

Agenda Item G (Action Item) for the March 24, 2023 EFSC meeting: Attachment 1

North Mist Expansion Project

Draft Amended Habitat Mitigation Plan

Prepared for:



NW Natural

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~~March 2017~~

March 2023

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Acronyms and Abbreviations

EFSC	Energy Facility Siting Council
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
NWN	Northwest Natural
Project	North Mist Expansion Project

1. Introduction

~~This Habitat Mitigation Plan (HMP or Plan) was developed to address permanent habitat impacts resulting from the North Mist Expansion Project (NMEP) associated with the Mist Underground Natural-gas Storage Facility Site Certificate, as approved by the Energy Facility Siting Council (Council) in the Final Order on Amendment 11.~~

~~The Plan was finalized by Northwest Natural (NWN), in consultation with the Oregon Department of Energy (ODOE) and Oregon Department of Fish and Wildlife (ODFW), prior to NMEP construction and was implemented from 2017-2022. During 2017-2022, some of the enhancement actions were not successful, requiring that the Plan be amended. In February 2023, the Plan was amended to address success issues with enhancement actions, as described in Attachment 1 of this plan.~~

~~This plan describes the methods Northwest Natural (NWN) proposes to use to mitigate for the unavoidable impacts of the North Mist Expansion Project (Project) on habitats based on the Oregon Department of Fish and Wildlife (ODFW) Habitat Mitigation Policy. This plan discusses mitigation for both the temporary and permanent impacts of Project construction.~~

2. Preliminary Habitat Impacts

~~Project impacts will primarily includeincluded temporary impacts to wildlife habitat. Temporary impact areas are those areas that will bewere disturbed during construction activities, but will bewere restored and revegetated following construction. Permanent impacts will occuroccurred at the North Mist Compressor Station site, where Category 4 commercial timber will bewas converted to Category 6 developed habitat. The compressor station site will bewas graveled and fenced to facilitate the new compressor station. An additional permanent impact will occuroccurred to place the mainline block valve (40 x 60 feet; 0.06 acres) in currentformer Category 6 habitat.~~

The ~~Project NMEP would create impacts impacted to~~ habitat classified as ODFW Habitat Categories 3, 4, and 6. These categories and the accompanying mitigation goals are set forth in OAR 635-415-0025, as follows:

- **Habitat Category 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.

Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation must be in-kind and in-proximity.

- **Habitat Category 4:** Important habitat for fish and wildlife species.

Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation may be in-kind or out-of-kind, and in-proximity or off-proximity.

- **Habitat Category 6:** Habitat that has low potential to become essential or important habitat for fish and wildlife.

Mitigation Goal: Minimize impacts. Mitigation may include actions that minimize direct

habitat loss and avoid impacts to off-site habitat.

NWN mapped the habitat type and category of each area potentially impacted by the ~~Project NMEP~~, as required in OAR 345-021-0010(1)(p)(B) and (C). Details and methods for habitat categorization and mapping effort can be found in Exhibit P and the 2013 General Wildlife and Habitat Categorization Survey Report in the Request for Amendment No. 11 (filed in November 2015). Based on the habitat categorization mapping, NWN calculated the expected ~~Project NMEP~~ impacts by habitat type and category, and has updated this estimate with quantified actual impacts at the conclusion of construction (Table 1).

~~habitat type and category (Table 1).~~

~~The impact areas presented in this plan are based on pre-construction surveys, and represent NWN's estimate of reasonable maximum potential impact. Impact areas may decrease in size through continued avoidance measures during construction.~~

