Critical Areas Study

Sills Corner to North Stanwood 115 kV Reconductor Project, Phase 3

Snohomish County Public Utilities District No. 1
Snohomish County, Washington

February 3, 2024

Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

˚F	degrees Fahrenheit
BMP	best management practice
CMZ	Channel Migration Zone
County	Snohomish County
District	Snohomish Public Utility District No. 1
DNR	Washington Department of Natural Resources
DPS	Distinct Population Segment
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FWHCA	fish and wildlife habitat conservation area
GPS	global positioning system
HDR	HDR Engineering, Inc.
HGM	hydrogeomorphic
IPaC	Information for Planning and Conservation
kV	kilovolt(s)
NEHRP	National Earthquake Hazards Reduction Program
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OHWM	ordinary high-water mark
PDS	Planning and Development Services
PHS	Priority Habitats and Species
ppt	parts per thousand
project	Sills Corner to North Stanwood 115kV Reconductor Project
RCW	Revised Code of Washington
SCC	Snohomish County Code
SEPA	State Environmental Policy Act
SWIFD	Statewide Washington Integrated Fish Distribution
TESC	temporary erosion and sediment control
TMDL	total maximum daily load
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area

1 Introduction

The Snohomish Public Utility District No. 1's (District) existing Sills Corner to Stanwood electric transmission line, located in Snohomish County, Washington, brings power to customers in northwest Snohomish County and Camano Island and is reaching its end of life. Many of the poles and associated equipment are aging and in need of replacement. The District plans to rebuild the aging power line in order to provide customers improved reliability and additional capacity. This project is titled the Sills Corner to North Stanwood 115-kilovolt (kV) Reconductor Project (project).

This project is being completed in three phases. The first phase (Phase 1) rebuilt the power line 1.25 miles between the new Twin City Substation (just west of Jorgenson Slough/Church Creek) and the existing North Stanwood Substation (at 271st Street/84th Avenue NW in the City of Stanwood) with new iron poles and higher-capacity wire. Phase 1 was completed in 2020.

Phase 2 of the project will reconduct the power line between the right bank of the Stillaguamish River and the northwest side of Jorgenson Slough, near the new Twin City Substation—a total of 3.67 miles. New iron or steel poles will replace aging wooden poles, and higher-capacity wire will be installed. Additionally, the new poles are being configured such that they will accommodate a new distribution circuit to be placed under the transmission line. Phase 2 is currently undergoing permit review with Snohomish County and construction is expected to begin in 2024.

Phase 3 of the project will reconduct the power line between the Stillaguamish River and 188th Street NE/9th Avenue NE—a distance of approximately 3.58 miles. Construction for Phase 3 is currently planned to begin in 2024 and to be completed in 2025.

This Critical Areas Study addresses Phase 3 of the project only.

Phase 3 will replace 42 existing wooden transmission poles with 40 new iron/steel transmission poles and install higher-capacity wire. Some of the poles will be relocated during this process in order to provide the necessary pole spacing to accommodate the distribution underbuild, as well as to move poles out of critical areas wherever possible. Two segments of this corridor are new re-routing segments which are being designed to overcome what have perpetually been access challenges. The northernmost re-route segment includes the minor relocation or re-orientation of two aerial stream crossings. The removed transmission poles and new transmission poles for these two re-route sections are included in the above pole count: the southern re-route section will replace 5 existing poles with 6 new poles and the northern re-route section will replace 3 existing poles with 4 new poles.

Additionally, to accommodate the distribution underbuild and to upgrade the distribution crossing of the Stillaguamish River, 27 existing wooden distribution poles will be removed, and 13 new distribution poles will be installed. The redesign of the distribution crossing of the Stillaguamish River will eliminate four 3-pole "H-Frame" structures and replace each with a single ductile iron pole (included within the count of 27 wooden distribution poles to be removed and 13 new distribution poles to be installed).

The new transmission poles will be approximately 80 feet tall whereas the new distribution poles are generally 45 feet tall. The new distribution poles for the crossing of the Stillaguamish River will be approximately 95 feet tall. New overhead lines will be installed on the new poles, but the new power line will be visually similar to the existing line.

No poles would be placed within waterbodies in the study area, and no in-water work is proposed for construction. The transmission line crossings of the Stillaguamish River and Cook Slough will not require in-water work. Access routes will cross streams at existing crossings; no stream crossings will be constructed for the access routes.

This report has been prepared to address documentation needs specified within the Snohomish County (County) Wetlands and Fish and Wildlife Habitat Conservation Areas Code (Snohomish County Code [SCC] 30.62A) for Phase 3 of the project. This report addresses wetlands, fish and wildlife habitat conservation areas, flood hazard areas, and other critical areas, as defined in the SCC, that occur in the vicinity of Phase 3 and discusses the methods that will be used to avoid, minimize, and compensate for the minimal permanent and temporary impacts to critical areas resulting from the project. The contents of this report have been prepared using guidelines presented in SCC 30.62A.140.

Per the scope of the proposed project, as established with the applicant, Snohomish County Public Utility District #1, this report does not address the presence of geologically hazardous areas or lack thereof; this should be determined by a qualified geologist during a field investigation using the identification criteria listed above. Information regarding geologically hazardous areas included in this report is from publicly available sources and does not constitute an analysis of geologic hazards in the project area.

The project overlaps with the shoreline jurisdiction of Snohomish County and adheres to the following critical area ordinances cited in the Shoreline Management Plan for Snohomish County (SCC 30.67):

- SCC 30.62A, last amended by Amended Ordinance 19-020 on July 3, 2019
- SCC 30.62B, last amended by Amended Ordinance 19-022 on June 26, 2019
- SCC 30.62C, last amended by Amended Ordinance 15-034 on September 2, 2015
- SCC 30.65, last amended by Amended Ordinance 12-025 on June 6, 2012

1.1 Project Purpose

The existing Sills Corner to Stanwood electric transmission line brings power to customers in the northwest Snohomish County area and Camano Island and is reaching its end of life. Many of the poles and associated equipment are aging and in need of replacement. The District plans to rebuild a portion of the aging power line with new iron poles and higher-capacity wire, which will provide customers in the area with improved reliability and additional capacity.

1.2 Project Setting

The Phase 3 project alignment is an approximately 3.58-mile-long transmission line corridor. The project alignment follows the existing transmission corridor; it begins northwest of the right bank of the Stillaguamish River and extends southeast and parallel to the BNSF railroad, on the west side of the embankment. Where Sill Road turns to 3rd Avenue Northeast, the project alignment continues to extend cross-county southeast and parallel to the BNSF railroad, on the west side of the embankment. The southeast terminus of the project alignment is on the west side of the BNSF embankment, parallel to 188th Street Northeast (Figure 1).

Along the existing transmission line corridor, there are two areas where the transmission line is proposed to be relocated to improve accessibility for maintenance. Between 212th Street Northwest and the southern railroad crossing of Sills Road, the transmission line is proposed to be removed from the existing location on the west side of the BNSF railroad to the east side of Sills Road. From proposed pole 7/5, the transmission line is proposed to extend north over Portage Creek, the BNSF railroad, and Pioneer Highway, then west over Cook Slough and south over the BNSF railroad, rejoining the existing alignment at re-stenciled Pole 7/9. In addition, the project includes replacing four 3-pole H-frame distribution structures with single poles along an adjacent distribution line that extends from the east side of the BNSF railroad crossing at Larson Road, spanning the Stillaguamish River, and terminating just southeast of Norman Road.

The project is located within the Stillaguamish River Watershed, Washington Water Resource Inventory Area (WRIA) 5, and occurs within Sections 1, 2, 12, and 13 of Township 31 North, Range 4 East, and Section 18 of Township 31 North, Range 5 East.

Land use in the vicinity of Phase 3 includes agriculture, rural residential development, and a raised railroad owned by BNSF Railway. The project is partially within the 100-year floodplain of the Stillaguamish River, as mapped by the Federal Emergency Management Agency (FEMA 2020). Agricultural use in the vicinity of the study area includes hay fields, tilled row-crop agriculture, and livestock.

The topography is generally flat and intersected by moderate to steep banks of waterbodies. South of Portage Creek, the project alignment diverges from the floodplain of the Stillaguamish River and the topography includes steep hills above the floodplain. The BNSF Railway right-of-way, which parallels the project area, consists of a raised railroad embankment that is approximately 10 feet taller than the surrounding landscape. The railway along the study area includes multiple bridge crossings of waterbodies.

The soils listed in Table 1 are present within the Phase 3 project corridor, as mapped by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA NRCS 2023).

Table 1. Soil Types Present in the Project Area

Soil Type	Hydric (Yes/No)	Hydric Minor Components (Y/N/NA)
Alderwood-Everett-Complex, gravelly, sandy loam, 25 to 70% slopes	No	Yes

Soil Type	Hydric (Yes/No)	Hydric Minor Components (Y/N/NA)
Lynnwood loamy sand, 0 to 3% slopes	No	Yes
Puget silty clay loam, 0 to 3% slopes	Yes	Yes
Puyallup fine sandy loam, 0 to 3% slopes	No	Yes
Riverwash variable sand, 0 to 5% slopes	Yes	N/A
Sultan silt loam, 0 to 3% slopes	No	Yes
Terric Medisaprists, nearly level	Yes	Yes

1.3 Project Description

The project will replace 42 existing wooden transmission poles with 40 new ductile iron or steel poles, and the replace of 27 distribution poles with 13 new distribution poles. New overhead lines will be installed along the new poles, and existing fiber will be transferred from the old poles to the new poles. The appearance of the new transmission line will be visually similar to that of the existing line. Poles that will be replaced or removed will be pulled from the ground and backfilled to match the surrounding grade. The new poles will be renumbered (aka re-stenciled) to better align with the distance measurements along the transmission line corridor (the existing pole numbers and the new pole numbers are included in Figure 2).

Transmission poles will be installed by vibrating in 3-foot diameter steel casings to a depth of approximately 10 feet and removing the contents within the casing. The pole will then be set in the casing and backfilled with crushed rock. Distribution poles will be directly embedded (rather than installed with casings). This will result in approximately 2.62 and 1.7 cubic yards of excavation per pole respectively. Excavated material will be removed for disposal or spread evenly on site, in areas outside of sensitive areas.

After pole installation, the excavated ground surrounding each pole will be backfilled with gravel. Six inches of topsoil will be placed on top of the gravel for grass seeding. Permanent impacts at each new pole location total 3.14 square feet, which is the cross-sectional area of the new pole. Temporary land disturbance at each new pole location is estimated to be 20 square feet (5-foot-diameter clearing area). Removed poles will be pulled from the ground; the remaining cavities will be backfilled to match the surrounding grade.

There are existing transmission line crossings of several streams along the project corridor. The Cook Slough and Portage Creek crossings will be reconfigured due to the northernmost re-routing segment: the Cook Slough crossing is proposed to be moved approximately 225 feet to the north and to the opposite site of the railroad crossing and the Portage Creek crossing will be angled across the creek from new pole CI7/5 to new pole CI 7/A. All of the other existing stream crossings will remain unchanged (just re-wired with the visually similar higher-capacity wire). None of the crossings, however, will require any in-water work.

Some construction can be done with equipment staged on adjacent paved roads. In other cases, construction equipment will access poles through existing field accesses or

directly through agricultural fields (where no accesses exist). Temporary accesses will be approximately 12 feet wide and will include the use of construction mats to reduce compaction, rutting, and other disturbance during construction within wet areas. After construction is completed, the mats will be removed.

The project will be constructed to avoid or minimize impacts to wetlands and streams and their associated buffers. To the extent possible, pole locations will be accessed from existing roadways or access routes to minimize disturbance. The District will obtain temporary access easements so that access can be through farm fields rather than through wetlands and streams, to avoid direct impacts to these critical areas. It will not be possible to avoid all temporary encroachments to wetlands, streams, and buffers due to spacing requirements between poles. Limited replacement of poles within wetlands and buffers will result. The temporary access routes will avoid impacts to critical areas where feasible, with consideration given to active agricultural use of adjacent properties. Temporary impacts to critical area buffers may be unavoidable in certain areas where agricultural production is prioritized. Construction will occur during summer months when there is low precipitation and when the ground is less susceptible to rutting and compaction. The project will not adversely affect native vegetation and is unlikely to disturb soils during construction, outside of excavated new pole locations. No permanent road improvements are needed to accommodate construction.

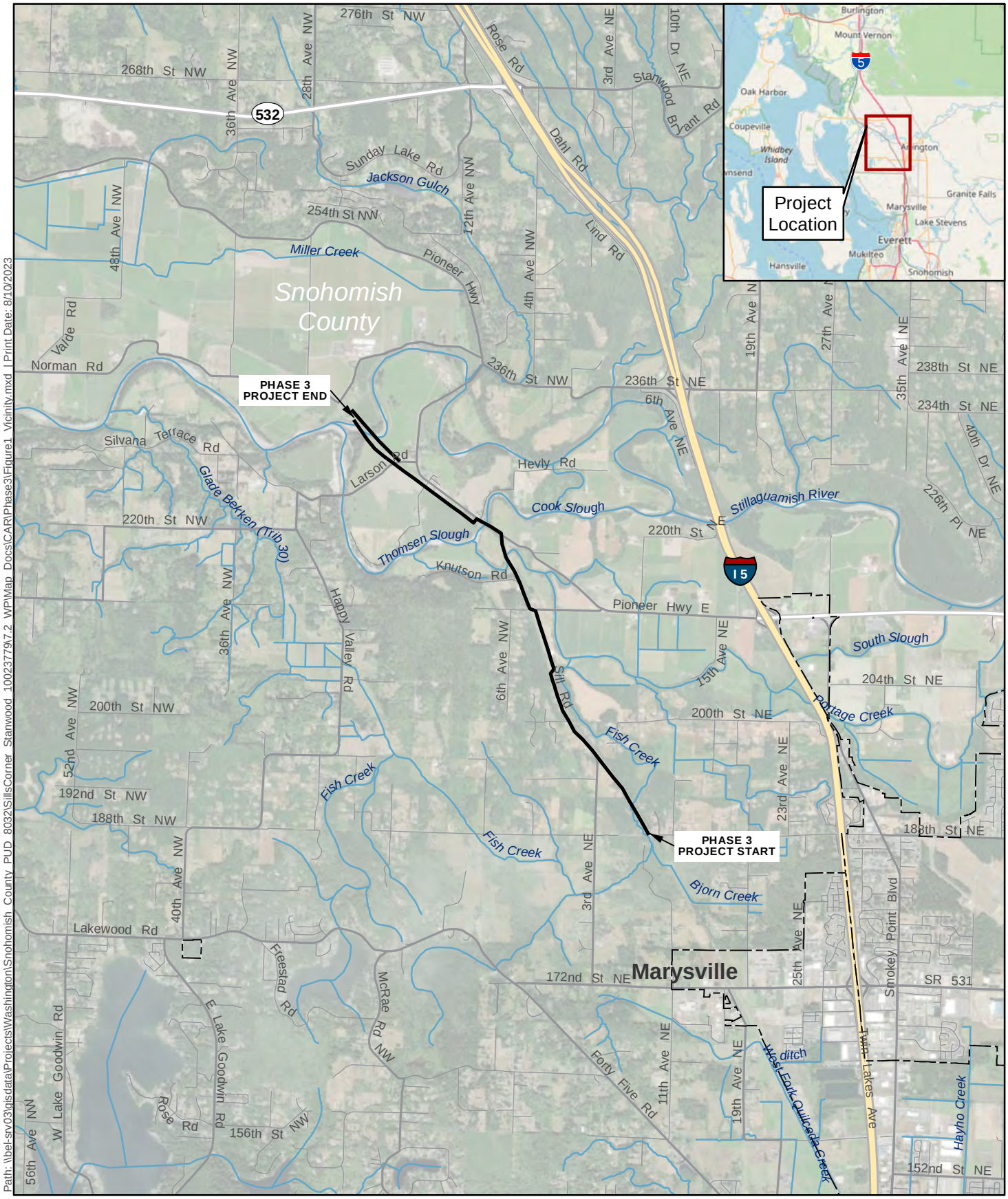
Staging areas will be outside wetlands and streams or their buffers and will be determined during the construction phase.

All staging and temporary access routes will be stabilized, following standard best management practices (BMPs) for erosion and sediment control. A temporary erosion and sedimentation control plan will be submitted to the County along with the Construction Stormwater Pollution Prevention Plan and applications for County approvals. Temporary staging areas will be determined by the construction contractor but will not occur within wetlands or streams.

The proposed project site plan is shown on Figure 2. Existing Conditions, Sheets 1 through 8. Figure 2 is located in Appendix A.

This page intentionally left blank.

Figure 1. Vicinity Map



Path: \\bel-srv03\gisdata\Projects\Washington\Snohomish County PUD 8032\SillsCorner Stanwood 10023779\7.2 WPIMap Docs\CAR\Phase3\Figure1 Vicinity.mxd | Print Date: 8/10/2023

Source: Municipal Boundary, Road, and Stream - Snohomish County (2013 and 2015), Aerial - ESRI Online (2015)

Phase 3 Alignment
Stream
Municipal Boundary

N

0 0.5 1 Mile

Figure 1
Project Vicinity Map

Print Date: 8/10/2023

Sills Corner to Standwood Transmission Line

2 Applicable Regulations

The County regulates critical areas and their applicable buffers under SCC 30.6. Critical areas regulated by the County include wetlands, fish and wildlife habitat conservation areas (FWHCAs), geologically hazardous areas, critical aquifer recharge areas, and special flood hazard areas.

Critical area classifications and required buffer widths, as specified in SCC 30.6, are discussed within this section. Regulations other than those specified in SCC 30.62 are not discussed in this document but are addressed in the Shoreline Analysis Technical Memorandum and the Floodplain Habitat Assessment Technical Memorandum, which were prepared separately. Impacts to critical areas are described in Section 5; mitigation requirements for critical areas are described in Section 6.

2.1 Wetlands

Snohomish County regulates wetlands and their buffers under SCC 30.62A. Wetlands are defined as areas "that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (SCC 30.91W.060, SCC 30.65.060(1)).

SCC requires that wetlands be rated using the *Washington State Wetland Rating System for Western Washington*: *2014 Update*, Washington State Department of Ecology (Ecology) Publication #14-06-029 (Hruby 2014). A detailed analysis of wetland functions is not included in this report; however, a brief description of wetland functions based on the wetland rating method is included in the general description of the wetlands identified within the study area.

The County (SCC 30.62A.320 [Table 2b]) determines standard wetland buffers according to the assigned wetland category in the Ecology wetland rating system, plus land use intensity (Table 2).

Table 2. Standard Wetland Buffer Widths in Snohomish County

Wetland Category	Description	Standard Buffer Width Requirements (feet)[a, b]
Wetlands containing salmonids (minimum)		150
Category I	Wetlands listed by the Washington Natural Heritage Program as having High Conservation Value	190
	Bogs	190
	Estuarine wetlands (greater than or equal to 1 acre) and coastal lagoons (greater than or equal to 0.1 acre)	150
	High-level habitat function (habitat function score is 8–9)	225
	Moderate-level habitat function (habitat function score is 6–7)[c]	110
	Total score of 23 or above but not meeting above criteria	75
Category II	Estuarine wetlands (less than 1 acre)	110

Wetland Category	Description	Standard Buffer Width Requirements (feet)[a, b]
	High level of function for habitat (habitat function score is 8–9)	225
	Moderate to high level of function for habitat (habitat function score is 6–7)[c]	110
	High level of function for water quality improvement and low for habitat (water quality function score is 8–9 and habitat function score is less than 6)[c]	75
	Total score of 20–22 but not meeting above criteria	75
Category III	Moderate-level habitat function (habitat function score is 6–7)[c]	110
	Total score of 16–19 but not meeting above criteria	60
Category IV	Low-level function score (less than 16)	40

a. Standard buffers represent moderate-level land use intensity and include uses that are not defined as high or low intensity. High- and low-intensity land use wetland buffers and their requirements are defined in SCC 30.62A.340(4)(c).
b. High-intensity land uses include commercial or industrial uses; nonresidential use in zones where the primary intent is residential use as per SCC 30.21.025; residential use (4 or more units/acre); and high-intensity recreation (golf courses, ball fields, ORV parks, etc.). Low-intensity land uses include forestry (cutting of trees only); low-intensity open space (hiking, bird-watching, preservation of natural resources, etc.); unpaved trails; and utility corridor without a maintenance road and little or no vegetation management.
c. Moderate scores ranges have been updated to comply with Ecology's July 2018 update (Ecology 2023).

