

CITY OF LACEY LIFT STATION 6 REHABILITATION

Critical Areas Report

Prepared for
Conсор and City of Lacey

June 2023



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TABLE OF CONTENTS

Lacey Lift Station – Lift Station 6 Critical Areas Report

	<u>Page</u>
1.0 Introduction	1
1.1 Purpose	1
1.2 Proposed Project	1
1.3 Summary of Findings.....	2
2.0 Methods	2
2.1 Review of Existing Documentation	2
2.2 Wetland Identification, Delineation, and Classification.....	3
2.3 Wetland Functional Assessment.....	3
2.4 Fish and Wildlife Habitat Conservation Areas (Habitat).....	4
3.0 Results	4
3.1 Wetland 1	4
5.0 Project Impacts	9
5.1 Mitigation Measures.....	9
5.2 Limitations	10
6.0 References	10

Appendices

A. Figures.....	A-1
B. Wetland Photographs	B-1
C. Wetland Determination Data Forms.....	C-1
D. Wetland Rating Forms	D-1

List of Photos

Photo 1 Wetland 1, DP1 facing southwestB-1
Photo 2 Wetland 1, facing southB-1
Photo 3.....B-2
Photo 4.....B-2
Photo 5.....B-3
Photo 6.....B-3

List of Tables

Table 1 Special-Status Species and Habitats Potentially Present in the Study
Area 8
Table D-1 Wetland 1 Summary Information D-1

LACEY LIFT STATION – LIFT STATION 6

Critical Areas Report

1.0 Introduction

1.1 Purpose

The City of Lacey (City) proposes to improve an existing wastewater lift station (Lift Station 6; proposed project) located in Lacey, Washington (**Figure 1**). At the request of the City and Consor., Environmental Science Associates (ESA) biologists reviewed the parcel per the scope of work, identified and delineated critical areas (wetlands and priority habitats) (**Figure 2**), and prepared this report to inform project planning and permitting. The study area was limited to within 200 feet of the proposed project area and does not include detailed evaluations or delineations of off-site critical areas.

This purpose of this report is to summarize how the proposed project adheres to regulatory requirements described in Lacey Municipal Code (LMC) Chapter 14.28 – Wetlands Protection, Chapter 14.33 – Habitat Conservation Areas Protection and Chapter 14.26 – Shoreline Master Plan. The report provides a brief overview of the proposed project, discusses mapped critical areas and natural resources, presents the results of the field investigation, and documents potential regulatory implications associated with identified critical areas. Other types of critical areas regulated by the City, such as geographically hazardous areas, frequently flooded areas, and critical aquifer recharge areas, are not addressed in this report.

1.2 Proposed Project

The City is looking to improve and upgrade services associated with six lift stations to meet projected wastewater pumping requirements as part of an ongoing effort to improve the reliability of existing lift stations throughout the city. This proposed project involves the improvement of Lift Station 6.

The study area consists of parcel 83450100000 and the western portion of parcel 11828110801 at 5611 32nd Court SE in Lacey (Figure 1). The proposed project area covers approximately 2,500 square feet of the study area and includes the existing lift station. Land use surrounding the study area consists of mostly single-family residential housing, with an undeveloped wetland south and southeast of the study area, and Hicks Lake over 0.25 miles east of the study area. No change in land use is proposed or anticipated. The study area is located within the NW quarter of Section 28 of Township 18 North, Range 1 West. The parcels are zoned Low-Density Residential and Natural under the jurisdiction of the City.

1.3 Summary of Findings

ESA identified and delineated one wetland within the study area, Wetland 1. Wetland 1 is a Category II depression and flats, palustrine forested (PFO)/palustrine shrub scrub (PSS) wetland feature along the southern slope of the study area. Wetland 1 is approximately 0.18 acres in size and extends off-site to the east, west, and south and ultimately connects with Hick’s Lake, located 0.3 miles to the east. Per LMC 14.28.280(C)(2)(a), Category II wetlands with a medium habitat score require a 110-foot standard buffer if mitigation measures are implemented. The entire lift station is within the 110-foot buffer, and buffer averaging or avoidance of buffer impacts are not feasible.