Table 1 : Estimated and Actual Impacts by Habitat Category and Type

Habitat Category and Type	Habitat Sub-type	Estimated Impacts (Acres)		Actual Impacts (Acres)	
		Temporary	Permanent	Temporary (Matted Impacts) ¹	Permanent
Category 3		1.59	—	1.18	—
Upland forests and woodlands	Westside lowland conifer-hardwood forest	1.54	—	1.18	—
Wetlands	Emergent wetlands	0.05	—	—	—
Category 4		116.98	10.57	77.63	9.59
Open Water - Lakes, rivers, streams	Ephemeral streams	0.06	—	0.02 ²	—
	Perennial streams	0.01	—	0.01 (0.01)	—
	Seeps/springs	<0.01	—	—	—
Riparian forest and shrubland complexes	Westside riparian	0.69	—	0.16	—
Upland forests and woodlands	Westside lowland conifer-hardwood forest	80.40	10.57	55.19	9.59
Wetlands	Emergent wetlands	6.28	—	4.74 (4.72)	—
	Forested wetlands	0.04	—	0.04 (0.04)	—
Agriculture, pasture, and mixed environs	Irrigated pastures and hay meadows	12.72	—	0.69	—
	Orchards, vineyards, wheat fields, other row crops, irrigated poplar plantations	16.77	—	16.77	—
Category 6		25.99	—	11.51	—
Open Water - Lakes, rivers, streams	Intermittent	0.01	—	—	—
Urban mixed environs	Urban mixed environs	25.98	0.21	11.51	—
Total		144.57	10.79	90.31	9.59
<p>1. (Matted Impacts) represents the portion of the acreage of temporary impact that was covered with construction matting during construction impact and was not directly impacted.</p> <p>2. Bar ditches running along roads represent at least 0.01 acres this impact.</p>					

Table 1 tabulates the final acreage impacted by construction of the NMEP. Please note that impacts identified in the Final Habitat Mitigation Plan, dated March 2017, were incorrect in classifying 3.45 acres at the well pad site as Category 6 when they should have been identified as Category 4. The *estimated impacts* tabulated above have been corrected, with the incorrectly classified 3.45 acres shifted from Category 6 urban mixed environs to Category 4 westside lowland conifer-hardwood forest.

3. Mitigation Approach

3.1 Temporary Impact Areas

NWN will ~~restore~~restored and ~~revegetate~~revegetated all temporary impact areas following construction. In accordance with Fish and Wildlife Condition 7(b), NWN will first ~~remove~~removed noxious weeds and then ~~reseed~~reseeded areas with an ODFW-selected seed mix beneficial to wildlife species, as approved by the underlying landowner. Temporary impact areas ~~will be~~were restored and reseeded by the fall of the year of construction.

3.2 Permanent Impact Areas

For the ~~10.789.6~~ acres permanently impacted by the ~~North Mist Compressor Station~~NMEP and mainline block valve ~~(7.11 acres of Category 4 commercial timber and 3.67 acres of Category 6 developed area)~~, NWN ~~proposes~~purchased a conservation easement on 10.75 acres of land just north of the Port Westward Industrial Complex (Figure 1). The ~~proposed~~habitat mitigation areas are primarily wetlands, dominated by reed canary grass (*Phalaris arundinacea*). Site visits were performed on April 2 and July 8, 2015.

3.3 Habitat Mitigation Areas

The western habitat mitigation area (Area A on Figure 1; Figures 2-4) includes approximately an acre of upland, with a section of balsam poplar (*Populus balsamifera*) in the northwestern corner. The rest of the parcel is composed of reed canary grass-dominated wetland, interspersed with small Nootka rose (*Rosa nutkana*) patches. Less dominant species included red elderberry (*Sambucus racemosa*), velvet grass (*Holcus lanatus*), spreading bent grass (*Agrostis stolonifera*), and little western bittercress (*Cardamine oligosperma*). Existing restoration efforts to expand shrub areas are adjacent to the parcel in the southeastern corner.

The eastern habitat mitigation area (Area B on Figure 1; Figures 5-7) has more trees and shrubs present than Area A including Oregon ash (*Fraxinus latifolia*), Sitka willow (*Salix sitchensis*), other willow species (*Salix* spp.), balsam poplar, redosier dogwood (*Cornus sericea*), Douglas' spirea (*Spiraea douglassii*), Himalayan blackberry (*Rubus armeniacus*), and trailing blackberry (*Rubus ursinus*). The site is approximately 80 percent palustrine emergent wetland and 20 percent palustrine forested/shrub scrub wetland. There is a restoration project in the adjacent southwestern parcel.