2.2 Fish and Wildlife Habitat Conservation Areas

FWHCAs designated by Snohomish County include streams, lakes, naturally occurring ponds less than 20 acres, marine waters, primary association areas of critical species, state natural area preserves, natural resources conservation areas, and state wildlife areas (SCC 30.62A.010). Critical species are those species that are listed by either the state or the federal government as endangered or threatened, state-listed sensitive species, and species of local importance. State sensitive species are listed in WAC 220-200-100. Species of local importance are designated as such due to their population status or sensitivity to habitat manipulation, or because they are a game species; this includes seasonal ranges or habitat elements that, if altered, may reduce the survival of the species long term (SCC 30.91S.535). Species of local importance are designated by Snohomish County through the passing of an ordinance (SCC 30.62A.470).

Aside from waterbodies, there are no buffer distances for FWHCAs designated in the SCC. SCC 30.62A.220 describes buffers for FWHCAs as "habitat for water-associated and riparian- associated wildlife, wildlife movement corridors, noise and visual screening, large woody debris and other natural organic matter recruitment, floodwater attenuation and storage, temperature maintenance, pollution assimilation, streambank stabilization and supply of sediments and nutrients."

2.2.1 Waterbodies

Snohomish County regulates streams, lakes, and marine waters under SCC 30.62A. Streams are defined in SCC 30.91S.640 as:

> "…areas where naturally occurring surface waters flow sufficiently to produce a defined channel or bed which demonstrates evidence of the passage of water

including, but not limited to, bedrock channels, gravel beds, sand and silt beds and defined-channel swales. A defined channel or bed means a water course that is scoured by water or contains deposits of mineral alluvium. The channel or bed need not contain water during the entire year.

Streams do not include water courses which were created entirely by artificial means, such as irrigation ditches, canals, roadside ditches or storm or surface water run-off features, unless the artificially created water course contains salmonids or conveys a stream that was naturally occurring prior to the construction of the artificially created water course."

A lake is defined in SCC 30.91L.010 as a body of freshwater that:

1. "Occurs in a depression of land or expanded part of a stream, including reservoirs;
2. Is greater than 6.6 feet (2 meters) in depth at the deepest point at ordinary low water;
3. Has less than 30% coverage by trees, shrubs, or persistent emergent vegetation; and
4. Has an ocean-derived salinity of less than 0.5 parts per thousand (ppt)."

The boundary of a lake is determined by the OHWM; where a stream enters a lake, the extension of the lake OHWM elevation determines the boundary.

SCC 30.91M.050 defines marine waters as "non-wetland salt water bodies of the state regulated under chapter 90.58 RCW [Revised Code of Washington] where average surface water salinity is equal to or greater than 0.5 parts per thousand (ppt)."

Streams and lakes are classified in accordance with WAC 222-16-030. Buffer distances for streams, lakes, and marine waters are designated in SCC 30.62A.320(1)(a) -Table 2a. The buffer distances for streams are summarized in Table 3, below.

Table 3. Summary of the Water Typing System and Buffer Widths for Snohomish County Waterbodies

Waterbody Type	Water Type	Definition[a]	Snohomish County Buffer Width[b]
Streams and Lakes	Type S	Segments of all waters, within their bankfull width, as inventoried as "shorelines of the state" under RCW 90.58 and the rules promulgated pursuant to RCW 90.58.	150 feet
	Type F	Segments of natural waters other than Type S waters, which are within the bankfull widths of defined channels or within lakes having a surface area of 0.5 acre or greater at seasonal low water, and which in any case contain fish habitat or are described by one of the following four categories: (a) Are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the Washington State Department of Natural Resources to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less; (b) Are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality; (c) Are within federal, state, local, or private campgrounds with more than 10 camping units: Provided that the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement; or (d) Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat.	150 feet (salmonid-bearing stream) 100 feet (non-salmonid-bearing stream)
	Type Np	Segments of natural waters within the bankfull width of defined channels that are perennial non-fish-habitat streams. Perennial streams are waters that do not go dry any time of the year of normal rainfall. However, for the purpose of water typing, Type Np waters include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. Np waters begin downstream of the point along the channel where the contributing basin area is at least 52 acres in size.	50 feet
	Type Ns	Segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np waters. These are seasonal, non-fish-habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np water. Ns waters must be physically connected by an above-ground channel system to Type S, F, or Np waters.	50 feet
Marine Waters	Type 1	"Marine waters" means non-wetland saltwater bodies of the state regulated under RCW 90.58 where average surface water salinity is equal to or greater than 0.5 part per thousand (SCC 30.91M.050).	150 feet

[a] WAC 222-16-030
[b] SCC 30.62A.320

2.3 Geologically Hazardous Areas

Snohomish County defines geologically hazardous areas as areas that, because of their susceptibility to erosion, sliding, earthquake, or other geologic events, may not be suited for the siting of commercial, residential, or industrial development consistent with public health or safety concerns (SCC 30.91G.020). Types of geologically hazardous areas regulated by the County and considered critical areas, per SCC 30.91C.340, include erosion hazard areas, landslide hazard areas, seismic hazard areas, mine hazard areas, volcanic hazard areas, and tsunami hazard areas:

- Erosion hazards are defined in SCC 30.91E.160 as:
  - Areas containing soils that are at high risk from water erosion according to the mapped description units of the USDA NRCS, formerly the Soil Conservation Service, National Soil Classification System
  - Channel migration zones
  - The shorelines of water bodies subject to wind and wave erosion
- Landslide hazard areas (SCC 30.91L.040) are areas potentially subject to mass earth movement based on a combination of geologic, topographic, and hydrologic factors, with a vertical height of 10 feet or more. These include the following:
  - Areas of historic landslides as evidenced by landslide deposits, avalanche tracks, and areas susceptible to basal undercutting by streams, rivers, or waves;
  - Areas with slopes steeper than 33 percent that intersect geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock, and that contain springs or ground-water seeps; and
  - Areas located in a canyon or an active alluvial fan, susceptible to inundation by debris flows or catastrophic flooding.
- Seismic hazard areas are areas that have been determined to have known or inferred faults, ground-rupture potential, liquefaction potential, or seismically induced slope instability (SCC 30.91S.121).
- Mine hazard areas are areas underlain by or affected by underground mine workings such as tunnels, air shafts, and those areas adjacent to steep slopes produced by open pit mining or quarrying, but excluding any areas where the mine workings have been properly stabilized and closed and made safe consistent with all applicable federal, state, and local laws (SCC 30.91M.090).
- Volcanic hazard areas are subject to pyroclastic flows, lava flows, debris flows, mud flows, or related flooding resulting from volcanic activity originating on Glacier Peak, as indicated on maps produced by the U.S. Geological Survey (SCC 30.91V.030).
- Tsunami hazard areas

Per SCC 30.62B.210, the County has designated geologically hazardous areas, as required by RCW 36.70A.170. The project proponent is responsible for identifying geologically hazardous areas within a project area (as determined by a qualified geologist during a field investigation), which will be verified by the County. This report does not confirm the presence of geologically hazardous areas, or lack thereof, nor does it address impacts to these areas. The information presented is from publicly available resources and does not constitute an analysis of geologic hazards in the project area.

2.4 Critical Aquifer Recharge Areas

The County has established three classifications of critical aquifer recharge areas (SCC 30.62C.220):

- Sole-source aquifers designated by the U.S. Environmental Protection Agency (EPA) in accordance with the Safe Drinking Water Act of 1974 (Public Law 93-523)
- Areas within the 10-year travel zone of Group A wellhead protection areas, determined in accordance with delineation methodologies specified by the Washington Department of Health under the authority of Washington Administrative Code (WAC) 246-290
- Areas of high, medium, and low sensitivity to groundwater contamination, based on depth to groundwater and in accordance with *The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington* (Thomas et al. 1997)

However, the presence of critical aquifer recharge areas, or lack thereof, should be determined by a qualified hydrologist during a field investigation. This report addresses mapped critical aquifer recharge areas but does not address impacts to these areas due to the proposed project.

2.5 Special Flood Hazard Areas

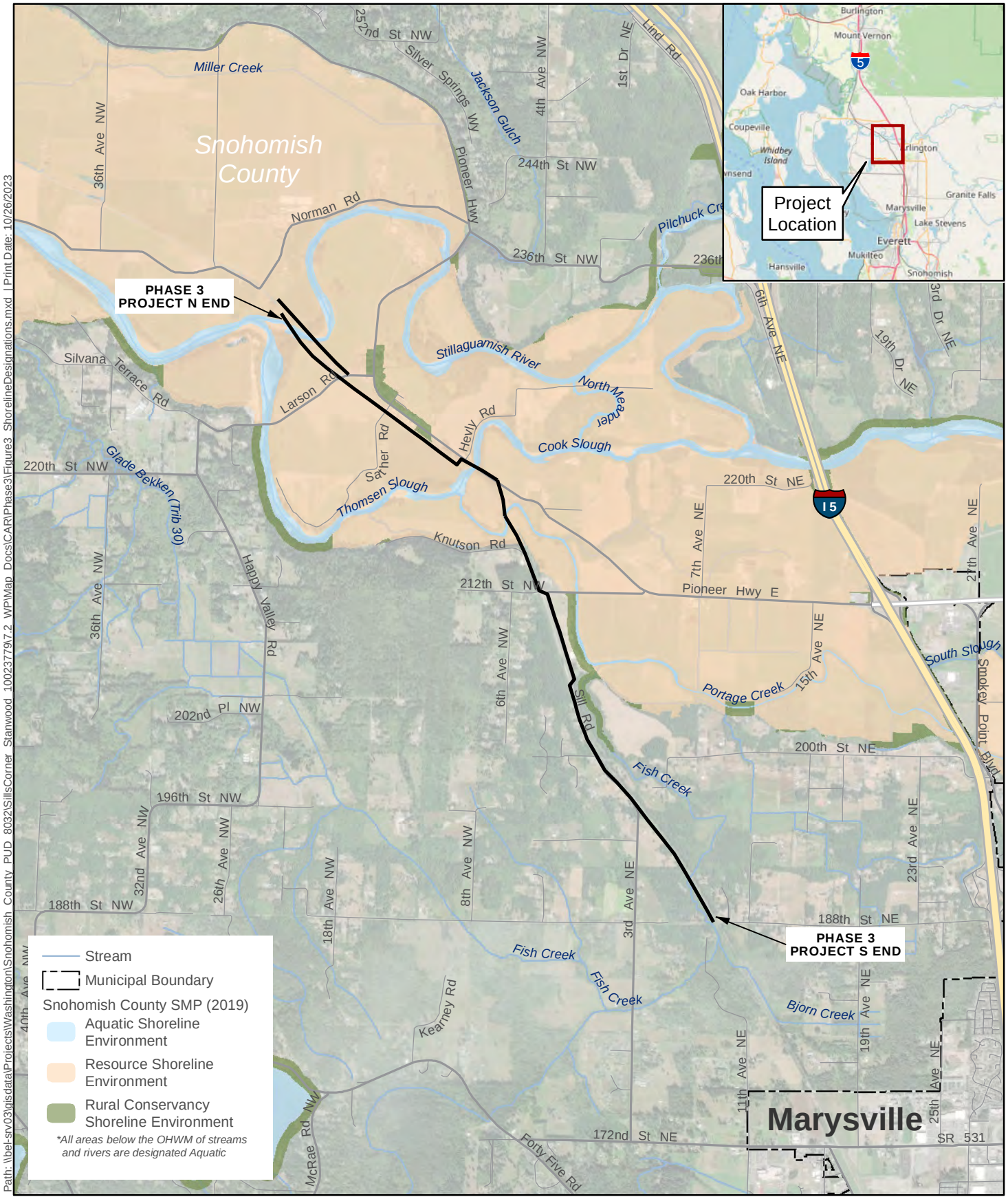
The County defines special flood hazard areas as those lands in the floodplain subject to a 1 percent or greater chance of flooding in any given year as determined by the Flood Insurance Rate Maps for Snohomish County (SCC 30.91F.370). However, identification of flood hazard areas, or lack thereof, should be determined by a qualified hydrologist or floodplain civil engineer during a field investigation. This report addresses mapped flood hazard areas but does not address impacts to these areas due to the proposed project.

2.6 Shorelines of the State

The County defines “Shorelines” as all of the water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them; except (1) shorelines of statewide significance; (2) shorelines on segments of streams upstream of a point where the mean annual flow is 20 cubic feet per second or less, and the wetlands associated with such upstream segments; and (3) shorelines on lakes less than 20 acres in size, and wetlands associated with such small lakes (SCC 30.91S.240).

Snohomish County designates rivers or streams with a mean annual flow greater than 20 cubic feet per second and associated floodways and floodplains as shorelines. A portion of the project area is located in the 100-year floodplain of the Stillaguamish River and is therefore subject to the County's Shoreline Management Program. SCC 30.67.060 (Chapter 30.67 Shoreline Management Program) states that critical areas within shoreline jurisdiction are subject to the regulations of SCC Chapter 30.62A Wetlands and Fish & Wildlife Habitat Conservation Areas. Figure 3 shows the shoreline designations in the project area.

Figure 3. Shoreline Designations



Path: \\bel-srv03\gisdata\Projects\Washington\Snohomish County PUD 8032\SilsCorner Stanwood 10023779\7.2 WPIMap Docs\CAR\Phase3\Figure3 ShorelineDesignations.mxd | Print Date: 10/26/2023

Source: Municipal Boundary, Road, and Stream - Snohomish County (2013 and 2015), Floodzone FEMA Aerial - ESRI Online (2023)

Figure 3
Shoreline Designations

Print Date: 10/26/2023

Sils Corner to Standwood Transmission Line

3 Study Methods

Critical areas were identified through a two-step process. HDR Engineering, Inc. (HDR), biologists first reviewed existing documents listed in Section 3.2. After this review, HDR biologists completed a thorough field investigation of the study area for wetlands and FWHCAs.

Publicly available maps listed in Section 3.2 were utilized for the evaluation of geologically hazardous areas, critical aquifer recharge areas, and special flood hazard areas.

3.1 Study Area

The study area is approximately 3.58 miles long. SCC 30.91S.350 defines a study site as the area within 200 feet of the development activity. HDR evaluated a 50-foot-wide corridor centered on the alignment of the proposed pole locations with field investigations. Wetlands and FWHCAs in the vicinity (within 200 feet) but outside of the 50-foot-wide study area were not formally delineated; those features were identified and assessed based on characteristics visible from public rights-of-way and available information using online maps and aerial imagery. Wetlands and waterbodies within 200 feet of the study area may have buffers that intersect the study area.

3.2 Review of Existing Information

HDR biologists reviewed the following existing environmental documents to determine the presence of critical areas in the project area:

- USDA NRCS Web Soil Survey (USDA NRCS 2023)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Web Site (USFWS 2023a)
- USFWS Information for Planning and Conservation (IPaC) Report (USFWS 2023b)
- National Marine Fisheries Service (NMFS) Protected Resources App (NMFS 2023)
- Washington Department of Fish and Wildlife (WDFW) SalmonScape (WDFW 2023a)
- WDFW Priority Habitats and Species (PHS) on the Web (WDFW 2023b)
- WDFW Washington State Fish Passage (WDFW 2023c)
- Statewide Washington Integrated Fish Distribution (SWIFD 2023) database
- Washington Department of Natural Resources (DNR) Washington Geologic Information Portal (DNR 2023a)
- DNR Forest Practices Application Mapping Tool (DNR 2023b)

- Snohomish County Planning and Development Services (PDS) Map Portal (2023)

These documents provide reference information on the soils, geotechnical hazards, hydrology, land use, wildlife habitat, wetlands, and streams in the project area.

3.3 Field Investigation

Field investigations for the project were conducted by qualified HDR biologists. The field investigation consisted of an initial field reconnaissance followed by more detailed delineation of wetlands and streams in the 50-foot-wide field investigation area. Field investigations were conducted on May 9 and 10, July 12–14, and July 19, 2022, and May 9, 16, and 17, 2023.

During the 3 months preceding the May 2022 field investigations (February through April 2022), the Everett, Washington, Station (452675), located approximately 13 miles south from the south end of the project, recorded a total of 6.72 inches of precipitation. Average total rainfall for these months is 10.17 inches. Recorded precipitation levels in February, March, and April were normal. According to the Direct Antecedent Rainfall Evaluation Method for determining normal conditions (Sumner et al. 2009), precipitation for the 3 months prior to the May 2022 field investigations was considered normal. During the 2 weeks prior to the start of field work (April 24, 2022, through May 8, 2022), 1.7 inches of precipitation was recorded, compared to the average of 2.11 inches for this time period. The average temperature high for the days of field investigation was 59 degrees Fahrenheit (˚F) in Everett, Washington, which is slightly warmer than the historical average for these dates (55˚F) (Everett, Washington, Station [452675]).

During the 3 months preceding the July 2022 field investigations (April through June 2022), the Everett, Washington, Station (452675), recorded a total of 7.92 inches of precipitation. Average total rainfall for these months is 7.78 inches. Recorded precipitation levels in April were normal; recorded precipitation levels in May and June were wetter than normal. According to the Direct Antecedent Rainfall Evaluation Method for determining normal conditions (Sumner et al. 2009), precipitation for the 3 months prior to the July 2022 field investigations was considered wetter than normal. During the 2 weeks prior to the start of field work (June 27 through July 11, 2022), 0.26 inch of precipitation was recorded, compared to the average of 0.62 inch for this time period. The average temperature high for the days of field investigation was 76˚F in Everett, Washington, which is slightly warmer than the historical average for these dates (75˚F) (Everett, Washington, Station [452675]).

During the 3 months preceding the May 2023 field investigations (February through April 2022), the Everett, Washington, Station (452675) recorded a total of 6.19 inches of precipitation. Average total rainfall for these months is 10.17 inches. Recorded precipitation levels in February were normal; March precipitation levels were below normal; and April precipitation levels were above normal. According to the Direct Antecedent Rainfall Evaluation Method for determining normal conditions (Sumner et al. 2009), precipitation for the 3 months prior to the May 2023 field investigations was considered normal. During the 2 weeks prior to the start of field work (April 24 through May 8, 2023), 1.84 inches of precipitation was recorded, compared to the average of 2.11 inches for this time period. The temperature high for the day of field investigation

was 76˚F in Everett, Washington, which is warmer than the historical average for these dates (66˚F) (Everett, Washington, Station [452675]).

Hydrologic conditions were determined be drier than normal for the May 2022 field investigation dates, wetter than normal for the July 2022 field investigation dates, and normal for the May 2023 field investigation dates. This was taken into consideration when evaluating the wetland hydrology. If areas lacked wetland hydrology during a period of normal or wetter than normal hydrologic conditions, it can be inferred that the area does not experience sufficient inundation or saturation to support wetland conditions and the area does not meet the criteria to be a classified as a wetland.

3.3.1 Wetlands

Wetland Identification

Wetlands were identified through a two-step process. HDR staff first reviewed existing documents, including soil surveys, wetland and stream inventories, aerial photographs, and other reports listed in Section 3.2. After this review, HDR staff completed a thorough field investigation of the study area that included wetland verification, delineation, and classification.