The project would redevelop an existing lift station within a paved/graveled/sparsely vegetated wetland buffer and Natural shoreline designation. No impacts are proposed within the wetland, but 415 square feet of new impervious surface (permanent impact) is proposed in the wetland buffer. The existing wet/dry wells will be decommissioned and replanted with native groundcover and shrubs (265 sf). Wetland buffer areas temporarily disturbed during construction (and not being converted to impervious surface) will be restored with native seeding following proposed site improvements. One hazard tree required for removal is exempt from replacement requirements.

Under LMC 14.28.120(H), utility facilities are allowed in buffers with mitigation as long as best management practices are implemented to protect critical areas.

2.0 Methods

ESA biologists reviewed existing information and conducted a field investigation to identify and assess critical areas. The field investigation was conducted by ESA biologists Maggie Bradshaw and James Watson on August 4, 2022.

2.1 Review of Existing Documentation

Prior to conducting the field assessment, ESA biologists reviewed the following data sources for specific information about the ecological and geographic conditions within the vicinity of the study area:

- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2022a)
- USFWS Information for Planning and Consultation species and habitat database (USFWS 2022b)
- Natural Resources Conservation Service Web Soil Survey (NRCS 2022a)
- Washington Department of Fish and Wildlife Priority Habitats and Species mapping (WDFW 2000)
- Washington Department of Natural Resources National Heritage Program online mapping (WDNR 2023)

- Thurston County interactive map (Thurston County 2022)
- City of Lacey Zoning map (City of Lacey 2022)
- Northwest Indian Fisheries Commission Statewide Integrated Fish Distribution (Northwest Indian Fisheries Commission 2022)

The collected information was used as a baseline for the field assessment and delineation.

2.2 Wetland Identification, Delineation, and Classification

ESA biologists delineated wetlands according to local, state, and federal guidelines within the project limits. Wetlands were delineated using the *Routine Determination Method in the U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region – Version 2.0* (Regional Supplement) (USACE 2010) as approved by the Washington State Department of Ecology (Ecology). These methods rely on the presence of three criteria to determine wetland areas: (1) the dominance of wetland (i.e., hydrophytic) plant species, (2) the presence of hydric soils, and (3) indicators of wetland hydrology, such as soil saturation within the top 12 inches of the surface or evidence of ponded water. Wetland habitats were assessed using the USFWS habitat classification system (Cowardin et al. 1979).

Site-specific delineation methods include traversing the study area to observe surface indicators of wetlands (reeds, rushes, willows, etc., and saturated soils or standing water) and establishing at least one set of paired data plots (DP#) to characterize wetland and non-wetland conditions. The methods also included establishing a minimum of one wetland plot in a low spot that overlaps with wetland mapping (DP1).

Data plots were marked with orange flagging labeled DP1 (wetland) or DP2 (upland). The flags and data plot locations were recorded using the ArcGIS Fieldmaps application on an Apple iPad paired with an Arrow 100 GNSS Receiver device. Where the wetland extended beyond the study area, only those portions of the wetland within or adjacent to the study area was flagged and surveyed.

2.3 Wetland Functional Assessment

Functions for the wetland within the study area were classified using the results from the Rating System (Hruby 2014). The Rating System first classifies a wetland's hydrogeomorphic (HGM) classification and then assigns multiple aspects relating to each function type (i.e., water quality, hydrology, and habitat) a high, medium, or low level of function based on the wetland's attributes. The HGM classification is based on three fundamental factors that influence how wetlands function: (1) position in the landscape (geomorphic setting), (2) water source (hydrology), and (3) the flow and fluctuation of the water once in the wetland (hydrodynamics).

Per LMC 14.28.100, the City has codified use of the Rating System and assigns wetland buffer widths based on wetland category, adjacent land use intensity, habitat score, whether the wetland

is listed as having high conservation value, and whether mitigation measures are implemented. Per LMC 14.28.280(C)(2)(a) the City’s wetland buffers range from 40 feet to 225 feet.

2.4 Fish and Wildlife Habitat Conservation Areas (Habitat)

The City regulates lakes and streams as fish and wildlife habitat conservation areas under LMC Chapter 14.33. The state water typing system (WAC 222-16-030) classifies streams as S, F, Np, or Ns, depending on their “shoreline of the state” status, presence of fish habitat, annual flow rate (seasonal or perennial), and connections to other waters. The City also assigns buffers to fish and wildlife habitat conservation areas (lakes and streams) to protect habitat functions.

3.0 Results

The following sections describe the results of the review of existing information and the field investigation. The field investigation was conducted on August 4, 2022. ESA identified and delineated one wetland within the study area, Wetland 1 (**Figures 5 and 6**). Only the northern edge of the wetland boundary that occurred on-site was flagged.