The ~~proposed~~ habitat mitigation areas are adjacent to existing Portland General Electric mitigation areas. The enhancement actions ~~proposed to be implemented~~ on Areas A and B are not expected to have any interaction with mitigation efforts on adjacent parcels. Although NWN enhancement actions may increase the value of the site as a whole, they are not expected to have any detrimental effect on ongoing restoration efforts in the area.

3.4 Enhancement Actions

3.4.1 Approved Enhancement Actions (2017 HMP)

ODFW has advised NWN that enhancement of habitat mitigation areas ~~is was~~ needed to meet ODFW's mitigation goals. The objectives of habitat enhancement are to improve the habitat quality of the mitigation areas for wildlife species. By achieving these goals, NWN ~~will would~~ have successfully mitigated for the permanent impacts of the Project and ~~will would~~ have met the ODFW goal of no net loss of habitat in Category 4. Habitat enhancement actions have ~~been were~~ developed in coordination with ODFW, and include The following enhancement actions were implemented in 2017 and monitored through 2022; additional enhancement actions are required to address limited success in the planting of native species and removal of non-native species (see Section 3.6.3). Enhancement actions included the following:

- Snag Creation (Complete)
 - *Definition:* A dead or dying standing tree or section of a tree that has lost its needles/leaves and small limbs.
 - *Intent:* To provide decadent vertical wood elements typical of a healthy, structurally diverse forest or other habitat type.
 - *Target wildlife species:* A variety of small and medium-sized mammals (e.g., bats), and a variety of birds, particularly cavity nesters. Snags benefit a number of insectivorous
 - Surface feeding species and provide roosting, perching and nesting habitat for many wildlife species.
 - *Location:* Area B (eastern mitigation parcel).
 - *Quantity:* One created snag in Area B.
 - *Specifications:* Created snag will be a conifer tree (most likely Douglas fir; *Pseudotsuga menziesii*) at least 30 feet tall surface and at least 16 inches DBH, measured from ground surface at installation. Tree will have a minimum of 5 branches of varying lengths with stem heights above ground between 5 and 30 feet, or greater, and will have at least 75 percent of the bark attached to the tree.
 - *Installation:* Snag will be buried up to one-quarter to one-third of tree height and soil will be firmly tamped to secure in place. Snag will be placed in location expected to maximize wildlife use.
- Placement of downed wood in ditch (Complete)
 - *Definition:* A fallen tree (dead or alive) or section of live, dying or dead tree of a

minimum size. May have rootwad attached. Also known as coarse wood, coarse woody debris, coarse woody habitat.

