeron decumbens*) Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/ErigeronDecumbensProfile.pdf>.
- ODA. 2023e. Wayside Aster (*Eucephalis vialis*) Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/EucephalusVialisProfile.pdf>
- ODA. 2023f. Bradshaw’s Desert Parsley (*Lomatium bradshawii*) Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/LomatiumBradshawiiProfile.pdf>
- ODA. 2023g. Kincaid’s Lupine (*Lupinus oregonus*) Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/LupinusOregonusProfile.pdf>
- ODA. 2023h. White-topped Aster (*Sericocarpus rigidus*) Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/SericocarpusRigidusProfile.pdf>

- ODA. 2023i. Nelson's Checkermallow (*Sidalcea nelsoniana*) Fact Sheet. Available online at:  
<https://www.oregon.gov/oda/shared/Documents/Publications/PlantConservation/SidalceaNelsonianaProfile.pdf>
- ODFW (Oregon Department of Fish and Wildlife). 2021a. ODFW Sensitive Species List.  
[https://www.dfw.state.or.us/wildlife/diversity/species/docs/Sensitive\\_Species\\_List.pdf](https://www.dfw.state.or.us/wildlife/diversity/species/docs/Sensitive_Species_List.pdf)  
Accessed May 2023.
- ODFW. 2021b. Threatened, endangered and candidate fish and wildlife species.  
[https://www.dfw.state.or.us/wildlife/diversity/species/threatened\\_endangered\\_candidate\\_list.asp](https://www.dfw.state.or.us/wildlife/diversity/species/threatened_endangered_candidate_list.asp) Accessed May 2023.
- ORBIC (Oregon Biodiversity Information Center). 2019. Rare, Threatened and Endangered Species of Oregon. Institute for Natural Resources, Portland State University, Portland, Oregon. 133 pp.
- ORBIC. 2023a. Element Occurrence Record Digital Data Set for rare, threatened, or endangered species for the state of Oregon. ORBIC, Institute for Natural Resources. Portland State University, Portland, Oregon. Received January 2023.
- ORBIC. 2023b. 2023 Rare, Threatened, and Endangered Vascular Plant List. Institute for Natural Resources, Portland State University. Available online at:  
<https://inr.oregonstate.edu/orbic/rare-species/rare-species-oregon-publications>.
- ORBIC (Oregon Biodiversity Information Center). 2025. Rare, Threatened and Endangered Zoology Species of Oregon (2025). Institute for Natural Resources, Portland State University, Portland, Oregon. 133 pp.
- OregonFlora. 2019a. *Cimicifuga elata* – Tall Bugbane. Rare Plant Fact Sheet. Available online at:  
<https://oregonflora.org/pages/content/cimela.pdf>.
- OregonFlora. 2019b. *Delphinium oregonum* – Willamette Valley Larkspur. Rare Plant Fact Sheet. Available online at: <https://oregonflora.org/pages/content/delore.pdf>
- OregonFlora. 2019c. *Horkelia congesta* ssp. *congesta* – Shaggy Horkelia. Rare Plant Fact Sheet. Available online at: <https://oregonflora.org/pages/content/horconcon.pdf>.
- OregonFlora. 2019d. *Lathyrus holochlorus*– Thin Leaved Peavine. Rare Plant Fact Sheet. Available online at: <https://oregonflora.org/pages/content/lathol.pdf>.
- OregonFlora. 2019e. *Lupinus oregonus* – Kincaid's Lupine. Rare Plant Fact Sheet. Available online at:  
<https://oregonflora.org/pages/content/lupore.pdf>
- OregonFlora. 2019f. *Sisyrinchium hitchcockii* – Hitchcock's blue eyed grass. Rare Plant Fact Sheet. Available online at: <https://oregonflora.org/pages/content/sishit.pdf>
- OregonFlora. 2023a. Online Guide to Vascular Plants of Oregon. Oregon State University, Department of Botany and Plant Pathology. Corvallis, OR. Available online at:  
<https://oregonflora.org/>.