The field investigation was conducted on August 4, 2022 during the growing season. In the 2 months preceding the field investigation, precipitation was higher than normal in June (70 percent increase) and lower than normal in July (89 percent decrease) (NRCS 2022b). There were no rain events in the 2 weeks prior to the field investigation. Daily precipitation data was generated from the Seattle-Tacoma weather station.

3.1 Wetland 1

Wetland 1 is a category II depressional and flats, palustrine forested (PFO)/palustrine shrub scrub (PSS) wetland feature delineated along the southern slope of the study area. Wetland 1 extends off-site to the east, west, and south. During the time of field investigation, at least 2 inches of standing water (A1) was observed 2 feet away from DP1. At DP1, biologists observed a high water table (A2) and soil saturation (A3) measured to the surface of the soil plot.

NWI maps one palustrine, unconsolidated bottom, permanently flooded, diked/impounded (PUBHh) wetland within the southern segment of the study area and one palustrine, scrub-shrub, seasonally flooded (PSSC) freshwater forested/shrub wetland southeast the study area, which is hydrologically connected to Hicks Lake located east of the site (Figure 3). The NWI mapping is consistent with the field findings. NWI also maps a short segment of stream that is encompassed within the wetland south of the study area, but no streams were mapped within or adjacent to the study area. Thurston County Permit mapper shows a palustrine, open water, shrub/scrub (POW/SS) wetland feature in the southern segment of the study area along with a palustrine shrub scrub east of previous mentioned wetland, corresponding with the NWI-mapped wetland.

ESA biologists created figures (**Appendix A**), logged representative wetland photographs (**Appendix B**), completed wetland determination data forms (**Appendix C**), and completed a Washington State Department of Ecology wetland rating form and associated maps (**Appendix**

D) for Wetland 1. Wetland characteristics and other relevant information are summarized in Appendix D-1 **Table 2**.

3.1.1 Soils

The Web Soil Survey maps Indianola loamy sand as the single soil type within the study area. Indianola loamy sand is a somewhat excessively drained soil that is common on sandy glacial outwash and considered nonhydic by the Natural Resources Conservation Service (NRCS 2022a). However, 15 percent of the mapped soil can include hydric soils (**Figure 4**). ESA observed soil conditions at DP1 during delineation. The entire layer (0–16 inches) within the data plot consisted of black (7.5YR 2.5/1) silt loam. Redoximorphic features were too saturated to view but biologists assumed soils were hydric based on presence of surface water adjacent to DP1 (**Photo 1**).

3.1.2 Hydrology

The study area lies within the Woodland Creek-Frontal Henderson Inlet subwatershed (Hydrologic Unit Code 171100190502) in the Deschutes watershed (Water Resource Inventory Area 13). The land that drains to the study area, and eventually into Henderson Inlet toward the east, is largely developed with mixed-density residential housing, community parks, and commercial land uses.

Wetland 1 is associated with Hicks Lake 0.3 miles to the east. Another large wetland complex, also associated with Hick’s Lake, is located approximately 0.4 miles to the southeast (**Figures 1 and 2**). The Northwest Indian Fisheries Commission (2022) also maps a Type F (fish bearing) stream within the wetland off-site to the southeast. The site is located outside of any floodplain; however, Wetland 1 likely holds overflow from Hick’s Lake during times of high flow (e.g., wet season). Marks of ponding were observed at 2 to 3 feet during the site visit.

Wetlands can both recharge and discharge groundwater based on their location in the landscape. Some freshwater wetlands are located at points where surface water enters an underground aquifer, thereby recharging groundwater supplies. Wetlands are also often points of groundwater discharge to the surface of the land, such as springs. No springs were observed on-site, but the majority of Wetland 1 is likely supported by a high groundwater table and overflow from Hick’s Lake. However, the project site is an existing lift station with a mix of impervious and pervious surfaces that minimally contributes to groundwater recharge.

3.1.3 Vegetation

No threatened, endangered, or sensitive plant species have been mapped on-site by the Washington Department of Natural Resources National Heritage Program. The closed mapped rare plant species is approximately 1.3 miles to the northeast near Woodland Creek Community Park, where an occurrence of Canadian St. John’s-wort was recorded in 1994. Additionally, the National Heritage Program has not identified Wetland 1 as a Wetland of High Conservation Value (WDNR 2023).