Biologists delineated wetlands in the study area using the three parameter methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), as updated by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). Areas were identified as wetlands if they met the necessary indicators for hydrophytic vegetation, hydrology, and hydric soils. A detailed description of the field methods used in this study is provided in Appendix C. Formal paired data plots were collected in each wetland identified within the study area. The locations of paired data plots are shown on Figure 2 (Appendix A) and data from all plots are included in Appendix D.

Delineated wetland boundaries and wetland data plot locations were recorded using Trimble 7X global positioning system (GPS) devices but were not marked in the field, per the guidance from Snohomish County Staff at the pre-submittal conference (personal communication, Snohomish County, August 3, 2022). The Trimble devices are capable of submeter accuracy. The resulting data were incorporated into project base maps.

Wetland Rating

Wetland ratings are used by regulatory agencies to help determine wetland buffers, mitigation replacement ratios, and permitted uses in wetlands. Ratings are based on a wetland's sensitivity to disturbance, rarity within a region, functions, and values. Generally, wetlands that have not been altered significantly due to urbanization have structural and spatial diversity, and those that are hydrologically connected to streams have higher ratings.

Wetlands in the project study area were rated using the *Washington State Wetland Rating System for Western Washington: 2014 Update*, Ecology Publication # 14-06-029 (Hruby 2014). Table 4 summarizes the 2014 Ecology rating criteria.

Wetland habitats identified in the study area were classified according to the system outlined by the USFWS in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The Cowardin system classifies wetlands based on their dominant vegetation structure and water regime.

Table 4. Wetland Rating System

Regulatory Agency	Category			
	I	II	III	IV
Washington State Department of Ecology[a] Snohomish County[b]	Category I wetlands represent a unique or rare wetland type; or are more sensitive to disturbance than most wetlands; or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or provide a high level of functions. Specific wetlands that meet the Category I criteria include: • Relatively undisturbed estuarine wetlands over 1 acre in size; • Wetlands of High Conservation Value (formerly call national Heritage Wetlands), specifically: o Wetlands identified by the Washington Natural Heritage Program/DNR as important ecosystems for maintaining plant diversity in our state; o Bogs; o Mature and old-growth forested wetlands over 1 acre in size; o Wetlands in coastal lagoons; o Interdunal wetlands that score 8 or 9 points for habitat and are larger than 1 acre in size; and o Wetlands scoring 23 points or more (out of 27) on the wetland rating form.	Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. Specific wetlands that meet the Category II criteria include: • Estuarine wetlands smaller than 1 acre in size, or disturbed estuarine wetlands larger than 1 acre; and • Wetlands scoring between 20 and 22 points (out of 27) on the wetland rating form; and • Interdunal wetlands larger than 1 acre that score 7 or lower for habitat, or those found in a mosaic of wetlands and dunes larger than 1 acre.	Category III wetlands provide a moderate level of functions and can often be adequately replaced with a well-planned mitigation project. Specific wetlands that meet the Category III criteria include: • Wetlands scoring between 16 and 19 points (out of 27) on the wetland rating form; • Wetlands that can be adequately replaced with a well-planned mitigation project; and • Interdunal wetlands between 0.1 acre and 1.0 acre in size.	Category IV wetlands have the lowest levels of functions and are often heavily disturbed. Specific wetlands that meet the Category IV criteria include: • Wetlands scoring less than 16 points (out of 27) on the wetland rating form.

[a] Hruby (2014)
[b] SCC 30.62A.230

3.3.2 Fish and Wildlife Habitat Conservation Areas

FWHCAs were identified through a two-step process. HDR staff first reviewed existing documents including online stream inventories, aerial photographs, PHS data, and other reports that concern FWHCAs in the project vicinity. After this review, biologists completed a thorough field investigation of the study area that included stream identification, delineation, and classification and identification of other potential FWHCAs in the study area.

Streams and Waterbodies

To determine the OHWM of freshwater streams in the project area, HDR biologists utilized Ecology's (Anderson et al. 2016) guidance for OHWM identification, which is based on the Shoreline Management Act (RCW 90.58.030(2)(b) and WAC 173-22-030(11)).

HDR biologists looked for physical indicators including, but not limited to, a natural scour line impressed on the bank, distribution of upland and water tolerant vegetation, and bed and banks. The OHWM for identified streams within the study area was marked in the field, and the locations were surveyed using the GPS device. The resulting data were incorporated into project base maps.

Snohomish County classifies streams based on the state's stream tying system established in WAC 222-16-030. Criteria for this typing system are described in Table 3. Buffer widths were assigned to each stream based on the stream types described in Table 3. The stream types described in this report are based on the stream reaches within the study area; upstream reaches may be rated lower or higher.

Fish presence was determined through the review of previous studies, an assessment of the available habitat, the hydrologic condition of all identified surface waters, Forest Practices Application Mapping Tool (DNR 2023b; SWIFD 2023), Washington State Fish Passage (WDFW 2023c), USFWS Listed and Proposed Endangered and Threatened Species and Critical Habitat in the study area (USFWS 2023b), and SalmonScape online maps (WDFW 2023a).

4 Results

4.1 Wetlands

A total of 17 wetlands were identified within the study area, and 1 wetland was identified in close proximity to the study area. Each of the wetlands delineated in the study area extended off site, as indicated by the approximate total acreage listed in Table 5. All wetlands identified are located in unincorporated Snohomish County (Figure 2, Sheets 1 through 8). A summary of the characteristics of the wetlands is provided in Table 5. Descriptions of the wetlands delineated by HDR are provided below in Table 6 through Table 23. Formal paired data plots were assessed in each wetland; data from all plots are presented in Appendix C. Wetland Rating Forms are included in Appendix D. Wetlands and buffers are shown on Figure 2, Sheets 1 through 8.

Table 5. Summary of Wetlands Delineated in Study Area

Wetland Name	Hydro-geomorphic Classification[a]	Cowardin Classification[b]	Approx. Acreage in Study Area (approx. total acreage)	Wetland Rating[c]	Wetland Buffer (feet)[d]
8/7	Depressional	PEM	0.04 (0.07)	II	110
8/7B	Depressional	PEM	0.02 (0.02)	III	60
8/5	Depressional	PEM, PSS	0.23 (0.48)	II	75
7/B	Depressional	PEM	0.02 (0.02)	III	60
7/A	Depressional	PEM, PFO	0.21 (0.72)	II	75
7/11	Depressional	PEM	0.03 (0.03)	III	60
7/4	Depressional	PEM, PSS	0.29 (0.64)	III	110
7/4B	Depressional	PEM, PSS	0.08 (0.17)	III	60
7/2	Riverine	PEM	0.12 (0.30)	II	110
7/1	Depressional	PEM, PSS	0.64 (4.57)	II	225
6/B	Depressional	PEM, PSS	0.00 (0.84)[e]	II	110
6/C	Depressional	PEM	0.09 (0.09)	II	75
6/11	Depressional	PEM, PSS	0.18 (0.27)	II	110
6/9	Depressional	PEM, PSS	1.11 (1.87)	II	110
XCC42	Slope	PEM, PSS, PFO	0.16 (0.50)	II	110
XCC42B	Riverine	PSS, PFO	<0.01 (0.01)	II	110
5/5	Slope	PEM, PSS	0.01 (0.01)	III	60
5/4	Depressional/ Riverine	PEM, PSS, PFO	0.03 (10.01)	II	225

Note: Approx. = approximate.
[a] Hydrogeomorphic (HGM) classifications are based on *A Hydrogeomorphic Classification of Wetlands* (Brinson 1993).
[b] Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). PEM = Palustrine Emergent, PFO = Palustrine Forested, POW = Palustrine Open Water, PSS = Palustrine Scrub/Shrub.
[c] State Wetland Rating System for Western Washington (Hruby 2014).
[d] Standard wetland buffer as specified in SCC 62A.340(4)(c).
[e] Wetland 6/B is located adjacent to the project area. It does not intersect with the project area.

Table 6. Wetland 8/7 Summary

<table>
<tr><th colspan="3">WETLAND 8/7 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.206281, Longitude: -122.263001</td></tr>
<tr><td colspan="2" rowspan="12">  </td><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>II</td></tr>
<tr><td>Water Quality</td><td>7</td></tr>
<tr><td>Hydrologic</td><td>7</td></tr>
<tr><td>Habitat</td><td>6</td></tr>
<tr><td>Local Rating</td><td>II</td></tr>
<tr><td>Local Buffer Width</td><td>110 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.07 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 8/7-1</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 8/7-2</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland 8/7 is a depressional wetland that is located at the northwest end of the study area. It was identified during the field investigation for Phase 2 of the project, and formal paired sample plots were established. Dominant vegetation consists of reed canary grass (Phalaris arundinacea) and Himalayan blackberry (Rubus armeniacus). Other vegetation present includes Canada thistle (Cirsium arvense) and giant horsetail (Equisetum telmateia). Vegetation in Wetland 8/7 meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland 8/7 are mapped as Puget silty clay loam, which is a hydric soil. Wetland 8/7 soils consist of a surface dark layer underlain by a depleted matrix with redoximorphic features. Soils in Wetland 8/7 meet hydric soil indicators for a depleted matrix (F3) and depleted below dark surface (A11).</td></tr>
<tr><td>Hydrology</td><td colspan="2">Primary sources of hydrology in Wetland 8/7 include runoff from the surrounding area. It is also located in the floodplain of the Stillaguamish River. Oxidized rhizospheres, which support a positive hydrology determination, were observed in the second soil layer in Wetland 8/7.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">The boundaries of Wetland 8/7 were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present. The boundary was generally along a topographic break where vegetation shifted to upland plant-dominated composition and hydric soil indicators were no longer present.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland 8/7 is rated Category II using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and moderate habitat (6) functions, scoring 20 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland 8/7 has moderate potential to improve water quality because it has no surface outlet and has areas of persistent vegetation. The surrounding area contributes contaminants to the wetland from agricultural runoff and an adjacent septic system. The wetland is located in the Stillaguamish River basin, which has several total maximum daily loads (TMDLs) and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland 8/7 has moderate potential to reduce flooding and erosion due to the lack of a surface outlet and a relatively small contributing basin. The wetland is located in a landscape with more excess surface runoff than can be attenuated by the wetland. This function is valuable to the community, as the areas downgradient experience flooding.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland 8/7 has low potential to support wildlife habitat due to its lack of complexity and low biodiversity. However, the wetland is adjacent to accessible habitat along the Stillaguamish River, which contributes to moderate potential to support habitat. The wetland is also in the vicinity of several priority habitats as identified by WDFW; these include riparian and instream habitat and swan species biodiversity areas (WDFW 2023b).</td></tr>
</table>

Table 7. Wetland 8/7B Summary

WETLAND 8/7B – INFORMATION SUMMARY	
Location:	Latitude: 48.2038954, Longitude: -122.2605112

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	III
Water Quality	7
Hydrologic	7
Habitat	5
Local Rating	III
Local Buffer Width	60 feet
Wetland Size (Total)	0.02 acre
Cowardin Classification	PEM
HGM Classification	Depressional
Wetland Data Sheet(s)	SP 8/7B-1
Upland Data Sheet(s)	SP 8/7B-2

Dominant Vegetation	Wetland 8/7B is a small, depressional wetland. It is located within the study area, adjacent to an agricultural field. Vegetation in the wetland is dominated by reed canary grass and Himalayan blackberry. Vegetation in Wetland 8/7B meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 8/7B are mapped as Puget silty clay loam, which is rated as a hydric soil. Wetland 8/7B soils consist of a surface layer of dark silty clay loam underlain by depleted silty clay loam with redoximorphic features. Sampled soils meet hydric soil indicators for depleted below dark surface (A11) and depleted matrix (F3).
Hydrology	Wetland 8/7B is an isolated wetland with no outlet. Hydrologic observations in the wetland included water-stained leaves and oxidized rhizospheres on living roots. Hydrology in the wetland is likely due to runoff from the nearby agricultural field, as the wetland is located in a low spot adjacent to the field. The wetland is also located in the floodplain of the Stillaguamish River.
Rationale for Delineation	The boundaries of Wetland 8/7B were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present.
Rationale for Local Rating	Wetland 8/7B is rated Category III using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and low habitat (5) functions, scoring 19 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland 8/7B has moderate potential to improve water quality. It is vegetated with dense herbaceous vegetation and does not have a surface water outlet. The wetland receives untreated runoff from the adjacent agricultural fields. It is located in a basin with an aquatic resource on the 303(d) list and in the Stillaguamish River watershed, which has a TMDL.
Hydrologic	Wetland 8/7B has a moderate potential to reduce flooding and erosion due to dense vegetation that can reduce the velocity of floodwater. It has the potential to support hydrologic functions as the contributing basin consists mainly of agricultural land use with increased runoff, and the area downgradient experiences flooding that damages human and natural resources.
Habitat	Wetland 8/7B has limited wildlife habitat potential due to a high proportion of high-intensity land use in the surrounding area, due mainly to agriculture. There is no accessible habitat. Priority habitats identified by WDFW in the vicinity of the wetland include riparian and in-stream areas as well as biodiversity areas for swan species (WDFW 2023b); these contribute to a high habitat value to society.

Table 8. Wetland 8/5 Summary

<table>
<tr><th colspan="3">WETLAND 8/5 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.2029261, Longitude: -122.2586508</td></tr>
<tr><td colspan="2" rowspan="12">  </td><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>II</td></tr>
<tr><td>Water Quality</td><td>8</td></tr>
<tr><td>Hydrologic</td><td>8</td></tr>
<tr><td>Habitat</td><td>5</td></tr>
<tr><td>Local Rating</td><td>II</td></tr>
<tr><td>Local Buffer Width</td><td>75 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.48 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM/PSS</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 8/7-1</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 8/7-2</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland 8/5 is a depressional wetland located between an agricultural field and the BNSF railroad embankment. Vegetation is dominated by reed canary grass and Himalayan blackberry. Other vegetation in the wetland includes red elderberry (Sambucus racemosa) and snowberry (Symphoricarpos albus). The vegetation community in Wetland 8/5 is hydrophytic.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland 8/5 are mapped as hydric (Puget silty clay loam). Wetland 8/5 soils consist of depleted silty clay loam with redoximorphic features. Sampled soils meet the hydric soils indicators for a depleted matrix (F3).</td></tr>
<tr><td>Hydrology</td><td colspan="2">Primary sources of hydrology in Wetland 8/5 include runoff from the railroad embankment and runoff from adjacent agricultural fields. Wetland 8/5 is located in the floodplain of the Stillaguamish River. Positive hydrology determination is supported by the geomorphic position of the wetland and observations of saturated soils during previous wet season delineations (January 2016).</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">Wetland 8/5 was identified based on the presence of all three wetland criteria. The boundary was delineated based on the presence of hydric soil indicators as well as topography.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland 8/5 is rated Category II using the current Ecology rating system because it provides high water quality (8), high hydrologic (8), and low habitat (5) functions, scoring 21 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland 8/5 has high potential to improve water quality. It is a depressional wetland with no outlet. The wetland receives untreated runoff from adjacent agricultural fields, the BNSF railroad, and stormwater discharge. It is located in a basin with aquatic resources on the 303(d) list and with TMDLs. Therefore, Wetland 8/5 has high potential to support water quality functions and high value to society to perform this function.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland 8/5 has high potential to reduce flooding and erosion due to the lack of an outlet, which increases the water storage capacity of the wetland. The wetland has the potential to perform hydrologic functions due to the majority of the contributing basin consisting of land uses that generate runoff (agriculture and impervious surfaces). Performance of hydrologic functions in Wetland 8/5 is of high value to society, as flooding regularly occurs downgradient of the wetland.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland 8/5 has low habitat complexity and lack special habitat features. The surrounding landscape has low potential to support habitat function due to a high percentage of land in agricultural use. There is no accessible habitat from the wetland. Priority habitats identified by WDFW in the vicinity of the wetland include riparian and in-stream areas, as well as a biodiversity area for swan species (WDFW 2023b).</td></tr>
</table>

Table 9. Wetland 7/B Summary

WETLAND 7/B – INFORMATION SUMMARY	
Location:	Latitude: 48.1957439, Longitude: -122.2418186

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	III
Water Quality	7
Hydrologic	7
Habitat	7
Local Rating	III
Local Buffer Width	60 feet
Wetland Size (Total)	0.02 acre
Cowardin Classification	PEM
HGM Classification	Depressional
Wetland Data Sheet(s)	SP 7/B-1
Upland Data Sheet(s)	SP 7/B-2

Dominant Vegetation	Wetland 7/B is a narrow depressional wetland located in a swale between an agricultural field and Pioneer Highway. Vegetation is dominated by meadow foxtail (*Alopecurus pratensis*) and Himalayan blackberry. The vegetation community in Wetland 7/B is hydrophytic.
Soils	Soils in Wetland 7/B are mapped as hydric (Puget silty clay loam). Wetland 7/B soils consist of depleted silty clay loam with redoximorphic features. Sampled soils meet the hydric soils indicators for a depleted matrix (F3).
Hydrology	The primary source of hydrology in Wetland 7/B is runoff from the agricultural field and Pioneer Highway. The wetland is also located in the floodplain of the Stillaguamish River. Hydrologic observations in the wetland included water-stained leaves. The wetland is also in a geomorphic position that is conducive to wetland conditions.
Rationale for Delineation	The boundary of Wetland 7/B was delineated along the topographic break of the swale.
Rationale for Local Rating	Wetland 7/B is rated Category III using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and low habitat (5) functions, scoring 19 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland 7/B has moderate potential to improve water quality due to the presence of persistent, ungrazed plants. The wetland receives untreated runoff from the adjacent agricultural field and roadway. Water quality improvement from Wetland 7/B is of high value to society because it discharges to Cook Slough, which is on the 303(d) list. It is located in the Stillaguamish River basin, which has a TMDL for temperature, bacteria, dissolved oxygen, pH, mercury, and arsenic.
Hydrologic	Wetland 7/B has low potential to reduce flooding because of its depth of storage, as observed in the field. The contributing basin consists of agricultural development that generates excess runoff, and the wetland received stormwater discharge. The wetland has the potential to reduce flooding downgradient, which is of high value to the surrounding community.
Habitat	Wetland 7/B lacks complex habitat features and has low diversity. The surrounding landscape has low potential to support habitat functions due to a high proportion of land used for agricultural purposes. The wetland has moderate habitat value due to the presence of a WDFW-designated biodiversity area for swan species (WDFW 2023b).