- *Intent:* To mimic toppled trees which create structure, water retention, and organic soil inputs as well as the habitat complexity usually present in both upland and aquatic habitats.
 - *Target species:* A variety of small and medium-sized mammals (e.g., rodents, bats), amphibians (e.g., frogs, salamanders), reptiles (e.g., snakes), and ground nesting/foraging/perching birds. As the structures decay they are colonized by fungi and insects which, in turn, provide food for many wildlife species. Protected areas under downed wood are used as nesting and hiding cover. As bark loosens there is hiding cover for amphibians and bats. Small mammals burrow into the interior as the wood softens.
 - *Location:* Area A (western mitigation parcel) along ditched stream.
 - *Quantity:* Approximately 6 pieces of downed wood will be placed in the ditch.
 - *Specifications:* Each piece of downed wood will be at least 6 feet long and at least 6 inches in diameter (small end) with a total volume of at least 10 cubic feet. At least 50 percent of downed wood will be conifer species. Log stems will have at least 75 percent of the bark tightly adhered. Downed wood pieces will be selected from area(s) as close as possible to the project site and inspected to minimize the introduction of unwanted fungal diseases and insects.
 - *Installation:* Downed wood will be placed along ditched stream. Install some wood pieces close to each other to provide connectivity for wildlife between structures.
 - Shorted pieces will be combined into piles, and will be arranged such that some tree stems lie roughly horizontal on the ground while others are crisscrossed.
- Planting of native species adjacent to ditch ~~(Planted, but did not meet survivorship goal)~~ – in the western parcel (Area A), there is an existing ditch that will be planted with willow, red elderberry, and redosier dogwood. A 100 foot long by 10 foot wide (1,000 square feet) stretch of this ditch will be planted. Willow stakes will be placed along the stream, and redosier dogwood live stakes will be placed on the outer edges adjacent to the willow. Red elderberry will be planted at the top of the ditch. Approximately 470 willow stakes will be planted at a density of 1 foot on center and stakes will be between $\frac{3}{4}$ and 2 inches in diameter and two to five feet in length. Redosier dogwood and red elderberry will be planted at a density of 4 feet on center and, depending on availability, will be either 18 to 36 inch tall bare root plants or 2 gallon container grown plants. Approximately 45 redosier dogwood and 20 red elderberry would be planted. Existing reed canary grass will be cleared as necessary to ensure establishment of plantings.
 - Non-native species removal – ~~(Complete, although blackberry has grown back)~~ – in the eastern parcel (Area B), there is an area of Himalayan blackberry that will be removed using a combination of manual methods and approved herbicides as needed. A native seed mix, approved by ODOE in consultation with ODFW, will be planted in the area where

blackberry has been removed.

3.5 Implementation Schedule

Within temporary impact areas affected by construction of the project, mitigation in the form of restoration will occur no later ~~than~~occurred the fall of the year of construction in order to stabilize the area for winter weather.

Within the habitat mitigation areas mitigating for permanent impacts, the enhancement actions of snag and downed wood placement ~~will be~~were implemented within the same year as construction.

Plantings along the ditch ~~will occur~~occurred in the fall of the year of construction to maximize plant success.

Table 2. Implementation Schedule					
Activity	Estimated Start Date		Estimated End Date		Comments
	South of Hwy 30	North of Hwy 30	South of Hwy 30	North of Hwy 30	
Tree clearing	No later than March 1, 2017	No later than July 1, 2017	March 15, 2017	July 15, 2017	Subject to landowner's harvest schedule
Final clearing and grading	March 2017	July 2017	July 2017	October 2017	NW of Hwy 30, only grading will occur in temporary workspaces (HDD bore pads)
Pipeline trenching	April 2017		November 2017		A given section will be open as limited time as possible based on complexity – trench will be closed as work progresses (i.e., the entire trench section will not be open the entire construction period)
Pipeline HDD		July 2017		November 2017	
Aboveground facilities (compressor station, well pad)	March 2017		November 2018		
Securing of conservation easement on habitat mitigation areas (for mitigation of permanent impacts)	February 2017				

Activity	Estimated Start Date		Estimated End Date		Comments
	South of Hwy 30	North of Hwy 30	South of Hwy 30	North of Hwy 30	
Restoration and revegetation of all temporary impact areas, including the pipeline area (re-contouring, noxious weed control, seeding/forbs)	October 2017	November 2017	November 2017	November 2017	
Enhancement of habitat mitigation areas (snag creation, blackberry removal, planting of native shrubs, placement of down wood)	July 2017		November 2017		Planting in fall for greatest success, but other actions will start in the summer
Monitoring of restored and revegetated temporary impact areas	June 2018	NA	June 2018	NA	No monitoring to occur in active agriculture areas north of Hwy 30.
Maintenance of restored and revegetated temporary impact areas	Summer 2018 on an as-needed basis	NA	Summer 2018	NA	No maintenance north of Hwy 30 because land use is active agriculture
Monitoring of enhancement actions at habitat mitigation areas.	NA	June 2018, 2020, and 2022	NA	June 2018, 2020, and 2022	Monitoring to occur in first, third, and fifth years following implementation and maintenance will occur as needed (replanting and fixing shrub protectors)

3.6 Monitoring and Reporting

3.6.1 Temporary Impact Areas

The following information provided the strategy for restoration and monitoring in temporary impact areas. As identified in the Monitoring Memo dated November 8, 2018, the success criteria were not met, so NWN replanted in the fall of 2018.