Wetland vegetation within the study area is mostly wooded with a mixed coniferous-deciduous forest primarily dominated by western red cedar (*Thuja plicata*) and bigleaf maple (*Acer macrophyllum*) in the tree canopy. The emergent class was dominated by reed canary grass (*Phalaris arundinacea*) and fringed willowherb (*Epilobium ciliatum*). Non-native or invasive vegetation present includes Himalayan blackberry (*Rubus bifrons*) (Photo 1).

Wetland buffer vegetation within the study area was dominated by black cottonwood (*Populus trichocarpa*) and bigleaf maple in the tree canopy. A few canopy trees are located on adjacent parcels that are developed as single-family residences, including a large western red cedar that is considered a hazard because it is leaning over the existing lift station. The understory was dominated by English ivy (*Hedera helix*) and Himalayan blackberry (Photos 3, 5 and 6). The entire developed neighborhood is in the wetland buffer and has a mix of coniferous trees, deciduous trees, and ornamental shrubs.

During the site visit, it was estimated that persistent vegetation covers over half the area of Wetland 1. Wetland vegetation can improve water quality through trapping sediment, removal of pollutants, and chemical detoxification. This is especially valuable to wetlands in the developed environment, such as Wetland 1. Similarly, wetland buffer vegetation can trap sediments and absorb pollutants, and aid in overall decreasing the amounts of pollutants that enter the wetland.

Additionally, vegetation in and on the edge of a wetland, primarily tall shrubs and trees, can enhance fish habitat through the shading/cooling of water, providing refuge to fish, and increasing overall organic matter input to the waterbody.

3.1.4 Habitat

The Washington Department of Fish and Wildlife Priority Habitats and Species map and USFWS Information for Planning and Consultation database list several federally and state-listed species that are potentially affected by anthropogenic activities within the vicinity of the study area. These species are summarized in **Table 1**.

The Olympic and Yelm (Mazama) pocket gophers are listed as an Important Species of Thurston County. The County depicts the soils as “less preferred” potentially due to high saturation in the soils. Burrowing activity was not observed during the field reconnaissance and delineation.

Wood ducks (*Aix sponsa*) were observed in a ponded area in the eastern, delineated end of Wetland 1. The Washington Department of Fish and Wildlife Priority Habitats and Species mapping depicts the study area as a wood duck breeding area. These cavity-nesting ducks nest primarily in late successional forests and riparian areas adjacent to low gradient rivers, sloughs, lakes, and beaver ponds (WDFW 2000). Wood ducks are neither federally nor state listed.

In addition to wood ducks, chickadee (*Parus* sp.), mallard (*Anas platyrhynchos*), osprey (*Pandion haliaetus*), spotted towhee (*Pipilo maculatus*), and song sparrow (*Melospiza melodia*) were observed in the vicinity. No snags will be removed as part of the project. Other wildlife anticipated in the vicinity include beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), racoon (*Procyon lotor*), possum (*Didelphis virginiana*), coyote (*Canis latrans*), and various raptors.

None of the species listed in Table 1 are likely to occur within the vicinity of the study area due to a lack of suitable habitat, and there are no known records of these species occurring in the vicinity of the study area. The large cedar proposed for removal does not have any suitable cavities for nesting and no impacts to cavity-nesting species would result.