Table 10. Wetland 7/A Summary

<table>
<tr><th colspan="3">WETLAND 7/A – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.1949120, Longitude: -122.2413512</td></tr>
<tr><td colspan="2" rowspan="11">  </td><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>II</td></tr>
<tr><td>Water Quality</td><td>8</td></tr>
<tr><td>Hydrologic</td><td>8</td></tr>
<tr><td>Habitat</td><td>5</td></tr>
<tr><td>Local Rating</td><td>II</td></tr>
<tr><td>Local Buffer Width</td><td>75 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.72 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM/PFO</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 7/A-1, SP 7/A-3</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland 7/A is a depressional wetland located in a low point in a sheep pasture and adjacent to the BNSF Railway embankment. Vegetation is dominated by reed canary grass and black cottonwood (Populus balsamifera). The wetland meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland 7/A are mapped as hydric (Puyallup fine sandy loam). Wetland 7/A soils consist of depleted silty clay loam with redoximorphic features. Sampled soils meet the hydric soils indicators for a depleted matrix (F3).</td></tr>
<tr><td>Hydrology</td><td colspan="2">Primary sources of hydrology in Wetland 7/A include runoff from the sheep pasture, adjacent railroad embankment, and roadway. Hydrologic observations in the wetland included oxidized rhizospheres on living roots. The wetland is also located in the floodplain of the Stillaguamish River.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">All three wetland criteria are present, despite disturbance from the sheep pasture. The boundaries of Wetland 7/A were determined using the presence of hydric soil indicators and changes in vegetation community.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland 7/A is rated Category III using the current Ecology rating system because it provides high water quality (8), high hydrologic (8), and moderate habitat (5) functions, scoring 21 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland 7/A has high potential to improve water quality due to high cover of persistent plants and the lack of a surface outlet. The wetland received untreated runoff from an adjacent sheep pasture and stormwater runoff, which contributes to a high potential to improve water quality. Wetland 7/A discharges to a stream that is on the 303(d) list. The wetland is located within the Stillaguamish River basin, which has several TMDLs. Therefore, the wetland has high value to society for performing water quality functions.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland 7/A has moderate potential to reduce flooding and erosion due to the lack of an outlet and marks of ponding, which contribute to high storage capacity. Stormwater runoff and surrounding land use for agriculture provide high landscape potential to support hydrologic functions. The basin experiences flooding; therefore, this function performed by the wetland is of high value.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland 7/A has low potential to provide habitat due to low complexity, biodiversity, and lack of special habitat features. There is a moderate percentage of accessible habitat from the surrounding landscape. A swan species biodiversity area is identified by WDFW within 330 feet of the wetland (WDFW 2023b).</td></tr>
</table>

Table 11. Wetland 7/11 Summary

<table>
<tr><th colspan="4">WETLAND 7/11 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="3">Latitude: 48.1998814, Longitude: -122.2525300</td></tr>
<tr><td colspan="2" rowspan="12">  </td><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>III</td></tr>
<tr><td>Water Quality</td><td>7</td></tr>
<tr><td>Hydrologic</td><td>7</td></tr>
<tr><td>Habitat</td><td>3</td></tr>
<tr><td>Local Rating</td><td>III</td></tr>
<tr><td>Local Buffer Width</td><td>60 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.03 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 7/11-1</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 7/11-2</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="3">Wetland 7/11 is a depressional wetland located in a lower corner of an agricultural field adjacent to the BNSF railroad embankment and Sather Road. Vegetation in the wetland is dominated by reed canary grass. Vegetation in Wetland 7/11 meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="3">Soils in Wetland 7/11 are hydric (Puget silty clay loam). Wetland 7/11 soils consist of depleted matrices with redoximorphic features. Soils meet hydric soil indicators for a depleted matrix (F3).</td></tr>
<tr><td>Hydrology</td><td colspan="3">Primary sources of hydrology in Wetland 7/11 include runoff from the railroad embankment and the adjacent agricultural field. Hydrologic observations in the wetland included oxidized rhizospheres on living roots. The wetland is also located in the floodplain of the Stillaguamish River.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="3">The presence of all three wetland criteria informed the delineation of the wetland. Wetland 7/11 is located in a depression; the topographic break was also used to determine the boundary of the wetland.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="3">Wetland 7/11 is rated Category III using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and low habitat (3) functions, scoring 17 points on the wetland rating form.</td></tr>
<tr><th colspan="4">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="3">Wetland 7/11 has moderate potential to improve water quality due the lack of a surface outlet and high cover of persistent plants. The wetland receives untreated runoff from roads and adjacent agricultural fields. Improving water quality in the basin downgradient from Wetland 7/11 is of high value, as the wetland is located within the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list.</td></tr>
<tr><td>Hydrologic</td><td colspan="3">Wetland 7/11 has low potential to reduce flooding and erosion due to the lack of an outlet. Agricultural land use surrounding the wetland contributes to high landscape potential to perform hydrologic functions, as this increases runoff. This function is of high value, as the areas downgradient of the wetland are frequently subject to flooding.</td></tr>
<tr><td>Habitat</td><td colspan="3">Wetland 7/11 has low potential to provide habitat due to the lack of habitat complexity and diversity. There is no accessible habitat from the surrounding landscape because the wetland is isolated by agricultural land use. There are no priority habitats in the vicinity of the wetland, which results in a low habitat value for the wetland.</td></tr>
</table>

Table 12. Wetland 7/4 Summary

<table>
<tr><th colspan="3">WETLAND 7/4 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.1952951, Longitude: -122.2430546</td></tr>
<tr><td colspan="2" rowspan="11">  </td><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>III</td></tr>
<tr><td>Water Quality</td><td>6</td></tr>
<tr><td>Hydrologic</td><td>7</td></tr>
<tr><td>Habitat</td><td>6</td></tr>
<tr><td>Local Rating</td><td>III</td></tr>
<tr><td>Local Buffer Width</td><td>110 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.64 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM/PSS</td></tr>
<tr><td>HGM Classification</td><td>Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 7/4-1</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 7/4-2</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland 7/4 is a depressional wetland located within a pasture and along the toe of slope of the BNSF railroad embankment. Vegetation is dominated by reed canary grass; other species present include marsh bedstraw (Galium palustre) and giant horsetail. Vegetation in Wetland 7/4 meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland 7/4 are mapped as hydric (Puget silty clay loam). Wetland 10/4 soils consist of a dark surface layer underlain by layers of depleted matrices with redoximorphic features starting within 4 inches of the surface. Sampled soils meet hydric soil indicators for depleted below dark surface (A11) and depleted matrix (F3).</td></tr>
<tr><td>Hydrology</td><td colspan="2">Primary sources of hydrology in Wetland 7/4 include runoff from the adjacent pasture and the railroad embankment. Hydrology in the wetland is supported by the observation of oxidized rhizospheres on living roots. The wetland is also located in the floodplain of the Stillaguamish River.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">The boundaries of Wetland 7/4 were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland 7/4 is rated Category III using the current Ecology rating system because it provides moderate water quality (6), moderate hydrologic (7), and moderate habitat (6) functions, scoring 19 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland 7/4 has low potential to improve water quality due to an intermittently flowing outlet. Wetland 7/4 receives untreated runoff from adjacent agricultural fields and the BNSF railroad, which support the landscape potential of the wetland to perform this function. Wetland 7/4 discharges to Cook Slough, which is on the 303(d) list. The wetland is also located in the Stillaguamish River basin, which has several TMDLs. These factors indicate that improvements to water quality from the wetland are of high value in the watershed.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland 7/4 has a moderate potential to reduce flooding and erosion due to an intermittently flowing outlet and a relatively small contributing basin. Wetland 7/4 has some storage availability during wet periods, as marks of ponding were visible during the field visit. Surrounding agricultural land use increases runoff and provides moderate potential to support hydrologic functions. This function is of high value, as the subbasin downgradient experiences flooding.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland 7/4 has low potential to provide habitat due to low habitat complexity and lack of special habitat features. There is a high percentage of accessible habitat from the wetland, which contributes to a moderate landscape potential to support habitat functions. Priority habitats identified by WDFW in the vicinity of the wetland include riparian and in-stream areas, as well as a biodiversity area (WDFW 2023b).</td></tr>
</table>

Table 13. Wetland 7/4B Summary

WETLAND 7/4B – INFORMATION SUMMARY	
Location:	Latitude: 48.1947714, Longitude: -122.2421268

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	III
Water Quality	7
Hydrologic	7
Habitat	3
Local Rating	III
Local Buffer Width	60 feet
Wetland Size (Total)	0.17 acre
Cowardin Classification	PEM/PSS
HGM Classification	Depressional
Wetland Data Sheet(s)	SP 7/4B-1
Upland Data Sheet(s)	SP 7/4B-2

Dominant Vegetation	Wetland 7/4B is a depressional wetland generally located within a pasture and along the toe of slope of the BNSF railroad embankment. Dominant vegetation includes reed canary grass, common bent grass (*Agrostis capillaris*), Sitka willow (*Salix sitchensis*), and red-osier dogwood (*Cornus alba*). The vegetation in Wetland 7/4B is hydrophytic.
Soils	Soils in Wetland 7/4B are mapped as hydric (Puyallup find sandy loam). Wetland 7/4B soils consist of depleted soils with redoximorphic features. Sampled soils meet hydric soil indicators for a depleted matrix (F3).
Hydrology	Primary sources of hydrology in Wetland 7/4 include runoff from the adjacent pasture and the railroad embankment. Hydrologic observations in the wetland included oxidized rhizospheres on living roots. The wetland is also located in the floodplain of the Stillaguamish River.
Rationale for Delineation	The boundaries of Wetland 7/4B were recorded with a GPS device where the plant community shifted from hydrophytic vegetation to upland vegetation. The boundary was also determined by the presence of hydric soils.
Rationale for Local Rating	Wetland 7/4B is rated Category III using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and low habitat (3) functions, scoring 17 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland 7/4B has no surface outlet and moderate cover of persistent vegetation. The wetland receives untreated agricultural runoff. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.
Hydrologic	Wetland 7/4B has a high potential to reduce flooding and erosion due to a lack of a surface outlet, moderate storage capacity, and a moderate contributing basin-to-wetland ratio. The wetland has moderate potential to perform this function due to excess runoff from agricultural activity in the contributing basin. This function is of high value to society, as the area downgradient is subject to flooding.
Habitat	Wetland 7/4B has low potential to provide habitat due to low complexity and lack of special habitat features. There is no accessible habitat from the surrounding landscape because the wetland is isolated by agricultural fields and a railroad. The wetland is not within the vicinity of priority habitats, indicating that it has low value to existing habitat in the vicinity (WDFW 2023b).

Table 14. Wetland 7/2 Summary

<table>
<tr><th colspan="4">WETLAND 7/2 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="3">Latitude: 48.1932112, Longitude: -122.2405402</td></tr>
<tr><td colspan="2" rowspan="11">  </td><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>II</td></tr>
<tr><td>Water Quality</td><td>7</td></tr>
<tr><td>Hydrologic</td><td>7</td></tr>
<tr><td>Habitat</td><td>6</td></tr>
<tr><td>Local Rating</td><td>II</td></tr>
<tr><td>Local Buffer Width</td><td>110 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.30 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM</td></tr>
<tr><td>HGM Classification</td><td>Riverine</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 7/2-1</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 7/2-2</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="3">Wetland 7/2 is a riverine wetland that extends along the toe of slope below the railroad embankment and into an agricultural field. Dominant vegetation includes reed canary grass and Himalayan blackberry. Vegetation in Wetland 7/2 meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="3">Soils in Wetland 7/2 are mapped as hydric (Puget silty clay loam). Wetland 7/2 soils consist of a dark matrices with redoximorphic features. Sampled soils meet hydric soil indicators for redox dark surface (F6).</td></tr>
<tr><td>Hydrology</td><td colspan="3">Wetland 7/2 is located above the OHWM of Portage Creek. Overbank flooding from Portage Creek is the primary source of hydrology in the wetland. Wetland 7/2 is located in the floodplain of Portage Creek. A positive hydrology determination for the wetland was supported by the FAC-Neutral test and the location of the wetland in a geomorphic position that is conducive to wetland conditions, along the bank of a stream.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="3">The boundaries of Wetland 7/2 were recorded with a GPS device based on the presence of all three wetland criteria. The west and north boundaries of the wetland were delineated along the OHWM of Portage Creek. The remainder of the boundary was delineated based on the presence of hydric soils and changes in vegetation from hydrophytic species to upland species.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="3">Wetland 7/2 is rated Category II using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and moderate habitat (6) functions, scoring 20 points on the wetland rating form.</td></tr>
<tr><th colspan="4">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="3">Wetland 7/2 has moderate potential to support water quality functions due to the presence of dense, herbaceous vegetation. The basin in which the wetland is located is dominated by agricultural development, which contributes to a moderate landscape potential to perform this function. Wetland 7/2 is located along Portage Creek, which discharges to South Slough, which is on the 303(d) list. It is also located in the Stillaguamish River basin, which has several TMDLs. Therefore, this function is of high value in the watershed.</td></tr>
<tr><td>Hydrologic</td><td colspan="3">Wetland 7/2 has moderate potential to reduce flooding and erosion due to moderate overbank storage potential and presence of vegetation that reduces water velocity. Portage Creek is down cut, which contributes to moderate landscape potential to support this function. The basin downgradient experiences flooding. Therefore, this function provided by the wetland is of high value to society.</td></tr>
</table>

Habitat	Wetland 7/2 has low potential to provide habitat due to low complexity and low biodiversity. There is moderate proportion of accessible habitat within one kilometer of the wetland. The wetland is in the vicinity of WDFW priority habitat and riparian and instream habitats (WDFW 2023b).

Table 15. Wetland 7/1 Summary

WETLAND 7/1 – INFORMATION SUMMARY		
Location:	Latitude: 48.1916599, Longitude: -122.2408041	
	**Local Jurisdiction**	Snohomish County
	WRIA	5
	Ecology Rating (Hruby 2014)	II
	Water Quality	7
	Hydrologic	7
	Habitat	8
	Local Rating	II
	Local Buffer Width	225 feet
	Wetland Size (Total)	4.57 acres
	Cowardin Classification	PEM, PSS
	HGM Classification	Depressional
	Wetland Data Sheet(s)	SP 7/1-1, SP 7/1-4, SP 7/1-6, SP 7/1-8
	Upland Data Sheet(s)	SP 7/1-2, SP 7/1-3, SP 7/1-5, SP 7/1-7, SP 7/1-9
Dominant Vegetation	Wetland 7/1 is a depressional wetland with slope components along the south portion of the wetland. Dominant vegetation in the depressional, emergent portion is dominated by tall fescue (*Schedonorus arundinaceus*), small-fruited bullrush (*Scirpus microcarpus*), and reed canary grass. The sloped portion of the wetland included shrub species: salmonberry (*Rubus spectabilis*), swamp gooseberry (*Ribes lacustre*), and Sitka willow. Vegetation in Wetland 7/1 is hydrophytic.	
Soils	Soils in Wetland 7/1 are mapped as Alderwood-Everett gravelly sandy loam (not hydric) and Puget silty clay loam (hydric). Wetland 7/1 soils in the depressional portion consist of layers of depleted matrices with redoximorphic features. Soils in the slope portion consist of mucky sandy loam soils. Soils in Wetland 7/1 meet hydric soil indicators for a depleted matrix (F3), and loamy mucky mineral (F1).	
Hydrology	Primary sources of hydrology in Wetland 7/1 include groundwater expression through seeps along the slope, and high groundwater table along the depression. Hydrologic observations in the wetland included saturated soils in the upper 12 inches and oxidized rhizospheres observed on living roots. Wetland 7/1 is also located in the Stillaguamish River floodplain.	
Rationale for Delineation	The presence of all three wetland criteria informed the delineation of the wetland. The boundaries of Wetland 7/1 were recorded with a GPS device where indicators of soils transitioned from upland soil to hydric soil characteristics and at topographic changes.	
Rationale for Local Rating	Wetland 7/1 is rated Category II using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and high habitat (8) functions, scoring 22 points on the wetland rating form.	
Wetland Functions Summary		
Water Quality	Wetland 7/1 has low cover of persistent, ungrazed vegetation due to agriculture and has low potential to improve water quality. Agriculture and septic systems in the vicinity contribute to high landscape potential to support this function. The wetland discharges to a 303(d)-listed resource and is located in the Stillaguamish River basin, which has several TMDLs. Therefore, this function is of high value in the watershed.	

Hydrologic	Wetland 7/1 has moderate potential to reduce flooding and erosion due to moderate storage capacity, and low basin to wetland area ratio. The surrounding landscape includes agricultural development, which contributes to excess runoff. The basin downgradient experiences flooding, which results in high value of this function to society.
Habitat	Wetland 7/1 has moderate habitat potential due to moderate complexity and diversity, and special habitat features. A high proportion of the surrounding landscape is accessible habitat. The wetland is within the vicinity of multiple priority habitats (WDFW 2023b).

Table 16. Wetland 6/B Summary

WETLAND 6/B – INFORMATION SUMMARY	
Location:	Latitude: 48.1851246, Longitude: -122.2350646

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	II
Water Quality	7
Hydrologic	9
Habitat	6
Local Rating	II
Local Buffer Width	110 feet
Wetland Size (Total)	0.84 acre
Cowardin Classification	PEM/PSS
HGM Classification	Depressional
Wetland Data Sheet(s)	SP 6/B-1
Upland Data Sheet(s)	SP 6/B-2

Dominant Vegetation	Wetland 6/B is a depressional wetland confined by a road prism and the BNSF railroad embankment. Dominant vegetation consists of reed canary grass. Vegetation in Wetland 6/B meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 6/B are mapped as Lynnwood loamy sand (not hydric). Soils in the wetland consist of dark surface sandy loam underlain by a depleted matrix with redoximorphic features. Soils in Wetland 6/B meet the hydric soil indicator for depleted below dark surface (A11).
Hydrology	Primary sources of hydrology in Wetland 6/B include runoff and high ground-water table. Hydrologic observations in the wetland included the presence of ground water and saturation within the upper 12 inches of the soil profile.
Rationale for Delineation	The boundaries of Wetland 6/B were recorded with a GPS device. The boundary of the wetland was defined by the topographic break of the road prism and railroad embankment.
Rationale for Local Rating	Wetland 6/B is rated Category II using the current Ecology rating system because it provides moderate water quality (7), high hydrologic (9), and moderate habitat (6) functions, scoring 22 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland 6/B has moderate potential to improve water quality because there is no surface water outlet and high cover of persistent, ungrazed vegetation. The wetland receives untreated runoff from the railroad and stormwater, which contributes to a moderate landscape potential to improve water quality. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.

Hydrologic	Wetland 6/B has high potential to reduce flooding and erosion due to a lack of a surface outlet, moderate storage capacity, and low contributing basin-to-wetlands size ratio. The surrounding landscape includes roadways and agricultural fields, which contribute to excess runoff. The basin downgradient experiences flooding; therefore, this function provided by the wetland is of high value to society.
Habitat	Wetland 6/B has limited habitat potential due to its low habitat complexity and lack of special habitat features. There is no accessible habitat from the surrounding landscape due to agriculture and the BNSF railroad. Multiple WDFW priority habitats are present in the vicinity of the wetland, which contributes to a high value of the habitat provided by the wetland (WDFW 2023b).

Table 17. Wetland 6/C Summary

WETLAND 6/C – INFORMATION SUMMARY		
Location:	Latitude: 48.1849485, Longitude: -122.2347592	
	**Local Jurisdiction**	Snohomish County
	WRIA	5
	Ecology Rating (Hruby 2014)	II
	Water Quality	7
	Hydrologic	8
	Habitat	5
	Local Rating	II
	Local Buffer Width	75 feet
	Wetland Size (Total)	0.09 acre
	Cowardin Classification	PEM
	HGM Classification	Depressional
	Wetland Data Sheet(s)	SP 6/C-1
	Upland Data Sheet(s)	SP 6/C-2
Dominant Vegetation	Wetland 6/C is a depressional wetland that is confined to a swale below a road prism. Dominant vegetation consists of reed canary grass. Other vegetation includes giant horsetail and stinging nettle (*Urtica dioica*). Vegetation in Wetland 6/C meets criteria for hydrophytic vegetation.	
Soils	Soils in Wetland 6/C are mapped as not hydric (Lynnwood loamy sand). Wetland 6/C soils consist of a dark layer of clay loam underlain by a depleted matrix with redoximorphic features. Sampled soils meet the hydric soil indicators for depleted below dark surfaces (A11) and a depleted matrix (F3).	
Hydrology	Primary sources of hydrology in Wetland 6/C include stormwater runoff and high ground-water table. Hydrologic observations in the wetland included oxidized rhizospheres on living roots.	
Rationale for Delineation	The boundaries of Wetland 6/C were recorded with a GPS device along the toe of slope of the swale.	
Rationale for Local Rating	Wetland 6/C is rated Category II using the current Ecology rating system because it provides moderate water quality (7), high hydrologic (8), and low habitat (5) functions, scoring 20 points on the wetland rating form.	
Wetland Functions Summary		
Water Quality	Wetland 6/C has a moderate potential to improve water quality because it lacks a surface outlet and has high cover of persistent, ungrazed vegetation. The surrounding area contributes contaminants to the wetland from untreated stormwater and agricultural runoff. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.	