No monitoring will occur in temporary impact areas north of Highway 30 where the land use is active agriculture. At temporary impact areas that will be restored, monitoring will occur during the growing season the year following reseeding (June 2018). Investigators will randomly select fifteen 5-foot by 5-foot plots and provide photo documentation and ocular estimates of revegetation cover. Investigators will document percent cover in reseeded areas; documenting percent seed mix species, percent noxious weeds and species, and percent bare ground. Success criteria at each plot would include 70 percent of native seed mix/forb species, 10 percent bare ground, and not to exceed 20 percent non-native species. If success criteria are not met, NWN will begin maintenance activities in the summer of 2018 and replant in the fall of 2018. Because the areas to be replanted are private working timber lands, and NWN will not have control over what occurs on the lands

beyond project implementation (use of heavy machinery, spraying, etc.), NWN does not believe that further monitoring or replanting beyond 2018 would be valuable. A report will be provided to ODOE with percent cover information and photo documentation within one month of the monitoring visit.

3.6.2 Permanent Impact Mitigation Area

At the habitat mitigation area, investigators performed monitoring on the first, third, and fifth years following implementation of enhancement actions. The investigators carried out the following monitoring procedures:

- 1) Record environmental factors such as precipitation at the time of surveys, and precipitation levels for the year.
- 2) Verify that the standing snag and downed wood are still in place. Note any evidence of use by wildlife species.
- 3) In the first year of monitoring, investigators will document percent survival of plantings along the ditch. The success criterion for these planting will be 60 percent survivorship by the fifth year. If plant survivorship is not trending toward meeting success criteria in the first and/or third year of monitoring, NWN will implement replanting as necessary.

A report including the above information with photo documentation was provided to ODOE within one month of each monitoring period.

3.6.3 2022 Updates to Mitigation Area Enhancements

NWN provided results of monitoring in 2018, 2020, and 2022 (Years 1, 3, and 5). As summarized in those memos, plantings of native species along the ditch in mitigation Area A did not survive. NWN replanted species in late 2018 to attempt to increase survival, but those additional plantings were not successful. The blackberry that was removed in October 2017 has returned, although the original extent is generally maintained. The standing snag placed in Area B, and the downed wood placed in Area A, both showed signs of use during the fifth year of monitoring (see Figures 8 through 11).

NWN had originally identified 10.78 acres of potential permanent impact from the installation of the Project. Final quantifications identified 9.59 acres of actual permanent impact, so the mitigation areas provided 1.16 acres above and beyond what was permanently impacted by the Project. Attachment 1, of this Habitat Mitigation Plan provides the additional Enhancement Actions and an Implementation Schedule as agreed to be NWN and ODOE, in consultation with ODFW. To address the lack of survival by Year 5 of the planted species in Area A, and to fully meet ODFW's habitat mitigation goal of no net-loss for permanent impacts to Category 4 habitat, NWN proposes the following additional enhancement actions at the mitigation site:

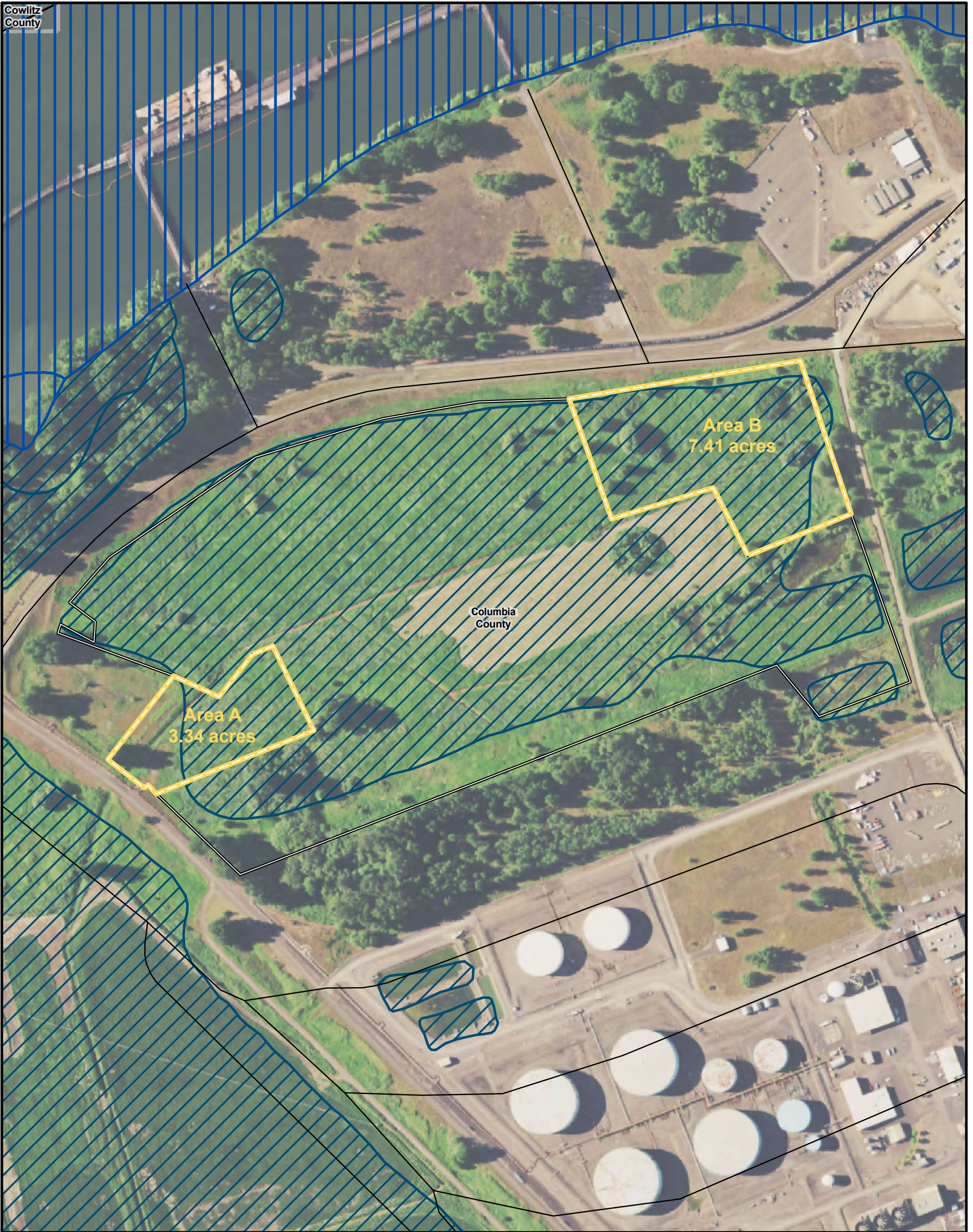
Creation of one standing snag in Area B, with the same specifications as the snag installed in Area A and described in Section 3.2; and

Placement of additional downed wood along the ditch in Area A, with the same specifications as those previously installed and described in Section 3.2.

NWN would provide a summary memo confirming installation of these features within 1 month of installation.