**TABLE 1
SPECIAL-STATUS SPECIES AND HABITATS POTENTIALLY PRESENT IN THE STUDY AREA**

Type	Species Name (Scientific name)	Federal Status	State Status	Habitat Requirements	Present in Study Area or Vicinity?
Mammals	Olympia pocket gopher (<i>Thomomys mazama pugentensis</i>) Yelm pocket gopher (<i>Thomomys mazama yelmensis</i>)	LT, CH	LT	Loose sandy loam soils with edible plant cover. Primarily associated with prairies but may be present in grasses/lawns or disturbed areas with suitable soil.	No, the study area is mapped as “less preferred” on Thurston County’s geodata center. Soils are too saturated to provide suitable habitat.
	Little brown bat (<i>Myotis lucifugus</i>) Big brown bat (<i>Eptesicus fuscus</i>) Yuma myotis (<i>Myotis yumanensis</i>)	—	PS	Roosts primarily in tree cavities, rock crevices, caves, and mines. Forage primarily over or near water.	Mapped occurrence at the township level, but not likely to occur within the study area.
	Marbled murrelet (<i>Brachyramphus marmoratus</i>)	LT, CH	LE	Nests in old-growth and mature coniferous forests with proximity to marine waters.	No, most likely occurrences are on the Olympic Peninsula and the northern Cascade Range.
Birds	Wood duck (<i>Aix sponsa</i>)	—	PS	Nests in tree cavities primarily in late successional forests and riparian areas adjacent to low gradient rivers, sloughs, lakes, and beaver ponds.	Yes, present in the vicinity; uses cavities in standing dead trees as breeding sites. No snags will require removal for the project and no impacts are anticipated.
	Streaked horned lark (<i>Eremophila alpestris strigata</i>)	LT, CH	LE	Large expanses of bare or sparsely vegetated land, including fields, prairies, upper beaches, airports, and similar areas with sparse grassy vegetation.	No, the forested study area does not provide suitable habitat.
	Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	LT, CH	LE	Requires large blocks (≥200 acres) of riparian forest; not considered an active breeding species in Washington.	No, extirpated from Washington and Oregon as a breeder; no suitable habitat in study area.
Fish	Bull trout (<i>Salvelinus confluentus</i>)	LT, CH	C	Cold, stable stream channels with clean spawning and rearing gravel.	No, riparian areas or streams are not located within the study area.
Insects	Monarch butterfly (<i>Danaus plexippus</i>)	C	—	Weedy fields and sparsely vegetated habitats, typically near wetlands or riparian areas. Dependent on milkweed.	No, occurrences are concentrated along the Columbia and Snake Rivers.
	Taylor’s checkerspot (<i>Euphydryas editha taylori</i>)	LE, CH	LE	Open prairie and grassland, coastal bluffs and dunes, and small forest openings (balds).	No, the wetland buffer in the study area does not provide suitable habitat.
Flowering Plants	Golden paintbrush (<i>Castilleja levisecta</i>)	LT	LT	Open grasslands on glacial outwash and alluvial soils, as well as mima mounds.	No, the wetland buffer in the study area does not provide suitable habitat.

NOTES: C = Candidate; CH = Critical Habitat; LE = Listed Endangered; LT = Listed Threatened, PS = Priority Species

SOURCES: USFWS 2022b; WDFW 2022.

3.1.5 Human Use

This site is currently a lift station, with very little human use outside of maintenance of the facility. The on-site wetland provides a natural, scenic amenity for the neighborhood at 32nd Court SE. The wetland's primary use is fish and wildlife habitat. No recreational activities occur in the wetland in the project vicinity as there are no public access or walkways through the wetland. No change in human use as a result of the project is anticipated.

5.0 Project Impacts

All direct wetland impacts have been avoided; however, impacts to the wetland buffer were unavoidable. The proposed project will result in 415 square feet of permanent impacts to the buffer of Wetland A through the conversion of existing pervious surface and/or ground to impervious surface. The project proposes to construct a new vault within the wetland buffer. Additionally, a concrete pad is proposed to support the new vault and the rim of the well in areas that are currently covered by grass or gravel.

No impacts to the soil, hydrology, vegetation, or habitat of Wetland A are anticipated as a result of the project. Temporary impacts to Wetland A's habitat use may occur during construction due to construction noise, but this habitat will return to existing conditions/use post-construction. Additionally, no net loss of buffer function is anticipated as permanent impacts to wetland buffer vegetation will be offset by the proposed mitigation, described below. The large hazard tree (cedar) proposed for removal does not have any suitable cavities for nesting and no impacts to cavity-nesting species would result. Furthermore, no change in human use as a result of the project is anticipated and human use will continue to be minimal, if at all, pre- and post-construction.

5.1 Mitigation Measures

The term mitigation is used broadly to include avoidance and minimization of construction impacts as well as compensation for permanent loss of the regulated resource. Avoidance is not possible for this project as the entire site is within the minimum regulated wetland buffer (110 feet).

Minimization measures include:

- Redeveloping existing paved surfaces and limiting new permanent disturbance to the minimum area needed to safely access and maintain new lift station components.
- Restoring areas temporarily disturbed during construction to native groundcover. This includes seeding areas in between proposed utility components with a drought-tolerant native grass species.

Mitigation measures to offset new impervious surface include:

- Removing existing impervious surface and enhancing with native groundcover and shrubs (265 square feet)

- Enhancing the on-site wetland buffer with native groundcover and shrubs.
- Removing non-native invasive species such as Himalayan blackberry and English ivy prior to planting natives.