- Oregon Flora. 2023b. Rare Plant Fact Sheets. Oregon State University. Corvallis, OR. Available online at: <https://oregonflora.org/pages/rare-plant-factsheets.php>.
- StreamNet. 2023. StreamNet Mapper. Available online at: <https://psmfc.maps.arcgis.com/apps/webappviewer/index.html?id=3be91b0a32a9488a901c3885bbfc2b0b>.
- Sullivan, B.L., C.L. Wood, M.J. Iliff, R.E. Bonney, D. Fink, and S. Kelling. 2009. eBird: A Citizen-based Bird Observation Network in the Biological Sciences. *Biological Conservation* 142: 2282-2292. (Accessed May 2023).
- USFWS (U.S. Fish and Wildlife Service). 2020. List of Birds Protected by the Migratory Bird Treaty Act. United States Department of Interior, Fish and Wildlife Service, Migratory Birds Program, Arlington, Virginia. <https://www.fws.gov/media/list-birds-protected-migratory-bird-treaty-act-2020> (Accessed May 2023, Revisited March 2026).
- USFWS. 2021. Birds of Conservation Concern 2021. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. <https://fws.gov/media/birds-conservation-concern-2021> (Accessed May 2023, Revisited March 2026).
- USFWS. 2022. Critical Habitat for Threatened & Endangered Species. Critical Habitat online map. <https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77> (Accessed May 2023, Revisited March 2026).
- USFWS. 2023a. Federally Listed, Proposed, Candidate, Delisted Species and Species of Concern Under the Jurisdiction of the Fish and Wildlife Service which May Occur in Oregon. [https://www.fws.gov/sites/default/files/documents/OregonSpeciesStateList\\_0.pdf](https://www.fws.gov/sites/default/files/documents/OregonSpeciesStateList_0.pdf) (Accessed May 2023).
- USFWS. 2023b. IPaC—Information for Planning and Consultation Resource List for the Project location in Linn County, Oregon. <https://ipac.ecosphere.fws.gov/> (Accessed May 2023).
- USFWS. 2023c. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/> (Accessed April 2023).
- USGS (US Geological Survey). 2023. National Hydrography Dataset and Watershed Boundary Dataset. <http://nhd.usgs.gov/> (Accessed April 2023).
- Wildlife Explorer. 2023. Wildlife Viewer. <http://oe.oregonexplorer.info/Wildlife/wildlifeviewer/wildlifeviewer.aspx> (Accessed May 2023).

## 12.0 Approval Standards and Submittal Requirements

**Table H-2. Approval Standards and Submittal Requirements Matrix**

Requirements	Location
OAR 345-022-0070 Threatened and Endangered Species	-
<b>Approval Standards</b>	
To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:	
(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:	-
(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or	Section 7.1
(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.	Section 7.2
(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.	Section 8.0
<b>Submittal Requirements</b>	
(3) To assist the Council in determining whether the standard outlined in (1) through (2) has been met, the Applicant must submit 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 must include:	-
(a) Based on appropriate literature and field study, identification of all threatened or endangered species listed under ORS 496.172(2) and ORS 564.105(2) that may be affected by the proposed facility;	Section 4.0
(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;	Section 5.0
(c) For each species identified under (a), a description of measures proposed by the applicant, if any, to avoid or reduce adverse impact;	Section 6.0
(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);	Section 7.1
(e) For each plant species identified under paragraph (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;	Section 7.2
(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	Section 8.0

**Preliminary Application for Site Certificate  
Exhibit H. Threatened and Endangered Species**

---







<b>Requirements</b>	<b>Location</b>
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; and	
(g) The applicant's proposed monitoring program, if any, for impacts to threatened and endangered species.	Section 9.0