4 Amendment of the Plan

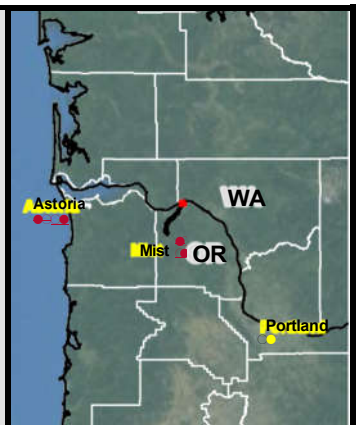
This Habitat Mitigation Plan may be amended from time to time by agreement between NWN and the Energy Facility Siting Council (EFSC). Such amendments may be made without amendment of the Site Certificate. EFSC authorizes the Oregon Department of Energy (ODOE) to agree to amendments to this plan and to mitigation actions that may be required under this plan. ODOE-approved amendments to this plan will be in consultation with ODFW. ODOE shall notify EFSC of all amendments and mitigation actions, and EFSC retains the authority to approve, reject, or modify any amendment of this plan or mitigation action agreed to by ODOE.



NW Natural
 North Mist Expansion Project
Habitat Mitigation Plan
 Columbia County, OR
 December 2015

Figure 1
 Habitat Mitigation Areas

- Habitat Mitigation Area
- Existing Mitigation Area
- NWI Wetland
- NWI Riverine
- Local Road
- County Boundary
- State Boundary



1:3,500 WGS84 UTM Zone 10 0 100 200 400 600 800 1,000 Feet

Data Sources NW Natural: project facilities / Tetra Tech: survey area, habitat type and category / ESRI: roads, political boundaries, background imagery



Figure 2. Nootka rose on Area A.



Figure 3. Looking north into Area A.



Figure 5. Looking northeast into Area B.



Figure 7. Looking west into Area B, with restoration site beyond.



Figure 6. Looking south along eastern edge of Area B.



Figure 8. Area A. Downed wood pieces adjacent to the drainage ditch. 7/6/2022.



Figure 10. Area A. Ditch bank and dense stand of reed canary grass. 7/6/2022.



Figure 9. Area B. Standing snag. 7/6/2022.



Figure 11. Area B. Himalayan blackberry thicket along northern edge of Area B. View west. 7/6/2022.



The entirety of this attachment is new, but not reflected in track changes.

Attachment 1: Habitat Mitigation Plan Amendment

(March 2023)

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Overview

The Habitat Mitigation Plan (HMP) was finalized by Northwest Natural (NWN), in consultation with the Oregon Department of Energy (ODOE) and Oregon Department of Fish and Wildlife (ODFW), prior to NMEP construction and was implemented from 2017-2022. During 2017-2022, some of the enhancement actions were not successful, requiring that the Plan be amended. In February 2023, the Plan was amended to address success issues with enhancement actions, as described in this attachment to the HMP.

1.0 Additional Enhancement Actions (2023 Amended HMP)

Additional enhancement actions required to be implemented at the mitigation site include:

- Clear out/around the Nootka rose (*Rosa nutkana*) in Area A, and mulch for vegetative competition reduction.
- Scotch Broom (*Cytisus scoparius*) Control - Foliar spraying of Scotch broom with herbicide in Area A. Annual follow-up treatments will be necessary for any newly germinated or resprouting plants. Hand pulling of newly germinated individuals is acceptable as long as the entire root can be removed.
- Creation of one standing snag (conifer with lateral branches) in Area A or Area B, with the same specifications as the snag installed in Area B and described in HMP Section 3.4.1. Snag shall be installed in any machine accessible location at least 50 feet away from the closest over-topping tree (estimated foliage drip line, not the main stem) or other structure taller than the snag height above the ground.
- Placement of additional downed wood along the ditch in Area A (in stepping stone configuration), with the same specifications as those previously installed and described in HMP Section 3.4.1. Stepping Stone configuration shall include two to three logs in criss cross overlapping piles, from the top of the bank channel in a pattern moving North towards the river approximately 20 ft apart.
- Himalayan blackberry (*Rubus armeniacus*) removal - following Steps 1-6 below, in Spring 2025, seeding of forbs and native shrubs like Spiraea shall be completed in the eastern parcel (Area B). Himalayan blackberry will be removed during timeframes that avoid work in sensitive nesting bird seasons. Applicability of sensitive nesting bird seasonal restrictions (per 1 below) will be based on pre-enhancement action nesting bird surveys.
 1. Prior to any blackberry removal actions, conduct nesting birds survey for the area of Himalayan blackberry within the eastern parcel (Area B). Blackberry removal shall adhere to the following best practices, as applicable based on the results of the nesting bird surveys):
 - Non-nesting Season (August 1 – January 31) – Blackberry spraying and removal is restricted during this season if willow flycatchers were identified during the nesting bird survey.