Hydrologic	Wetland 6/C has a moderate potential to reduce flooding and erosion due to the lack of a surface outlet and a moderate storage capacity. The wetland is located in a landscape with stormwater and excess surface runoff that can be attenuated by the wetland. This function is valuable to the community, as the areas downgradient experience flooding.
Habitat	Wetland 6/C has limited wildlife habitat potential due to its low habitat complexity, biodiversity, and lack of special habitat features. There is no accessible habitat from the surrounding landscape. The wetland is within 330 feet of the riparian zone of Fish Creek, which contributes to moderate habitat value of the wetland.

Table 18. Wetland 6/11 Summary

WETLAND 6/11 – INFORMATION SUMMARY	
Location:	Latitude: 48.1887060, Longitude: -122.2373350

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	II
Water Quality	8
Hydrologic	7
Habitat	6
Local Rating	II
Local Buffer Width	110 feet
Wetland Size (Total)	0.27 acre
Cowardin Classification	PEM/PSS
HGM Classification	Depressional
Wetland Data Sheet(s)	SP 6/11-1
Upland Data Sheet(s)	SP 6/11-2

Dominant Vegetation	Wetland 6/11 is a depressional wetland located below the toe of slope of the BNSF railroad embankment and adjacent road prism. Vegetation in the wetland is dominated by reed canary grass, giant horsetail, and hardhack (*Spiraea douglasii*). Vegetation in Wetland 6/11 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 6/11 are mapped as not hydric (Alderwood-Everett gravelly sandy loam). Wetland 6/11 soils consist of a surface layer of dark loam underlain by a depleted matrix with redoximorphic features. Soils in the wetland meet hydric soil indicators for a depleted matrix (F3).
Hydrology	The primary source of hydrology in Wetland 6/11 is ponded water that is created by a small beaver dam at the north end of the wetland. Primary hydrologic indicators at the boundary of the wetland include saturated soils and ground-water table within the upper 12 inches.
Rationale for Delineation	The boundaries of Wetland 6/11 follow the topography of the depression where indicators of wetland vegetation, hydric soil, and wetland hydrology are present.
Rationale for Local Rating	Wetland 6/11 is rated Category II using the current Ecology rating system because it provides high water quality (8), moderate hydrologic (7), and moderate habitat (6) functions, scoring 21 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland 6/11 has moderate potential to improve water quality because it has no surface outlet and has areas of seasonal ponding that can trap sediment and pollutants. The surrounding area contributes contaminants to the wetland from untreated stormwater runoff and adjacent septic systems. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.
Hydrologic	Wetland 6/11 has moderate potential to reduce flooding and erosion due to the lack of a surface outlet and moderate storage capacity. The wetland is located in a landscape with excess surface runoff that can be attenuated by the wetland. This function is valuable to the community, as the areas downgradient experience flooding.
Habitat	Wetland 6/11 has moderate potential to support wildlife habitat due to moderate habitat complexity and special habitat features. There is a high proportion of accessible habitat from the surrounding landscape. The wetland is not within the vicinity of priority habitats, indicating that this wetland has low value to existing habitat in the vicinity (WDFW 2023b).

Table 19. Wetland 6/9 Summary

WETLAND 6/9 – INFORMATION SUMMARY	
Location:	Latitude: 48.1866609, Longitude: -122.2363187

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	II
Water Quality	8
Hydrologic	7
Habitat	6
Local Rating	II
Local Buffer Width	110 feet
Wetland Size (Total)	1.87 acres
Cowardin Classification	PEM, PSS
HGM Classification	Depressional
Wetland Data Sheet(s)	SP 6/9-1, SP 6/9-3
Upland Data Sheet(s)	SP 6/9-2, SP 6/9-4

Dominant Vegetation	Wetland 6/9 is a depressional wetland located below the toe of slope of the BNSF railroad embankment. Dominant vegetation consists of reed canary grass, salmonberry, and Pacific willow (*Salix lasiandra*). Vegetation in Wetland 6/9 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland 6/9 are mapped as Alderwood-Everett gravelly sandy loam (not hydric). Wetland 6/9 soils consist of a surface dark layer underlain by a depleted matrix with redoximorphic features. Soils in Wetland 6/9 meet hydric soil indicators for a depleted matrix (F3) and depleted below dark surface (A11).
Hydrology	Primary sources of hydrology in Wetland 6/9 include runoff from the surrounding area. Positive hydrology determination in the wetland was supported by the observation of saturation within the upper 12 inches, and areas of standing water.
Rationale for Delineation	The boundaries of Wetland 6/9 were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present. The boundary was generally along a topographic break of the depression.
Rationale for Local Rating	Wetland 6/9 is rated Category III using the current Ecology rating system because it provides high water quality (8), moderate hydrologic (7), and moderate habitat (6) functions, scoring 21 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland 6/9 has moderate potential to improve water quality because it has a highly constricted outlet and areas of persistent vegetation. The surrounding area contributes contaminants to the wetland from stormwater runoff and adjacent septic systems. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.
Hydrologic	Wetland 6/9 has moderate potential to reduce flooding and erosion due to the highly constricted outlet and high storage capacity. The wetland is located in a landscape with more excess surface runoff than can be attenuated by the wetland. This function is valuable to the community, as the areas downgradient experience flooding.
Habitat	Wetland 6/9 has moderate potential to support wildlife habitat due to its habitat complexity and special habitat features. There is a high proportion of accessible habitat in the surrounding 1 kilometer. The wetland is not within the vicinity of priority habitats, indicating that this wetland has low value to existing habitat in the vicinity (WDFW 2023b).

Table 20. Wetland XCC42 Summary

WETLAND XCC42 – INFORMATION SUMMARY	
Location:	Latitude: 48.1733662, Longitude: -122.2260549

Local Jurisdiction	Snohomish County
WRIA	5
Ecology Rating (Hruby 2014)	II
Water Quality	6
Hydrologic	7
Habitat	7
Local Rating	II
Local Buffer Width	110 feet
Wetland Size (Total)	0.50 acre
Cowardin Classification	PEM, PSS, PFO
HGM Classification	Slope
Wetland Data Sheet(s)	SP XCC42-1, SP XCC42-3
Upland Data Sheet(s)	SP XCC42-2, SP XCC42-4

Dominant Vegetation	Wetland XCC42 is a slope wetland that is located along the BNSF embankment and Stream XCC42. Dominant vegetation consists of skunk cabbage (*Lysichiton americanus*), lady fern (*Athyrium cyclosorum*), Pacific willow, salmonberry, twinberry (*Lonicera involucrata*), reed canary grass, and Himalayan blackberry. Vegetation in Wetland XCC42 meets criteria for hydrophytic vegetation.
Soils	Soils in Wetland XCC42 are mapped as Lynnwood loamy sand (not hydric). Wetland XCC42 soils consist of a dark surface layer underlain by a depleted matrix with redoximorphic features. Soils in Wetland XCC42 meet hydric soil indicators for a depleted matrix (F3), redox dark surface (F6), and depleted below dark surface (A11).
Hydrology	Primary sources of hydrology in Wetland XCC42 include groundwater expression from along the hillslope. Positive hydrology determination was supported by the observations of a water table and saturation within the upper 12 inches of soil, and areas with standing water.
Rationale for Delineation	The boundaries of Wetland XCC42 were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present. The boundary was generally along a topographic break and the OHWM of Stream XCC42.
Rationale for Local Rating	Wetland XCC42 is rated Category III using the current Ecology rating system because it provides moderate water quality (6), moderate hydrologic (7), and moderate habitat (7) functions, scoring 20 points on the wetland rating form.
Wetland Functions Summary	
Water Quality	Wetland XCC42 has low potential to improve water quality because it has a relatively steep slope. The surrounding area contributes contaminants to the wetland from agricultural runoff and stormwater runoff. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.
Hydrologic	Wetland XCC42 has moderate potential to reduce flooding and erosion due to high cover of dense, uncut, rigid vegetation. The wetland is located in a landscape with more excess surface runoff than can be attenuated by the wetland. This function is valuable to the community, as the areas downgradient experience flooding.
Habitat	Wetland XCC42 has moderate potential to support wildlife habitat due to habitat complexity and special habitat features. A high proportion of the landscape within 1 kilometer of the wetland is accessible habitat. The wetland is also in the vicinity of riparian and instream habitat, which indicates that the wetland has moderate habitat value.

Table 21. Wetland XCC42B Summary

<table>
<tr><th colspan="3">WETLAND XCC42B – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.1738257, Longitude: -122.2265554</td></tr>
<tr><td colspan="2">  </td><td>
<table>
<tr><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>II</td></tr>
<tr><td>Water Quality</td><td>7</td></tr>
<tr><td>Hydrologic</td><td>7</td></tr>
<tr><td>Habitat</td><td>7</td></tr>
<tr><td>Local Rating</td><td>II</td></tr>
<tr><td>Local Buffer Width</td><td>110 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.01 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PSS, PFO</td></tr>
<tr><td>HGM Classification</td><td>Riverine</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP XCC42B-2</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP XCC42B-1</td></tr>
</table>
</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland XCC42B is a riverine wetland that is located along the OHWM of Stream XCC42. Dominant vegetation consists of big flower fringecup (Tellima grandiflora), skunk cabbage, salmonberry, and red-osier dogwood. Vegetation in Wetland XCC42B meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland XCC42B are mapped as Lynnwood loamy sand, which is not a hydric soil. Wetland XCC42B soils consist of dark, mucky-modified sandy loam. Soils in Wetland XCC42B meet hydric soil indicators for loamy mucky mineral (F1).</td></tr>
<tr><td>Hydrology</td><td colspan="2">Hydrology in Wetland XCC42B is from overbank flooding from Stream XCC42. Primary wetland hydrology indicators include water table and saturation within the upper 12 inches of soil, which support a positive hydrology determination.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">The boundaries of Wetland XCC42B were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present. The boundary was generally along a topographic break and the OHWM of Stream XCC42.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland XCC42B is rated Category II using the current Ecology rating system because it provides moderate water quality (7), moderate hydrologic (7), and moderate habitat (7) functions, scoring 21 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland XCC42B has moderate potential to improve water quality because it has dense cover of trees and shrubs. The surrounding area contributes contaminants to the wetland from stormwater runoff and agricultural development in the contributing basin. The wetland is along Stream XCC42, which discharges to Fish Creek, which is on the 303(d) list. It is located in the Stillaguamish River basin, which has several TMDLs.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland XCC42B has moderate potential to reduce flooding and erosion due to dense cover of trees and shrubs. The surrounding landscape has moderate potential to support hydrologic function because the stream is not down-cut or controlled by dams. This function is valuable to the community, as the areas downgradient experience flooding.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland XCC42B has moderate potential to support wildlife habitat due to moderate habitat complexity and special habitat features. The landscape within 1 kilometer of the wetland has a high proportion of accessible habitat. The wetland is also in the vicinity of riparian and instream habitat, which indicates that the wetland has moderate habitat value.</td></tr>
</table>

Table 22. Wetland 5/5 Summary

<table>
<tr><th colspan="3">WETLAND 5/5 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.1704380, Longitude: -122.2226708</td></tr>
<tr><td colspan="2">  </td><td>
<table>
<tr><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>III</td></tr>
<tr><td>Water Quality</td><td>5</td></tr>
<tr><td>Hydrologic</td><td>6</td></tr>
<tr><td>Habitat</td><td>6</td></tr>
<tr><td>Local Rating</td><td>III</td></tr>
<tr><td>Local Buffer Width</td><td>60 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>0.01 acre</td></tr>
<tr><td>Cowardin Classification</td><td>PEM, PSS</td></tr>
<tr><td>HGM Classification</td><td>Slope</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 5/5-1</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 5/5-2</td></tr>
</table>
</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland 5/5 is a slope wetland with areas of emergent and shrub vegetation. Dominant vegetation consists of sedges (Carex spp.), fringed willow herb (Epilobium ciliatum), salmonberry, and twinberry. Vegetation in Wetland 5/5 meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland 5/5 are mapped as Lynnwood loamy sand (not hydric). Wetland 5/5 soils consist of a dark surface layer underlain by a depleted matrix with redoximorphic features. Soils in Wetland 5/5 meet hydric soil indicators for a depleted matrix (F3) and depleted below dark surface (A11).</td></tr>
<tr><td>Hydrology</td><td colspan="2">The primary source of hydrology in Wetland 5/5 is a high groundwater table along the slope. Saturation and groundwater were observed within the upper 12 inches of soil, which supports a positive hydrology determination.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">The boundaries of Wetland 5/5 were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present. The boundary was generally along a topographic break where vegetation shifted to upland plant-dominated composition.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland 5/5 is rated Category III using the current Ecology rating system because it provides low water quality (5), moderate hydrologic (6), and moderate habitat (6) functions, scoring 17 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland 5/5 has low potential to improve water quality because it has steep slopes and lacks organic or clay soils. There is low landscape potential to support this function due to a lack of contaminants discharged to the wetland from the surrounding landscape. The wetland is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland 5/5 has moderate potential to reduce flooding and erosion due to dense cover of uncut, rigid vegetation. There is low landscape potential to support this function because the surrounding landscape does not have excess runoff. This function is valuable to the community, as the areas downgradient experience flooding.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland 5/5 has low potential to support wildlife habitat due to its lack of habitat complexity and moderate biodiversity. The landscape within 1 kilometer of the wetland has a high proportion of accessible habitat. The wetland is also in the vicinity of riparian habitat, which indicates that the wetland has moderate habitat value.</td></tr>
</table>

Table 23. Wetland 5/4 Summary

<table>
<tr><th colspan="3">WETLAND 5/4 – INFORMATION SUMMARY</th></tr>
<tr><td>Location:</td><td colspan="2">Latitude: 48.1642670, Longitude: -122.2174082</td></tr>
<tr><td colspan="2">  </td><td>
<table>
<tr><td>Local Jurisdiction</td><td>Snohomish County</td></tr>
<tr><td>WRIA</td><td>5</td></tr>
<tr><td>Ecology Rating (Hruby 2014)</td><td>II</td></tr>
<tr><td>Water Quality</td><td>8</td></tr>
<tr><td>Hydrologic</td><td>6</td></tr>
<tr><td>Habitat</td><td>8</td></tr>
<tr><td>Local Rating</td><td>II</td></tr>
<tr><td>Local Buffer Width</td><td>225 feet</td></tr>
<tr><td>Wetland Size (Total)</td><td>10.01 acres</td></tr>
<tr><td>Cowardin Classification</td><td>PEM, PSS, PFO</td></tr>
<tr><td>HGM Classification</td><td>Riverine/Depressional</td></tr>
<tr><td>Wetland Data Sheet(s)</td><td>SP 5/4-1, SP 5/4-3</td></tr>
<tr><td>Upland Data Sheet(s)</td><td>SP 5/4-2, SP 5/4-4</td></tr>
</table>
</td></tr>
<tr><td>Dominant Vegetation</td><td colspan="2">Wetland 5/4 is a wetland that is located along both banks of Fish Creek. The wetland consists of depressional and riverine components. Dominant vegetation consists of reed canary grass and salmonberry. Other vegetation present includes hardhack, Himalayan blackberry, and twinberry. Vegetation in Wetland 5/4 meets criteria for hydrophytic vegetation.</td></tr>
<tr><td>Soils</td><td colspan="2">Soils in Wetland 5/4 are mapped as Lynnwood loamy sand, which is not a hydric soil. Wetland 5/4 soils consist of a dark surface layer with redoximorphic features underlain by a depleted matrix with redoximorphic features. Soils in Wetland 5/4 meet hydric soil indicators for a depleted matrix (F3), redox dark surface (F6), and depleted below dark surface (A11).</td></tr>
<tr><td>Hydrology</td><td colspan="2">The primary source of hydrology in Wetland 5/4 is overbank flooding from Fish Creek. Within the study area, hydrologic observations in the wetland included a water table and saturation within the upper 12 inches of soil.</td></tr>
<tr><td>Rationale for Delineation</td><td colspan="2">The boundaries of Wetland 5/4 were recorded with a GPS device where indicators of wetland vegetation, hydric soil, and wetland hydrology were present. The boundary was generally followed a shift in vegetation community and change in topography.</td></tr>
<tr><td>Rationale for Local Rating</td><td colspan="2">Wetland 5/4 is rated as a depressional wetland, following the guidance for wetlands with multiple HGM classes. It is rated Category III using the current Ecology rating system because it provides high water quality (8), moderate hydrologic (6), and high habitat (8) functions, scoring 22 points on the wetland rating form.</td></tr>
<tr><th colspan="3">Wetland Functions Summary</th></tr>
<tr><td>Water Quality</td><td colspan="2">Wetland 5/4 has high potential to improve water quality because the majority of the wetland has dense, persistent vegetation and clay soils are present within the wetland. The surrounding area contributes contaminants to the wetland from runoff along the railroad track and adjacent septic systems. The wetland is located along Fish Creek, which is on the 303(d) list; additionally, it is located in the Stillaguamish River basin, which has several TMDLs and aquatic resources on the 303(d) list. Therefore, this function is of high value in the watershed.</td></tr>
<tr><td>Hydrologic</td><td colspan="2">Wetland 5/4 has low potential to reduce flooding and erosion due to a permanently flowing outlet via Fish Creek and a relatively large contributing basin. The wetland is located in a landscape with more excess surface runoff than can be attenuated by the wetland, which contributes to moderate landscape potential to perform this function. This function is valuable to the community, as the areas downgradient experience flooding.</td></tr>
<tr><td>Habitat</td><td colspan="2">Wetland 5/4 has moderate potential to support wildlife habitat due to multiple Cowardin vegetation classes, multiple hydroperiods, and moderate biodiversity. There is a high proportion of relatively undisturbed and accessible habitat within 1 kilometer of the wetland, which contributes to high potential to support habitat function. The wetland is also in the vicinity of several priority habitats as identified by WDFW (WDFW 2023b).</td></tr>
</table>

4.2 Fish and Wildlife Habitat Conservation Areas

4.2.1 Waterbodies

The study area is located in the Armstrong Creek-Stillaguamish River basin (HUC 171100080303) of the Stillaguamish River (WRIA #5). No lakes or marine waters are located in the study area.

HDR biologists delineated the OHWM of six waterbodies within the study area. Table 24 summarizes the streams and their jurisdictional classifications, and a description of each stream is summarized in Table 25 through Table 30.

Table 24. Summary of Waterbodies in the Project Study Area (from North to South)

Waterbody Name	Tributary To	Stream Rating in Study Area[a]	Jurisdiction	Local Jurisdiction Stream Buffer Width (feet) [b]
Stillaguamish River	Port Susan	S	Snohomish County	150
Cook Slough	Stillaguamish River	S	Snohomish County	150
Portage Creek	Cook Slough	S	Snohomish County	150
Stream 7/1	Stillaguamish	F	Snohomish County	150
Stream XCC42	Fish Creek	F	Snohomish County	150
Fish Creek	Portage Creek	F	Snohomish County	150

[a] Stream types were assigned based on the typing criteria described in WAC 222-16-030 and SCC 30.62A.320. Fish presence was determined based on SWIFD (2023) and field observation.

[b] Buffer widths are assigned based on stream types per SCC 30.62A.320 and SCC 30.62A.320.