# Figures

# Muddy Creek Energy Park

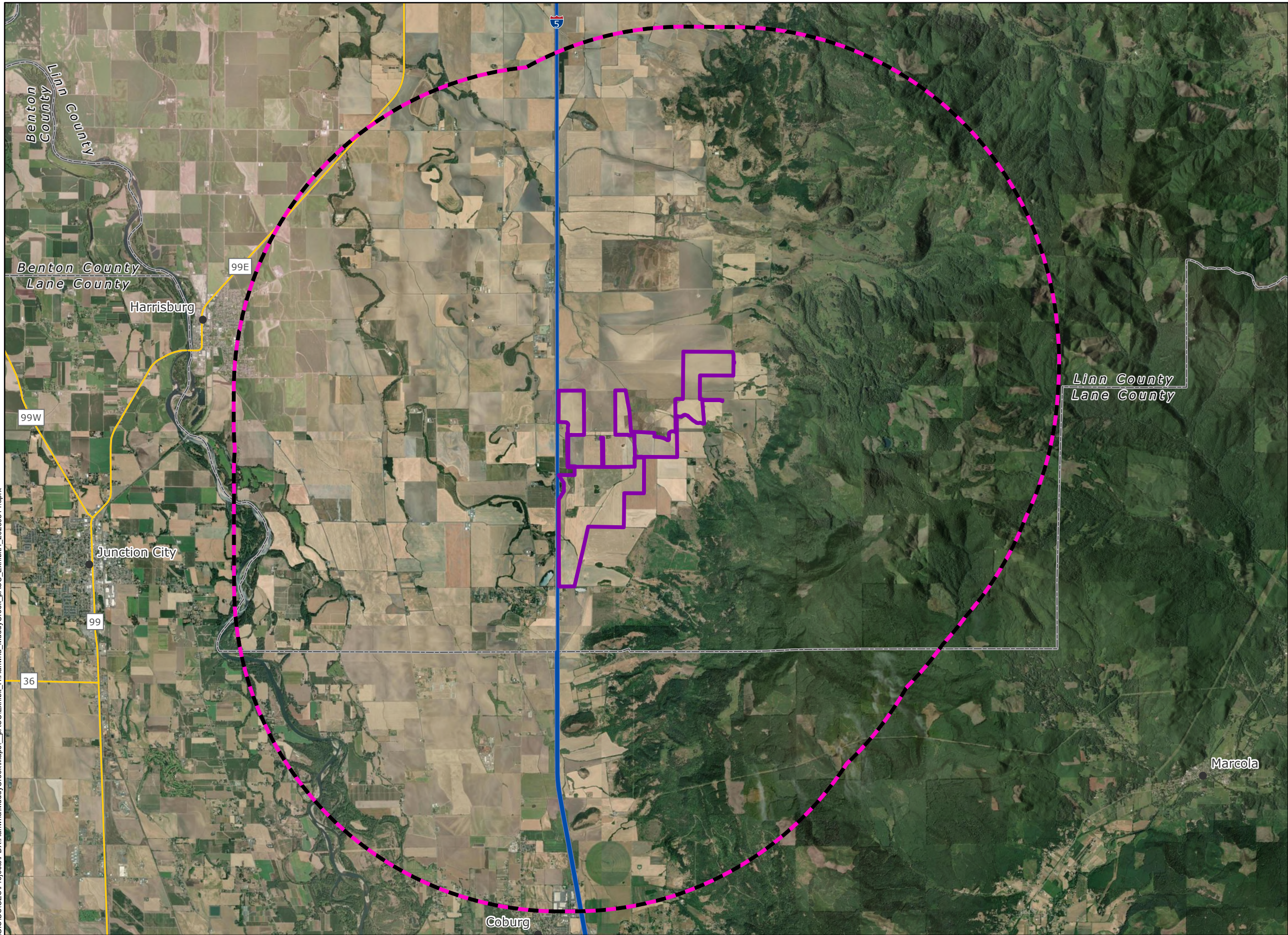
## Figure H-1 Analysis Area for Threatened and Endangered Species

LINN COUNTY, OR

-  Facility Site Boundary
-  Analysis Area (5-mile Buffer)
-  City/Town
-  County Boundary
-  Interstate Highway
-  State Highway



Reference Map



\\t.local\GIS\US\CES\Projects\PD\X\Hanwha\MuddyCreek\Maps\pASC\Exhibit\_H1-Hanwha\_MuddyCreek\_pASC\_ExhibitH\_20260514.aprx