- Early Nesting Season (February 1 – April 15) – Blackberry spraying and removal is restricted during this season if Anna’s hummingbirds, song sparrow and spotted towhee were identified during the nesting bird survey.
 - Primary Nesting Season (April 15 – July 31) – Avoid major spray and removal.
2. Conduct the first foliar spray in August, to be followed by another foliar spray 3 weeks later.
 3. Three weeks after the 2nd spraying (fall of 2023), the blackberry stalks should be mowed.
 4. In 2024, the newly emerging plants should be sprayed up to 3 different times (avoiding the March 15 through August 15th period) with at least 3 weeks between applications.
 5. In the fall of 2024, the area should again be mowed.
 6. In the spring of 2025, spot spraying of the blackberry would be necessary along with monitoring during that year for new blackberry sprouts. Depending on the condition of the site, reseeding should then be able to be conducted.

2.0 Implementation Schedule

2.1 Additional Enhancement Action Implementation Schedule (2023 Amended HMP)

Table 1. Estimated Implementation Schedule		
Activity	Estimated Implementation Date	Comments
Clear around Nootka rose and mulch around plants	May-July 2023	
Scotch broom control	May-July 2023	
Creation of standing snag	Fall 2023	
Placement of downed wood	May-July 2023	
Monitoring Year 1	Fall 2023	
Himalayan blackberry removal		
Nesting bird survey	June 2023	
Foliar spray	August-October 2023	3 weeks in between sprays
Mow	October 2023	3 weeks following 2 nd foliar spray
Spray an additional three times	2024	At least 3 weeks between applications
Mow	September-October 2024	
Spot spraying and monitoring, reseeding	March-November 2025	
Monitoring Year 1	Fall 2024	
Monitoring Year 2	Fall 2025	
Monitoring Year 3	Fall 2026	
Monitoring Year 4	Fall 2027	
Monitoring Year 5	Fall 2028	

3.0 Monitoring and Reporting

3.1 Mitigation Area

At the habitat mitigation area, investigators shall conduct annual monitoring for the first 5-years (2023-2028) following implementation of the additional enhancement actions specific in Section 2.1 of this attachment. The investigators shall carry out the following monitoring procedures:

- 1) Record environmental factors such as precipitation at the time of surveys, and precipitation levels for the year.
- 2) Verify that the standing snag and downed wood are still in place. Note any evidence of use by wildlife species.
- 3) Verify that the Nootka Rose patch in Area A is surviving.
- 4) Verify that the Himalayan Blackberry patch in Area B does not resprout. Any sprouts should be mechanically or hand removed when they are found within 4 weeks of identification of regrowth.

If the additional enhancement actions are not demonstrated to be successful by 2028, NWN shall request ODOE review of an amended HMP with alternative enhancement actions sufficient to mitigate for the ongoing temporal and permanent loss of habitat.

If monitoring reports identify that the additional enhancement actions are successful by 2028, NWN may reduce the monitoring frequency to every 3-years for the life of the facility, **unless otherwise agreed to by ODOE in consultation with ODFW.**

*Northwest Natural has proposed the following language to replace the **Bold** language above: ...or such lesser frequency based upon successful reporting and probability of ongoing success.*

During long-term monitoring, any changes to the enhancement shall be evaluated to ensure effective mitigation during of the operational life of the facility.

A report including the above information with photo documentation shall be provided to ODOE in the annual report required pursuant to OAR 345-026-0080. Concurrent with the submission of the monitoring/annual report to ODOE, certificate holder shall also provide the monitoring report to ODFW.