Table 25. Stream Information Summary—Stillaguamish River

STREAM INFORMATION SUMMARY		
	**Stream Name**	Stillaguamish River
	WRIA	5
	WA Stream Catalog #	67313
	Local Jurisdiction	Snohomish County
	DNR Stream Type	S
	Local Stream Rating	S
	Buffer Width	150 feet
Location of Stream Relative to Project Corridor	The Stillaguamish River is located between existing Poles 8/7 and 8/6. The Stillaguamish River is approximately 380 feet wide at the OHWM where the transmission corridor crosses the river.	
Connectivity (where stream flows from/to)	The Stillaguamish River originates in the Cascade Mountains. The majority of the flows were diverted into Hat Slough by the U.S. Army Corps of Engineers in the 1940s (Parametrix 2010). Hat Slough eventually drains into Port Susan approximately 6 miles from the transmission line corridor. The remainder of the river flows north through the Old Stillaguamish Channel, which discharges to Puget Sound approximately 5 miles west of the project area. It flows east to west through the transmission line corridor.	
Riparian/Buffer Condition	The Stillaguamish River flows between agricultural fields. Within the study area, the riparian buffer on the left bank consists of Himalayan blackberry, reed canary grass, knotweed (*Reynoutria x bohemica*), and Pacific willow. The right bank consists of Himalayan blackberry, red alder (*Alnus rubra*), willows, salmonberry, and reed canary grass. There is limited canopy cover, and some large woody debris is present in the study area.	
Documented Fish Use	Residential Coastal Cutthroat Trout (*Oncorhynchus clarkii*), Chum Salmon (*O. keta*), Coho Salmon (*O. kisutch*), Pink Salmon (*O. gorbuscha*), Chinook Salmon (*0. tshawytscha*), Sockeye Salmon (*O. nerka*), rainbow trout (*O. mykiss*), steelhead (*O. mykiss*), and Bull Trout (*Salvelinus confluentus*) are documented to be present in the reach of the Stillaguamish River near the study area (SWIFD 2023; WDFW 2023b).	

Table 26. Stream Information Summary—Cook Slough

STREAM INFORMATION SUMMARY		
	**Stream Name**	Cook Slough
	WRIA	5
	WA Stream Catalog #	67611
	Local Jurisdiction	Snohomish County
	DNR Stream Type	S
	Local Stream Rating	S
	Buffer Width	150 feet
Location of Stream Relative to Project Corridor	Cook Slough is located between the existing Poles 7/6 and 7/5. The existing transmission line extends across Cook Slough to the south of the BNSF railroad bridge; the proposed transmission line will span Cook Slough to the north of the BNSF railroad bridge, along Pioneer Highway. Cook Slough is approximately 230 feet wide at the OHWM at the existing span; it is approximately 115 feet wide at the proposed span.	
Connectivity (where stream flows from/to)	Cook Slough is a fork of the Stillaguamish River and flows northeast to southwest through the project area.	
Riparian/Buffer Condition	Within the study area, Cook Slough is bordered by active agricultural fields. Riparian vegetation in the study area includes Himalayan blackberry, reed canary grass, red alder, and willows. There is limited canopy cover along the banks, and some areas along the banks include gravel bars. Large wood debris is present within the study area.	
Documented Fish Use	Residential Coastal Cutthroat Trout, Chum Salmon, Coho Salmon, Pink Salmon, Chinook Salmon, Sockeye Salmon, steelhead, and Bull Trout are documented as present in Cook Slough (SWIFD 2023; WDFW 2023b).	

Table 27. Stream Information Summary—Portage Creek

STREAM INFORMATION SUMMARY		
	**Stream Name**	Portage Creek
	WRIA	5
	WA Stream Catalog #	67763
	Local Jurisdiction	Snohomish County
	DNR Stream Type	S
	Local Stream Rating	S
	Buffer Width	150 feet
Location of Stream Relative to Project Corridor	Portage Creek is located between the existing Poles 7/3 and 7/2. Portage Creek is approximately 70 feet wide at the OHWM within the study area.	
Connectivity (where stream flows from/to)	Portage Creek is a tributary to Cook Slough and flows northeast to southwest through the project area.	
Riparian/Buffer Condition	Portage Creek flows between a hay field and sheep pastures in the study area. Riparian vegetation consists of reed canary grass, Himalayan blackberry, willows, and knotweed. Wetland 7/2 is located along the OHWM of the left bank and extends above the OHWM and into the adjacent hay field. Wetland 7/1 also flows to Portage Creek, downstream of Wetland 7/2 and along the left bank. There is limited canopy cover within the study area. Large woody debris was not observed within the study area. Portage Creek has a silt bed that is mostly vegetated.	
Documented Fish Use	Residential Coastal Cutthroat Trout, Chum Salmon, Coho Salmon, Pink Salmon, Chinook Salmon, Sockeye Salmon, steelhead, and Bull Trout are documented as present in Portage Creek (SWIFD 2023; WDFW 2023b).	

Table 28. Stream Information Summary—Stream 7/1

STREAM INFORMATION SUMMARY		
	**Stream Name**	Stream 7/1
	WRIA	5
	WA Stream Catalog #	67774
	Local Jurisdiction	Snohomish County
	DNR Stream Type	F
	Local Stream Rating	Untyped
	Buffer Width	150 feet
Location of Stream Relative to Project Corridor	Stream 7/1 is along the proposed access route to the existing Poles 7/2 and 7/1. It is along the edge of an active agricultural field. Stream 7/1 is approximately 5 feet wide at the OHWM within the study area.	
Connectivity (where stream flows from/to)	Stream 7/1 is a tributary of Cook Slough and flows east to west through the project area.	
Riparian/Buffer Condition	Stream 7/1 runs along an active agricultural field. It originates along the toe of slope of a steep hill to the south; Wetland 7/1 is located along the slope and drains to Stream 7/1. Stream 7/1 appears to be maintained to drain the adjacent agricultural field. The riparian vegetation includes reed canary grass, tall fescue (*Schedonorus arundinaceus*), and small-fruited bullrush. No canopy cover or large woody debris was present in the study area.	
Documented Fish Use	Chum Salmon, Coho Salmon, Chinook Salmon, Pink Salmon, and steelhead are documented as present in Stream 7/1 (SWIFD 2023). This stream is not mapped on PHS (WDFW 2023b).	

Table 29. Stream Information Summary—Stream XCC42

STREAM INFORMATION SUMMARY		
	**Stream Name**	Stream XCC42
	WRIA	5
	WA Stream Catalog #	N/A
	Local Jurisdiction	Snohomish County
	DNR Stream Type	F
	Local Stream Rating	Unmapped
	Buffer Width	150 feet
Location of Stream Relative to Project Corridor	Stream XCC42 is located between the existing Poles XCC42 and 5/7. It flows southwest to northeast within the project area. Stream XCC42 enters the study area from a culvert under 3rd Avenue Northeast. It is approximately 5 feet wide at OHWM in the study area.	
Connectivity (where stream flows from/to)	Stream XCC42 is a tributary to Fish Creek, which flows to Portage Creek.	
Riparian/Buffer Condition	Stream XCC42 flows through a forested ravine, between 3rd Avenue Northeast and the BNSF railroad. Wetland XCC42 is located along the right bank, and Wetland XCC42B is located along the left bank of the stream. Riparian vegetation includes western red cedar, vine maple, salmonberry, sword fern (*Polystichum munitum*), piggyback plant (*Tolmiea menziesii*), skunk cabbage, lady fern, Pacific willow, and twinberry. Within the study area, Stream XCC42 is mostly underneath forested canopy cover; closer to the BNSF embankment, there is less overhang from shrub and emergent vegetation. Large woody debris is present in the study area. The bed of Stream XCC42 consists of gravel and sand.	
Documented Fish Use	Stream XCC42 is not mapped on SWIFD (2023) or SalmonScape (WDFW 2023a). However, due to connectivity to Fish Creek and a similar gradient, Residential Coastal Cutthroat Trout, Chum Salmon, Coho Salmon, Chinook Salmon, Pink Salmon, and steelhead may be present.	

Table 30. Stream Information Summary—Fish Creek

STREAM INFORMATION SUMMARY		
	**Stream Name**	Fish Creek
	WRIA	5
	WA Stream Catalog #	68816
	Local Jurisdiction	Snohomish County
	DNR Stream Type	F
	Local Stream Rating	F
	Buffer Width	150 feet
Location of Stream Relative to Project Corridor	Fish Creek is located between the existing Poles 5/4 and 5/3. It is approximately 15 feet wide at the OHWM within the study area.	
Connectivity (where stream flows from/to)	Fish Creek is a tributary to Portage Creek and flows southwest to northeast through the project area.	
Riparian/Buffer Condition	Fish Creek is bordered by mixed deciduous-conifer forest and residential development. Within the study area, it is bordered by Wetland 5/4 on each bank. Riparian vegetation in the study area includes western red cedar (*Thuja plicata*), red alder, vine maple (*Acer circinatum*), willows, salmonberry, and reed canary grass. Within the study area, much of Fish Creek includes overhanging vegetation, with some areas completed shaded by vegetation. Some large woody debris is present. The bed consists of gravel and sand.	
Documented Fish Use	Residential Coastal Cutthroat Trout, Chum Salmon, Coho Salmon, Chinook Salmon, Pink Salmon, and steelhead are documented to be present in Fish Creek (SWIFD 2023; WDFW 2023b).	

4.2.2 Federal and State Threatened and Endangered Species

The USFWS IPaC database (USFWS 2023b) and the NMFS database (NMFS 2023) list the federally listed threatened and endangered species shown in Table 31 as having the potential to occur in the project study area.

Table 31. Federally Listed Species in the Study Area

Species	Listing Status (Federal, State)	Agency	Habitat in Study Area	Critical Habitat
Marbled Murrelet (*Brachyramphus marmoratus*)	Threatened, Endangered	USFWS WDFW	No	Designated but not in study area
Yellow-billed Cuckoo (*Coccyzus americanus*)	Threatened Endangered	USFWS WDFW	No	Designated but not in study area
Bull Trout (*Salvelinus confluentus*)	Threatened, Candidate	USFWS WDFW	Yes	Designated but not in study area
Chinook Salmon (Puget Sound ESU) (*Oncorhynchus tshawytscha*)	Threatened, not state-listed	NMFS	Yes	Designated, within study area
Steelhead (Puget Sound DPS) *(Oncorhynchus mykiss*)	Threatened, not state-listed	NMFS	Yes	Designated, within study area

Note: ESU = Evolutionarily Significant Unit

MARBLED MURRELET

Murrelets (*Brachyramphus marmoratus*) are small seabirds that spend the majority of their lives in the marine environment, returning to old-growth or mature forest stands for nesting. Marbled murrelet distribution in Washington includes mature forest stands throughout the Cascades, with foraging areas in the Puget Sound and the Strait of Juan de Fuca. Suitable marbled murrelet nesting trees are mature conifers (more than 15 inches diameter at breast height [dbh]) situated in contiguous conifer-dominant (more than 60 percent conifer) stands (Harke and Teachout 2014). These conifer-dominated stands may vary in size from several (at least 5) acres to thousands of acres, with large unfragmented stands of old growth comprising the highest-quality habitat (USFWS 2019). WDFW PHS data (2023b) indicates that there are no occurrences of marbled murrelets or their habitat within the project corridor and vicinity. Given the project location between Puget Sound and inland nesting areas in the Cascades to the east, there is the potential that a few marbled murrelets could fly over the project area while transiting between marine foraging areas and inland nesting sites. However, due to the lack of mature conifers in large conifer-dominated stands, suitable marbled murrelet habitat is not present in the project area. Furthermore, the proposed project does not include the removal or trimming of large, mature conifers suitable for nesting. Therefore, the project will not result in impacts to marbled murrelets or their habitat.

YELLOW-BILLED CUCKOO

Yellow-billed cuckoos (*Coccyzus americanus*) display a strong preference for large, continuous riparian zones with cottonwoods and willows. In Washington, nesting also

takes place in fir woodlands and open brushy hillsides. WDFW PHS data (2023b) indicates that there are no occurrences of yellow-billed cuckoo or their habitat within the project corridor and vicinity. The riparian corridor along the Stillaguamish River and its tributaries in the vicinity of the project area includes patches of cottonwoods willows. However, the riparian corridor along the project area is narrow and bordered by agricultural land; therefore, this area does not exhibit the large, continuous riparian zones necessary to support yellow-billed cuckoos. Furthermore, removal of riparian vegetation is not included in the proposed project. Therefore, the project will not result in impacts to yellow-billed cuckoos or their habitat.

BULL TROUT

Bull Trout (*Salvelinus confluentus*) in the Stillaguamish River are part of the coastal and Puget Sound Distinct Population Segment (DPS), which was federally listed as threatened under the Endangered Species Act (ESA) in 1999. The USFWS defined a single DPS for Bull Trout within the coterminous United States and listed them as threatened under the ESA in 1999 (64 *Federal Register* 58910). Bull Trout habitat consists of clean, cold waterbodies that provide complex habitat features and high habitat connectivity (USFWS 2023c). Bull Trout are reported to be present in the Stillaguamish River, Cook Slough, and Portage Creek (SWIFD 2023; WDFW 2023b). Bull Trout were not mapped as present in Fish Creek or Stream XCC42. However, these waterbodies consist of clear water with complex habitat features including large woody debris and overhanging vegetation. Due to the connectivity to Portage Creek where Bull Trout are documented to be present, Bull Trout may also be present in Fish Creek and Stream XCC42. Stream 7/1 does not have stream habitat characteristics that support Bull Trout; therefore, despite connectivity to the Stillaguamish River where Bull Trout are documented as present, Bull Trout are unlikely to be present in Stream 7/1. However, no in-water work is proposed as part of the project.

CHINOOK SALMON

The Puget Sound Evolutionary Significant Unit (ESU) of Chinook Salmon (*Oncorhynchus tshawytscha*) was listed as a federally threatened species on March 24, 1999, and reaffirmed in 2005. The Puget Sound Chinook Salmon ESU includes all marine, estuarine, and river reaches that are accessible to listed Chinook Salmon in the Puget Sound. Chinook Salmon are documented as present in the Stillaguamish River, Cook Slough, Portage Creek, Stream 7/1, and Fish Creek (SWIFD 2023; WDFW 2023b). Due to the presence of suitable habitat and connectivity to Fish Creek, Chinook Salmon may be present in Stream XCC42. Freshwater wetlands and estuaries can provide habitat for Chinook Salmon (NOAA 2023a); therefore, Chinook Salmon may also be present in inundated portions of Wetland 7/1, Wetland 7/2, and Wetland 5/4. However, no in-water work is proposed as part of the project.

STEELHEAD

The Puget Sound DPS of steelhead *(Oncorhynchus mykiss*) was listed as threatened under the ESA on May 11, 2008. Puget Sound steelhead exhibit one of the most complex suites of life history strategies among anadromous Pacific salmonid species. Unlike other anadromous salmonids, steelhead can spawn multiple times, often returning

to marine waters between freshwater spawning bouts (Busby et al. 1996). Steelhead habitat consists of fast-flowing, oxygenated freshwater; they spawn in gravel-bottom streams (NOAA 2023b). Juvenile Puget Sound steelhead typically rely heavily on freshwater habitats and may spend multiple years in freshwater before migrating (NMFS 2019). Steelhead are documented as present in the Stillaguamish River, Cook Slough, Portage Creek, Stream 7/1, and Fish Creek (SWIFD 2023; WDFW 2023b). Due to the presence of suitable habitat and connectivity to Fish Creek, steelhead may be present in Stream XCC42. Juveniles typically inhabit shallow water along stream banks (Barnhart 1986); therefore, the wetlands along Portage Creek, Stream 7/1 and Stream XCC42 may provide suitable rearing habitat for steelhead juveniles. However, no in-water work is proposed as part of the project.

4.2.3 State-Designated Priority Habitats and Species

The WDFW PHS database identifies several salmonid species that are documented to be present in the waterbodies that intersect the study area. These species include Coho Salmon (*Oncorhynchus kisutch*), Chum Salmon (*O. keta*), Chinook Salmon, Pink Salmon (*O. gorbuscha*), Sockeye Salmon (*O. nerka*), Residential Coastal Cutthroat Trout (*O. clarkii*), and Bull Trout. In addition, the WDFW PHS database shows winter concentration areas for trumpeter swans (*Cygnus buccinator*) within the project area (WDFW 2023b). The concentration areas are located in the active agricultural fields.

4.2.4 State Listed Sensitive Species

The species described below are listed in WAC 220-200-100 as state sensitive species. The geographic range and required habitat for state-listed sensitive species was reviewed to determine their likely presence in the study area. These species include the following:

- American white pelican (*Pelecanus erythrorhynchos*): American white pelicans breed in western/central Canada and the western United States. They overwinter in southern locations, ranging from California to Central America, Texas, and Florida. In Washington, there is a small breeding population on the east side of the state; they are rarely observed in western Washington (WDFW 2023d). Pelicans nest on isolated, undisturbed islands in freshwater habitats. They overwinter along coastal areas including bays and estuaries. Foraging habitat includes shallow areas of lakes, rivers, and marshes; they feed on fish, amphibians, and crustaceans (WDFW 2023d).
- Gray whale (*Eschrichtius robustus*): Gray whales occur in marine habitats; they migrate through deep waters, give birth in lagoons or bays, and feed in shallow continental shelves or banks (WDFW 2023e). Habitat for this species does not occur near the study area.
- Common loon (*Gavia immer*): Common loons usually nest on lakes surrounded by forests that have deep inlets and bays. Lakes where loons nest in Washington range in size from 14 to 7,800 acres. There are no lakes with forested buffers in the study area; therefore, the presence of common loons is the study area is unlikely (WDFW 2023f).

- Larch Mountain salamander (*Plethodon larselli*): Larch Mountain salamanders are associated with talus, scree, gravelly soils, and other areas of accumulated rock where interstitial spaces exist between the rock and soil. Steep slopes are also an important habitat feature. This habitat does not occur in the study area; therefore, the presence of Larch Mountain salamanders in the study area is unlikely (WDFW 2023g).
- Pygmy Whitefish (*Prosopium coulteri*): Pygmy Whitefish are most commonly found in cool oligotrophic lakes and streams of mountainous regions and currently inhabit only nine lakes in Washington. Suitable Pygmy Whitefish habitat does not occur in the study area; therefore, their presence is unlikely (WDFW 2023h).
- Margined sculpin (*Cottus marginatus*): The margined sculpin is found only in southeastern Washington in the Tucannon River and Walla Walla River drainages; therefore, their presence is unlikely in the study area (WDFW 2023i).
- Olympic mudminnow (*Novumbra hubbsi*): Olympic mudminnows are found in the southern and coastal drainages of the Olympic Peninsula, the Chehalis River basin, south Puget Sound west of the Nisqually River, and a few sites in south Snohomish and King counties (WDFW 2023j). Their habitat consists of slow-moving streams, wetlands, and ponds, with muddy substrates and aquatic vegetation. There have been no recorded occurrences of Olympic mudminnows near the project area (WDFW 2023j). However, the vegetated streams and silt beds of Stream 7/1 and Portage Creek may provide suitable habitat for mudminnows; therefore, they may be present in the study area.

4.2.5 Species of Local Importance

No species of local importance are designated in the SCC.

4.3 Geologically Hazardous Areas

Below is a summary of potential geologic hazards at the project site, based on a review of the publicly available data sources listed in Section 3.2. As stated in Section 2.5, the presence of geologically hazardous areas (or lack thereof) should be determined by a qualified geologist during a field investigation. This report does not confirm the presence of geologically hazardous areas (or lack thereof), nor does it address impacts to these areas. The information presented below does not constitute an analysis of geologic hazards in the project area. The potential geological hazards include the following:

- Erosion Hazards: A portion of the project area is mapped within an area of Erodible Surficial Geology – Alluvium (Snohomish County 2023).
- Channel Migration Zone (CMZ): The Stillaguamish River and sloughs are designated as river sections subject to migration (SCC 30.62B.330(1)). However, per SCC 30.62B.330(3)(b)(ii), utilities are exempt from County CMZ standards and requirements.
- Landslide Hazards: There are no landslide hazard areas mapped by the DNR Geologic Information Portal present in the project area (DNR 2023a). However,

the project area intersects multiple landslide hazard areas mapped in the Snohomish County Landslide Inventory (Snohomish County 2023).

- Seismic Hazards: Areas with moderate to high, low to moderate, and very low liquefaction susceptibility are mapped withing the project area (DNR 2004). In addition, the project area is located within areas mapped as National Earthquake Hazards Reduction Program (NEHRP) Site Class C-D, D, and D-E[1] (DNR 2023a).
- Volcanic Hazards: The project corridor is located in the Stillaguamish River Valley, which is located within the lahar hazard zone for Glacier Peak (Snohomish County 2023).
- Mine Hazards: No active or abandoned mines are mapped in or near the project corridor (DNR 2023a; Snohomish County 2023).
- Tsunami Hazards: There are no tsunami hazard areas mapped within the project area (Snohomish County 2023).

4.4 Critical Aquifer Recharge Areas

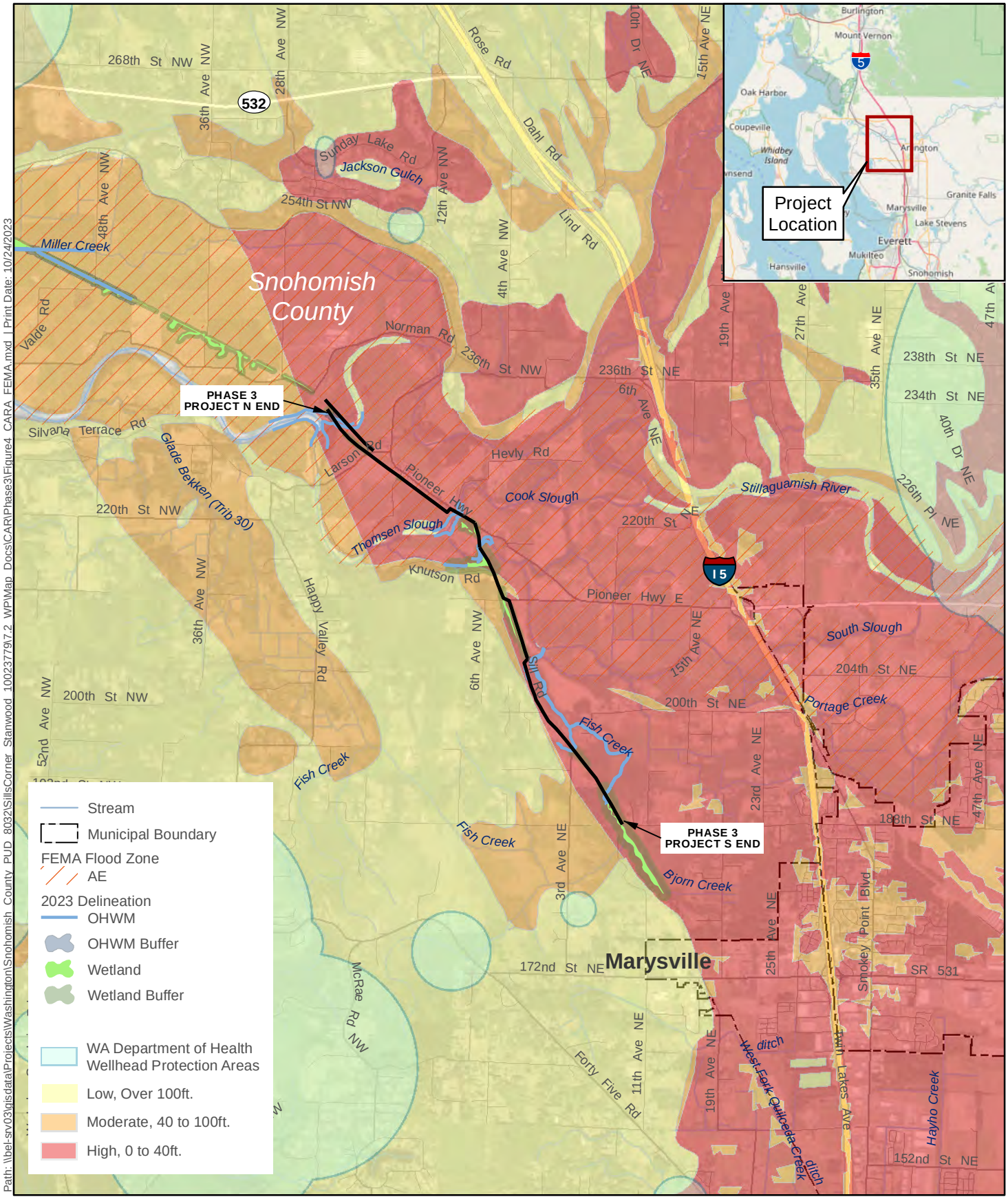
According to the Snohomish County Critical Aquifer Recharge Areas Map, which is available on the Snohomish County PDS map portal (Snohomish County 2023), the project corridor is located in areas of moderate to high aquifer sensitivity. The project corridor is not located near an EPA-designated sole source aquifer or within a 10-year travel zone of a Group A wellhead protection area (Snohomish County 2023). Critical aquifer recharge areas and floodplains are shown in Figure 4.

4.5 Special Flood Hazard Areas

According to FEMA Flood Insurance Rate Map Community Panels Numbers 53061C0360F, 53061C0380F, and 53061C0390F (FEMA 2020), portions of the project area are located within Zone AE within the Special Flood Hazard Areas, inundated by the 100-year flood. This includes the portion of the project area that extends from the northwest end to between existing Poles 7/1 and 6/12. The portion of the project area from between Poles 7/1 and 6/12 to the southeast end is located in Zone X; however, Zone X has a 2% chance of flooding and is not a Special Flood Hazard Area. Floodplains are depicted in Figure 4.

[1] Type C: very dense soil and soft rock (sandstone); Type D: still soil (mud); Type E: soft soil (artificial fill). Amplification from seismic activity increases from Type A to Type F (NEHRP 2023).

Figure 4. Floodplains and Critical Aquifer Recharge Areas



Source: Municipal Boundary, Road, and Stream - Snohomish County (2013 and 2015), Floodzone FEMA Aerial - ESRI Online (2023)

Figure 4
Floodplains and Critical Aquifer Recharge Areas

0 0.5 1 Mile

Print Date: 10/24/2023

Sils Corner to Standwood Transmission Line

5 Impacts

This section summarizes impacts to critical areas identified within the study area and their respective buffers.

According to SCC 30.62A.330(2)(c)(iii), new utilities are required to be contained within the developed footprint of existing utility crossings, where feasible. Per SCC 30.62A.340(3)(a), new utilities are allowed within wetlands where no other feasible alternative exists. Therefore, the new reroute sections of proposed project are allowed under the SCC.

There are existing transmission line crossings of several streams along the project corridor. The Cook Slough and Portage Creek crossings will be reconfigured, due to the northernmost re-routing segment. The Cook Slough crossing is proposed to be moved 225 feet to the north and to the opposite site of the railroad crossing of Cook Slough at this location, where it will align with the Pioneer Highway crossing of Cook Slough. Cook Slough is significantly narrower at the proposed new location, so this re-location of the crossing will have the effect of also narrowing the length of the aerial stream crossing, and moreover, the transmission line crossing will align with the highway. The southern point of the Portage Creek crossing will begin from new pole CI 7/5 which is near to existing pole CI 7/2 which it will be replacing, but from that point the transmission crossing would angle to the north, to new pole CI 7/A. This will minimally lengthen the crossing. All of the other existing stream crossings will remain unchanged and only re-wired with the visually similar higher-capacity wire. None of the crossings, however, will require any in-water work. Impacts associated with the new crossings are minimal or net zero (given that one crossing would be lengthened and the other shortened). The negligible impacts from this work upon FWHCAs and aquatic species is discussed below.

The proposed project does not, however, require any in-water work. Therefore, there will be no permanent or temporary impacts to streams. Permanent impacts to wetlands will be limited to areas where poles could not be relocated to be out of wetlands. Temporary wetland, wetland buffer, and stream buffer impacts are the result of temporary construction areas and temporary access routes. Temporary impacts will be minimized by using mats to support construction equipment and reduce disturbance to soils. All disturbed areas will be stabilized with seeding and appropriate erosion control.

Poles will be replaced along the existing alignment and spaced to accommodate the distribution line underbuild. Access will be routed within the transmission line corridor and adjacent properties to facilitate access for large equipment. New poles and temporary access will be located such as to limit impacts to wetlands and waterbodies and their buffers, where feasible. The locations of access have been planned to avoid impacts to adjacent agricultural properties while also limiting impacts to resources and their buffers.

Areas of impact are shown in Figure 2. Proposed Impacts, Sheets 1 through 8 (Appendix A).

5.1 Wetlands and Wetland Buffer Impacts

One pole is proposed to be installed within a wetland, and nine poles are proposed to be located within wetland buffers. Four poles currently located within wetlands are proposed to be removed, and the replacement poles will be installed in the adjacent wetland buffers. Compared to the existing transmission line configuration, the proposed project will result in the number of poles located in wetlands being reduced by three and the number of poles located in wetland buffers being increased by two.

New poles will result in a permanent impact area that is 2 feet in diameter (3.14 square feet). The installation of new poles and the removal of old poles will result in a temporary impact area that is 5 feet in diameter (16.50 square feet [19.64 square feet minus the 3.14 square feet at the center due to permanent impacts]). Table 32 summarizes the areas of temporary and permanent impact in wetlands and wetland buffers. The gross permanent wetland impacts, permanent wetland recovery, and net permanent wetland impacts are detailed in Table 33. These areas are illustrated in Figure 5, Sheets 1 through 8, and further detailed in Table 34.

Table 32. Summary of Gross Wetland and Wetland Buffer Impacts

Type of Impact	Total Area of Wetland Impacts	Total Area of Wetland Buffer Impacts
Temporary	2,794 square feet (0.06 acres)	62,751 square feet (1.44 acres)
Permanent	3 square feet (<0.01 acres)	25 square feet (<0.01 acres)

Table 33. Summary of Gross and Net Wetland and Wetland Buffer Impacts

Type of Impact	Wetland	Wetland Buffer
Gross Permanent Impact	3 square feet (1 pole)	25 square feet (8 poles)
Permanent Recovery	13 square feet (4 poles)	19 square feet (6 poles)
Net Permanent Impact	-9 square feet (3 poles)	6 square feet (2 poles)

Table 34. Temporary and Permanent Impacts by Wetland

Wetland Name	Permanent Wetland Impacts (square feet)	Temporary Wetland Impacts (square feet)	Permanent Wetland Recovery (square feet)	Permanent Wetland Buffer Impacts (square feet)	Temporary Wetland Buffer Impacts (square feet)	Permanent Wetland Buffer Recovery (square feet)[a]
8/7	0	0	0	0	4,288	0
8/7B	0	0	0	0	9,542 [a]	0
8/5	0	0	3	3	472	0
7/B	0	0	0	0	16	0

Wetland Name	Permanent Wetland Impacts (square feet)	Temporary Wetland Impacts (square feet)	Permanent Wetland Recovery (square feet)	Permanent Wetland Buffer Impacts (square feet)	Temporary Wetland Buffer Impacts (square feet)	Permanent Wetland Buffer Recovery (square feet)[a]
7/A	0	0	0	0	4,192	0
7/11	0	0	0	0	2,894	0
7/4	0	0	0	0	9,970[b]	6[c]
7/4B	0	0	0	3	0	0
7/2	3	921	0	0	0	0
7/1	0	1,873	0	3	20,489[d]	6[e]
6/B	0	0	0	6	33	0
6/C	0	0	0	6	33	3
6/11	0	0	3	3	16	0
6/9	0	0	6	0	0	3
XCC42	0	0	0	0	7,190	0
XCC42B	0	0	0	0	0	0
5/5	0	0	0	0	3,567	0
5/4	0	0	0	0	49	0
Total[f]	3	2,794	12	25	62,751	19

[a] A portion of the temporary wetland buffer impacts to Wetland 8/5 overlap with the buffer of Wetland 8/7B and are included in the total for the buffer of Wetland 8/7B.
[b] Temporary wetland buffer impacts to Wetland 7/4B overlap with the buffer of Wetland 7/4 and are included in the total for the buffer of Wetland 7/4.
[c] Permanent wetland buffer recovery of Wetland 7/4B overlap with the buffer of Wetland 7/4 and are included in the total for the buffer of Wetland 7/4.
[d] Temporary wetland buffer impacts to Wetland 7/2 overlap with the buffer of Wetland 7/1 and are included in the total for the buffer of Wetland 7/1.
[e] Permanent wetland buffer recovery of Wetland 7/2 overlap with the buffer of Wetland 7/1 and are included in the total for the buffer of Wetland 7/1.
[f] The areas of impact were calculated using GIS overlay of project elements and critical areas. The areas of impact per wetland reported in this table are rounded to the nearest square foot. The total areas of impact in the last row were summed in GIS and then rounded to the nearest square foot; therefore, the total areas in this table do not equal the summation of the impact areas per wetland as listed in the preceding rows.

Approximately 3 square feet of wetlands will be permanently impacted due to the project. The locations of the new poles were selected to avoid wetlands where feasible, while staying within the District's easement and complying with design standards. Wetland buffers will be permanently impacted due to the placement of poles within wetland buffers (25 square feet). In the effort to avoid wetland impacts, some poles were shifted out of a wetland and into a wetland buffer. These relocations include the existing Poles 6/8 and 6/9, which are currently located in Wetland 6/9; existing Pole 6/10, which is currently located in Wetland 6/11; and existing Pole 8/4, which is currently located in Wetland 8/5. The relocation of these poles from wetlands to wetland buffers results in the recovery of approximately 13 square feet of wetlands. This results in approximately 9

square feet of net permanent wetland recovery; overall, the project will remove more poles from wetlands than it will install in wetlands.

Approximately 25 square feet of wetland buffers will be permanently impacted due to the installation of poles in wetland buffers. However, this will be offset by the removal of six poles from wetland buffers, which totals approximately 19 square feet of wetland buffer recovery. The net permanent impact to wetland buffers is 6 square feet.

Approximately 2,794 square feet of wetlands will be temporarily impacted by the establishment of temporary access routes and disturbance from installing new poles. Access route planning avoided wetlands where feasible by using existing agricultural access routes and routing around wetlands, while also considering impacts to agricultural fields. The construction impacts and access routes are considered short-term temporary impacts because they will last for a limited amount of time and functions will return to pre-impact conditions within 1 year or one growing season (Ecology, USACE, and EPA 2021). Vegetation along access routes, where access routes are not just bare earth, generally consists of reed canary grass, pasture grasses, and agricultural crops. The temporary access route to existing Pole 5/4 may include the clearing of some shrub vegetation; however, this is within the District's easement where regular vegetation maintenance occurs.

Temporary wetland buffer impacts (62,751 square feet) are due to the establishment of temporary access routes that will be approximately 12 feet wide. The temporary access routes will be located outside of wetlands where feasible, which results in the routes being located in wetland buffers in some areas. Temporary access routes will use existing roads and access roads where feasible.

The wetland buffers generally consist of agricultural land that is a lower-functioning buffer to the wetlands compared to undisturbed land. Pollutants from agricultural practices, avian droppings, increased runoff, and lack of native vegetation are indications that the buffers are low-functioning.

5.2 Fish and Wildlife Habitat Conservation Areas

5.2.1 Waterbodies and Buffers

There will be no direct impacts from access routes or pole removal or installation in the waterbodies identified within the project area. No in-water work will occur. Impacts to waterbodies are limited to temporary and permanent buffer impacts (see Table 35 and Table 36). Temporary waterbody buffer impacts are the result of temporary access routes and pole installation. Please refer to Section 5.1 for additional information on the site selection for poles and access routes. Approximately 4,204 square feet of waterbody buffers will be temporarily impacted, and approximately 9 square feet of waterbody buffers will be permanently impacted.

Table 35. Summary of Waterbody and Waterbody Buffer Impacts

Type of Impact	Total Area of Waterbody Impact	Total Area of Waterbody Buffer Impact
Temporary	0	4,204 square feet (0.10 acre)

Type of Impact	Total Area of Waterbody Impact	Total Area of Waterbody Buffer Impact
Permanent	0	9 square feet (<0.01 acre)

Table 36. Permanent and Temporary Waterbody and Buffer Impacts

Waterbody Name	Permanent Waterbody Impacts (square feet)	Temporary Waterbody Impacts (square feet)	Permanent Waterbody Buffer Impacts (square feet)	Temporary Waterbody Buffer Impacts (square feet)
Stillaguamish River	0	0	3	1,840
Cook Slough	0	0	3	16
Portage Creek	0	0	0	1,529
Stream 7/1	0	0	0	803
Stream XCC42	0	0	0	0
Fish Creek	0	0	3	16
Total	0	0	9	4,204

Waterbody buffer impacts that overlapped with wetland buffer impacts were included in the wetland buffer impact totals. The area of impact was not included twice in the summation of temporary or permanent impacts to buffers. This ensures that the impacts to buffers are not double-counted; waterbody and wetland buffers provide similar functions of providing habitat, impacts to water quality, and surface runoff.

Waterbody buffers impacted by the proposed project consist of agricultural land. Agricultural land use in the waterbody buffers increases runoff and pollutants to waterbodies and provides relatively lower-functioning buffers compared to undisturbed areas. Temporary impacts to FWHCA buffers through agricultural land will not result in a permanent loss of function of the buffer--the impacted areas are expected to return to pre-existing conditions such that no net loss of buffer function may result.

5.2.2 Federal and State Threatened and Endangered Species

Due to a lack of appropriate habitat in the study area, marbled murrelets and yellow-billed cuckoos are unlikely to occur in the study area and therefore are unlikely to be impacted by the project. Poles would be placed within the existing easement, and the easement is regularly cleared as part of vegetation management requirements.

No poles would be placed within waterbodies in the study area, and no in-water work is proposed for construction. There are existing transmission line crossings of the Stillaguamish River, Cook Slough, Portage Creek, Stream XCC42, and Fish Creek. The Cook Slough and Portage Creek crossings will be re-oriented/re-located, due to the northernmost re-routing segment. The Cook Slough crossing is proposed to be moved one-hundred to two-hundred feet to the north and to the opposite site of the railroad crossing of Cook Slough at this location. Notably, Cook Slough is significantly narrower

at this new location, so this re-location of the crossing will have the effect of also narrowing the length of the aerial stream crossing. The southern point of the Portage Creek crossing will remain unchanged, but from that point, the transmission crossing would angle to the north, to new pole CI 7/A, which will minimally extend the length of the crossing. All of the other existing stream crossings will remain unchanged (just re-wired with the visually similar higher-capacity wire). None of the crossings, however, will require any in-water work.

The proposed aerial crossings will not impact aquatic habitat. There will not be significant impacts to shading of the waterbodies from the transmission line spans, as the diameter of the wire above the water will not cast a significant shadow below. In addition, the spans will not significantly alter ingress and egress of aquatic associated birds to these waterbodies, as the transmission line spans have existed over these waterbodies prior to the construction and are only being relocated. Furthermore, the proposed span across Cook Slough generally overlaps with the bridge of Pioneer Highway over Cook Slough, which further minimizes the de minimis impacts.

Access routes will cross streams at existing crossings; no stream crossings will be constructed for the access routes. A temporary erosion and sediment control (TESC) plan will be developed to minimize the potential for erosion, and exposed soils will be stabilized following construction. Therefore, impacts to federal- and state-listed aquatic species that may be present in the study area, including Bull Trout, Chinook Salmon, and steelhead, are not anticipated.

5.2.3 State Designated Priority Habitats and Species

The WDFW PHS database identifies several salmonid species that are documented to be present in the waterbodies that intersect the study area. These species include Coho Salmon, Chum Salmon, Chinook Salmon, Pink Salmon, Sockeye Salmon, residential cutthroat, and Bull Trout. In addition, the WDFW PHS database shows winter concentration areas for trumpeter swans within the project area (WDFW 2023b). The concentration areas are located in the active agricultural fields.

Temporary and permanent impacts in critical areas and their respective buffers will not impact aquatic habitat for salmonid species. A TESC plan will be implemented to prevent erosion and sediment runoff to receiving waterbodies. There will be no direct impacts to waterbodies; poles are located outside of waterbodies, and access routes have been designed to avoid waterbodies and use existing crossings.

Concentration areas for trumpeter swans are in located within the project area. These areas consist mostly of agricultural land, with fringes of shrub vegetation and reed canary grass along field edges. The proposed project is not anticipated to significantly impact habitat for trumpeter swans; any temporary impacts due to construction and access routes will be rectified post-construction. Permanent impacts from new poles will not significantly reduce trumpeter swan habitat. Avian diverters or other measures will be considered and incorporated, as feasible, to mitigate adverse effects of existing transmission lines interfering with avian migration.

5.2.4 State-Listed Sensitive Species

Olympic mudminnows may be present in the vegetated streams and silt beds of Stream 7/1 and Portage Creek. As stated above, there will be no in-water work or direct impacts to waterbodies from the proposed project. A TESC plan will prevent the spread of sediment into adjacent waterbodies. Therefore, the Olympic mudminnow will not be impacted.

Other state-listed sensitive species are unlikely to occur in the project area due to the lack of suitable habitat present in the project area. American white pelican, gray whale, common loon, larch mountain salamander, pygmy whitefish, and margined sculpin will not be impacted.

5.2.5 Species of Local Importance

There are no listed species of local importance; therefore, there will be no impacts to species of local importance.

5.3 Critical Aquifer Recharge Areas

The project corridor is located in area of moderate to high aquifer sensitivity. However, the project does not involve an activity or use that may impact water quality; therefore, no impacts are anticipated.

5.4 Special Flood Hazard Areas

The project is located within a special flood hazard area. As stated in Section 2.6, this report addresses only mapped special flood hazard areas.

A *Floodplain Habitat Assessment Technical Memorandum* (HDR 2024a) has been prepared under separate cover.

5.5 Shorelines

Impacts to Shorelines of the State are addressed within a separate report, Shoreline Analysis Memorandum (HDR 2024b).

6 Mitigation

This section outlines the avoidance and minimization measures considered by the project and describes proposed mitigation for impacts to critical areas and buffers affected by the project.

6.1 Mitigation Sequence

According to SCC 30.62A.310(3), Snohomish County requires that all projects requiring a permit or clearing "shall be designed and conducted to achieve no net loss of critical area functions and values." The mitigation efforts, per SCC 30.62A.310(3)(a), must follow the following prescribed sequence:

1. Avoiding the impact altogether by not taking a certain action or part of an action; or
2. When avoidance is not possible, minimizing impacts by limiting the degree or magnitude of the action and its implementation, using appropriate technology, or taking affirmative steps such as project redesign, relocation, or timing to avoid or reduce impacts; and mitigating for the affected functions and values of the critical area.

When mitigation is required, it is required in-kind and on site, and it must be completed prior to the final approval of the project permit.

SCC 30.62A.320(2)(a) allows for new utilities within buffers when no other feasible alternative exists or the location, design, and construction minimizes impacts to the buffers. Per SCC 30.62A.310(3)(a), actions requiring a permit shall be designed and conducted to achieve no net loss of critical area functions and values. The project proponent shall make reasonable efforts to avoid and minimize impacts to critical areas and buffers. The design of the proposed project was altered after the identification and delineation of critical areas to avoid those areas and their buffers to the extent possible, while still adhering to construction standard requirements for transmission lines.

The poles will be replaced within the District's existing easement or placed new within new easements where the transmission line is being rerouted to improve accessibility for maintenance. The District's existing easement is regularly cleared as part of vegetation maintenance requirements, and surrounding lands in use as agriculture are also cleared; the new proposed transmission line reroute areas consist of agricultural land and herbaceous roadside vegetation. Temporary accesses will avoid wetlands where possible. Due to the locations of some poles within wetland buffers, some temporary accesses will be within buffers; however, work will be conducted from existing paved surfaces where feasible in order to avoid and minimize impacts. Temporary construction work areas and temporary construction accesses will be removed and restored following construction. Access for work within wetlands or wetland buffer areas will use mats where needed to support the equipment and may require minimal clearing of vegetation. Poles within a wetland or wetland buffer will typically require a temporary work area with an approximately 5-foot diameter centered on the pole. A TESC plan has been developed to minimize the potential for erosion, and all exposed soils will be stabilized following construction.

No trees are planned to be impacted by the project. Some overgrown brush located around some of the existing poles may be impacted to access the work locations. Because the surrounding land through which the access routes will extend consists of agriculture or is alongside roads, tree clearing will not be necessary for access. Within the District's easement, vegetation is regularly cleared; therefore, tree clearing will not be necessary for access within the existing easement. The new proposed easements consist of agricultural land and roadsides with herbaceous vegetation. Therefore, the new proposed easements will not require tree clearing.

6.2 Avoidance and Minimization

The following avoidance and minimization measures were considered in the project design and will be implemented during project construction:

- Installing replacement poles outside of critical areas where feasible.
- Removing existing poles from wetlands where feasible.
- Utilizing existing agricultural access routes to access the project area where feasible.
- Routing access outside of wetlands within the project area where feasible
- Placing mats in wetland areas along the proposed temporary access routes to prevent rutting and soil compaction.
- Scheduling construction for the dry season to prevent rutting and soil compaction in wetlands.
- Following standard BMPs for erosion and sediment control during construction.
- Restoring disturbed areas to the pre-existing ground contours.
- Reseeding disturbed areas based on the pre-existing conditions with either native seed mix or agricultural crops.
- Utilizing casings to form the hole for each pole preserves the hole and minimizes sediment migration. This is particularly beneficial for poles that are close to waterbodies, wetlands, or their buffers.

Temporary wetland disturbances due to construction will be minimized by moving poles outside of wetlands where feasible and through measures designed to limit ground disturbance to only the areas needed to complete the pole installations. Equipment needed to install each of the poles in wetlands will operate from construction mats that are laid directly over the existing vegetation and ground surface. These methods will minimize the need to excavate or disturb soils near the poles during installation and reduce the need for restoration of soil and plant cover following construction. Following pole installation, disturbed areas within wetlands will be reseeded with an appropriate native seed mix. Furthermore, the installation of replacement poles will be offset to locate the new poles outside of wetlands where feasible, given design constraints for the distance between each pole and the utility right-of-way. Moving poles out of wetlands will

reduce the area of fill currently in wetlands in the project area and will offset some of the permanent impacts where poles must be placed in wetlands.

The access routes will utilize existing agricultural access routes when available. Access routes have been designed to avoid impacts to wetlands by routing them around wetlands and using wetland buffer areas that are currently used for agriculture.

6.3 Rectifying Impacts

Temporary impacts will be rectified by restoring ground surface, reseeding with an appropriate native seed mix, and removing temporary mats along access routes. The majority of temporary impacts occur within agricultural fields; reseeding will not be necessary in these areas. Temporary impacts to wetlands and buffers will be restored in kind within 1 year of the impacts.

6.4 Compensatory Mitigation

SCC 30.62A.150 states that mitigation is required when a permit is required for a project when there are impacts to wetlands, FWHCAs, or buffer functions and values.

SCC 30.62A.340(3) states that mitigation is required when a permit is required for a project and there are impacts to wetlands; new utility structures are allowed within wetlands and buffers but still require mitigation of disturbances. SCC 30.62A.340(4) - Table 4 details the mitigation ratio requirements for temporary and permanent impacts to wetlands. Temporary wetland impacts shall be mitigated at a 1:1 ratio, by rectification of those areas temporarily disturbed (SCC 30.62A.320(3)(d)). Permanent impacts to wetlands shall be mitigated at the ratios shown in Table 37, per SCC.

Table 37. Wetland Mitigation Ratios by Wetland Category and Mitigation Type

Category/Type of Wetland		Creation	Enhancement
Category IV		1.5:1	3:1
Category III		2:1	4:1
Category II	Estuarine	Innovative development only	4:1
	All other	3:1	6:1
Category I	Based on functions score	4:1	8:1
	Listed by Washington Natural Heritage Program as having High Conservation Value	Innovative development only	Innovative development only
	Coastal lagoon	Innovative development only	Innovative development only
	Bog	Not allowed	Innovative design only
	Estuarine	Innovative development only	Innovative development only

Per SCC 30.62A.310(3)(b)(iii), unless otherwise stated, functions and values of critical areas shall be replaced at a 1:1 ratio. SCC 30.62A.330(2) states that mitigation for streams is required but does not provide ratios. Therefore, a 1:1 ratio is likewise assumed for impacts to streams.

SCC 30.62A.310(3)(b) states that when mitigation is required for wetlands, FWHCA, and buffers, it shall be in-kind and on-site and shall be completed prior to the final approval of the action requiring a permit and mitigation; and functions and values shall be replaced at a 1:1 ratio. For temporary impacts in buffers, mitigation shall replace functions and values in a 1:1 ratio (SCC 30.62A.320(3)(d)). SCC 30.62A.320(2) states that if mitigation is required when a permit is required for a project, then mitigation for buffer impacts is required. Permanent impacts to buffers require mitigation when there is a loss of buffer function and/or value; mitigation ratios are based on impacted vegetation (SCC 30.62A.320(3), Table 3), as shown in Table 38.

Table 38. Buffer Mitigation Ratios for Permanent Impacts

Existing Buffer Habitat Vegetation Type	Creation	Enhancement
Mature forest	6:1	12:1
Non-mature forest	3:1	6:1
Shrub	2:1	4:1
Non-woody vegetation	1.5:1	3:1
No vegetated cover	1:1	2:1

At this time, a mitigation plan for impacts to critical areas is not included in the scope of the proposed project. All temporary impacts will be rectified through the removal of mats and replanting of native vegetation. Impacted vegetation will be replaced in-kind. Because many of the temporary impacts occur in the buffers that consist of agricultural fields, there will be no loss of buffer function or value. The temporary impacts from the proposed project will not significantly alter the non-native vegetation and disturbed soils of the agricultural areas in the buffers in a way that degrades the value and function of the buffer.

Permanent wetland and stream buffer impacts will not alter the function or value of the wetland or stream buffers. The buffers consist mainly of agricultural development and existing transmission line easement; therefore, the placement of poles in the buffers will not significantly alter the vegetation communities, interception of runoff, habitat, or other functions that buffers typically provide. Furthermore, permanent buffer impacts are considered to be de minimis, totaling 25 square feet; when accounting for poles that will be removed from wetland buffers, the net permanent impact to wetland buffers is 6 square feet. Therefore, mitigation for permanent buffer impacts is not required.

Permanent impacts to wetlands are considered de minimis, totaling 3 square feet; when accounting for poles that will be removed from wetlands, there is a net recovery of approximately 9 square feet of wetland area. Therefore, permanent impacts to wetlands will not result in a significant reduction of wetland acreage or function. The permanent

impacts are due to the placement of poles in wetlands where such placement could not be avoided; this will not significantly impact the habitat provided by the wetlands, the ability to improve water quality, or the hydrologic functions of the wetland.

Because the project is located in a swan biodiversity area, as mapped by PHS, the District has included avian deflectors in the proposed project to be installed along the transmission wires. The deflectors will reduce the number of avian collisions with the transmission wires that could result in avian deaths. In addition, the new wires will be approximately 66 percent larger in diameter than the existing wires; larger-diameter wires will increase visibility by transiting birds and are expected to reduce the number of avian collisions. While these are considered out-of-kind mitigation measures, they are appropriate for the project because the project is located within a swan biodiversity area and because some of the wetlands and waterbodies present in the project area function as waterfowl habitat.

7 Conclusion

The project will replace 42 existing wooden transmission poles with 40 new iron/steel transmission poles and install higher-capacity wire. Some of the poles will be relocated in order to provide the necessary pole spacing to accommodate the distribution underbuild, as well as to move poles out of critical areas wherever possible. Two segments of this corridor are new re-routing segments which are being designed to overcome chronic access challenges. Additionally, to accommodate the distribution underbuild and to upgrade the distribution crossing of the Stillaguamish River, 27 existing wooden distribution poles will be removed, and 13 new distribution poles will be installed. Temporary access easements will be used to access the poles, and temporary construction mats will be used where necessary to avoid soil rutting and compaction.

The project will result in approximately 2,794 square feet of temporary impacts to wetlands and approximately 9 square feet of net permanent recovery of wetlands. Approximately 62,751 square feet of wetland buffer will be temporarily impacted, and a net total of approximately 6 square feet of wetland buffer will be permanently impacted.

Waterbodies will not be permanently or temporarily impacted; no in-water work is proposed. A total of 4,204 square feet of waterbody buffer will be temporarily impacted, and approximately 9 square feet of waterbody buffer will be permanently impacted.

Permanent impacts to wetlands (3 square feet), permanent impacts to wetland buffers (25 square feet), and permanent impacts to waterbody buffers (9 square feet) are considered de minimis. All areas of temporary impacts will be restored to pre-construction conditions within one growing season. Therefore, due to the minimal permanent impacts and rectification of temporary impacts, a mitigation plan has not been developed for this project. Avian deflectors will mitigate for the potential of avian collisions with the transmission wires along the corridor in the swan biodiversity areas.

8 References

Anderson, P.S., S.M. Anderson, Dr. P. Olson, and E. Stockdale. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Shorelands and Environmental Assistance Program Washington State Department of Ecology Olympia, WA.

Barnhart, R.A. 1986. *Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Pacific Southwest*). Coastal Ecology Group Waterways Experiment Station, U.S. Army Corps of Engineers, U.S. Department of Interior, Fish and Wildlife Service. *Biological Report* 82(11.60). June.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Government Printing Office, Washington, DC.

DNR (Washington Department of Natural Resources). 2004. Liquefaction Susceptibility Map of Snohomish County, Washington. September 2004. https://www.everettwa.gov/DocumentCenter/View/1452/Liquefaction-Susceptibility-for-Snohomish-County-Map-5-PDF. Accessed September 2023.

DNR. 2023a. Washington Geologic Information Portal. https://geologyportal.dnr.wa.gov/#natural_hazards. Accessed September 2023.

DNR. 2023b. Forest Practices Application Mapping Tool. https://fortress.wa.gov/dnr/protectiongis/fpamt/. Accessed September 2023.

Ecology (Washington State Department of Ecology). 2023. Wetland Rating System. Accessed September 2023. https://ecology.wa.gov/Water-Shorelines/Wetlands/Tools-resources/Rating-systems.

Ecology, USACE (U.S. Army Corps of Engineers Seattle District), and EPA (U.S. Environmental Protection Agency) Region 10. 2021. Wetland Mitigation in Washington State–Part 1: Agency Policies and Guidance (Version 2). Washington State Department of Ecology Publication #21-06-003.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station. Vicksburg, MS.

FEMA (Federal Emergency Management Agency). 2020. Flood Insurance Rate Map. Map Panels 53061C0360F, 53061C0380F, and 53061C0390F. https://msc.fema.gov/portal/advanceSearch.

HDR (HDR Engineering, Inc.). 2024a. Floodplain Habitat Assessment for Sills Corner-Stanwood 115kV Transmission Reconductor Project, Phase 3 Technical Memorandum. Seattle, WA.

HDR. 2024b. Shoreline Analysis for Sills Corner-Stanwood 115kV Transmission Reconductor Project, Phase 3 Technical Memorandum. Seattle, WA. In draft. 2024.

Hruby, T. 2014. *Washington State wetland rating system for Western Washington: 2014 Update.* Washington State Department of Ecology Publication #14-06-029. Olympia, Washington: Washington Department of Ecology.

NEHRP (National Earthquake Hazards Reduction Program). 2023. Soil and Rock Types. Earthquake Web Site. https://training.fema.gov/emiweb/earthquake/neh0102360.htm. Accessed September 2023.

NMFS (National Marine Fisheries Service). 2019. ESA Recovery Plan for the Puget Sound Steelhead Distinct Population Segment (*Oncorhynchus mykiss*). December 20, 2019.

NMFS 2023. Protected Resources App. https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9. Accessed September 2023.

NOAA (National Oceanic and Atmospheric Administration). 2023a. Chinook Salmon. https://www.fisheries.noaa.gov/species/chinook-salmon. Accessed September 2023.

NOAA. 2023b. Steelhead Trout. https://www.fisheries.noaa.gov/species/steelhead-trout. Access September 2023.

Parametrix. 2010. City of Stanwood Shoreline Master Program. Revised Draft Shoreline Inventory and Analysis. Prepared by Parametrix, Bellevue, WA. April 2010.

Snohomish County. 2023. Snohomish County Planning and Development Services (PDS) Map Portal. http://gismaps.snoco.org/Html5Viewer/Index.html?viewer=pdsmapportal&layertheme=Critical%20Areas. Accessed September 2023.

SWIFD (Statewide Washington Integrated Fish Distribution database). 2023. SWIFD Web Map. https://geo.nwifc.org/swifd/. Accessed September 2023.

Sumner, J.P., M.J. Vepraskas, and R.K. Kolka. 2009. Methods to Evaluate Normal Rainfall for Short-Term Wetland Hydrology Assessment. USDA (U.S. Department of Agriculture) Northern Research Station. *Wetlands* Volume 29, No. 3 (September 2009), pp. 1049-1062.

Thomas, B.E., J.M. Wilkinson, and S.S. Embry. 1997. *The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington*. Water-Resources Investigations Report 96-4312. U.S. Department of the Interior, U.S. Geological Survey, Branch of Information Services.

USACE (U.S. Army Corps of Engineers). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. ERDC/EL TR-10-3. http://www.usace.army.mil/CECW/Documents/cecwo/reg/west_mt_finalssupp.pdf.

USDA NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 2023. Web Soil Survey. https://websoilsurvey.nrcs.usda.gov/app/. Accessed September 2023.

USFWS (U.S. Fish and Wildlife Service). 2019. Marbled Murrelet (Brachyramphus marmoratus) 5-Year Status Review. Washington Fish and Wildlife Office, Lacey, WA.

USFWS. 2023a. National Wetlands Inventory. Wetlands Online Mapper. http://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 2023.

USFWS. 2023b. Customized IPaC Trust Resource Report. Generated September 2023. https://ecos.fws.gov/ipac/.

USFWS. 2023c. Bull Trout. https://www.fws.gov/species/bull-trout-salvelinus-confluentus. Accessed September 2023.

WDFW (Washington Department of Fish and Wildlife). 2023a. SalmonScape. http://wdfw.wa.gov/mapping/salmonscape Accessed September 2023.

WDFW. 2023b. Priority Habitats and Species on the Web. https://geodataservices.wdfw.wa.gov/hp/phs/. Accessed September 2023.

WDFW. 2023c. Washington State Fish Passage. https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html. Accessed September 2023.

WDFW. 2023d. American White Pelican. https://wdfw.wa.gov/species-habitats/species/pelecanus-erythrorhynchos. Accessed September 2023.

WDFW. 2023e. Gray Whale. https://wdfw.wa.gov/species-habitats/species/eschrichtius-robustus. Accessed September 2023.

WDFW. 2023f. Common Loon. https://wdfw.wa.gov/sites/default/files/2019-03/common_loon.pdf. Accessed September 2023.

WDFW. 2023g. Larch Mountain Salamander. https://wdfw.wa.gov/species-habitats/species/plethodon-larselli. Accessed September 2023.

WDFW. 2023h. Pygmy Whitefish. https://wdfw.wa.gov/sites/default/files/2019-03/pygmy_whitefish.pdf. Accessed September 2023.

WDFW. 2023i. Margined Sculpin. https://wdfw.wa.gov/sites/default/files/2019-03/margined_sculpin.pdf. Accessed September 2023.

WDFW. 2023j. Olympic Mudminnow. https://wdfw.wa.gov/sites/default/files/2019-03/olympic_mudminnow.pdf. Accessed September 2023.