5.2 Limitations

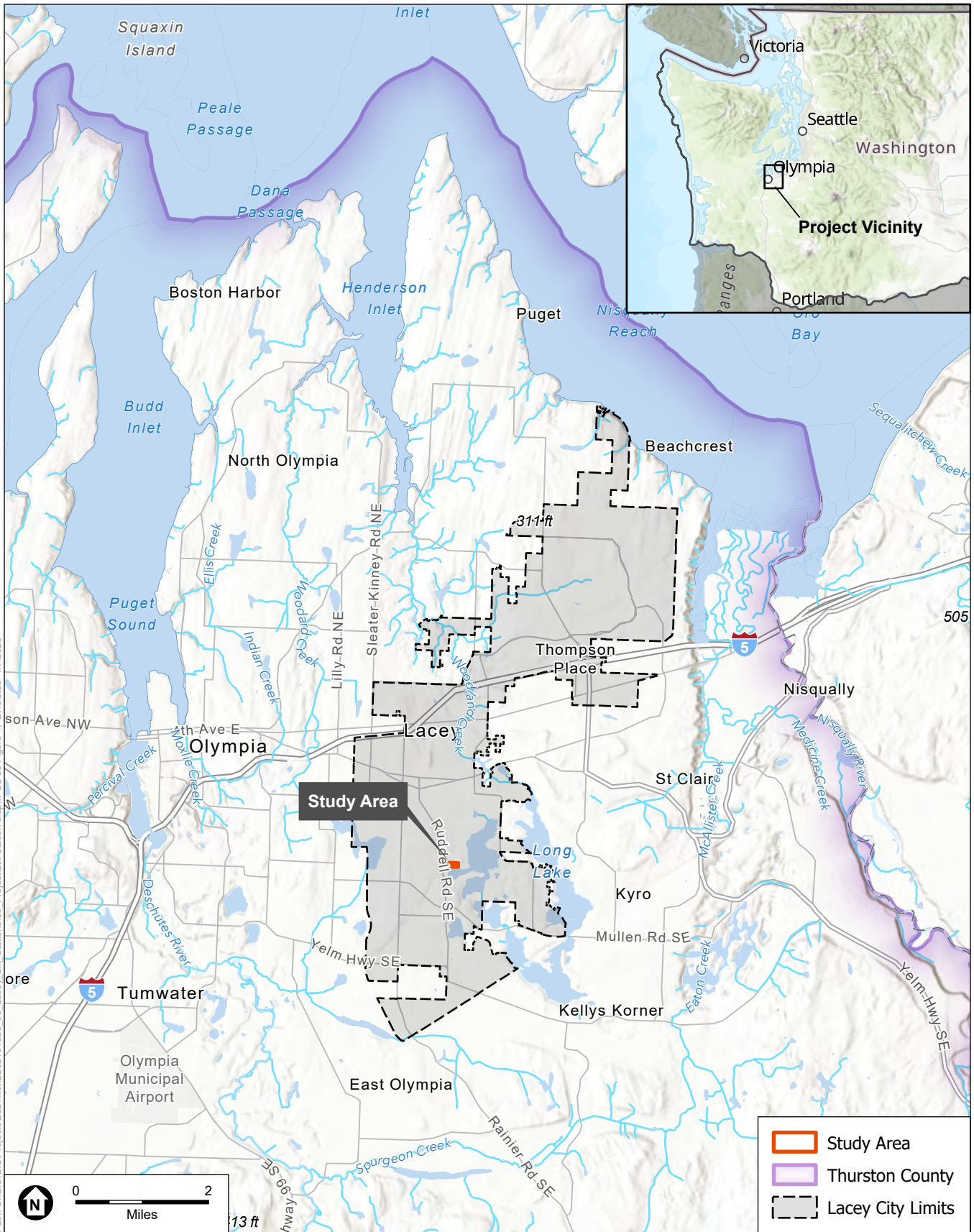
Within the limitations of schedule, budget, scope-of-work, and seasonal constraints, we warrant that this investigation was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time this investigation was performed. The results and conclusions of this report represent the authors' best professional judgment, based on information provided by the project proponent in addition to that obtained during this study. No other warranty, expressed or implied, is made.

6.0 References

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Appendix A

Figures

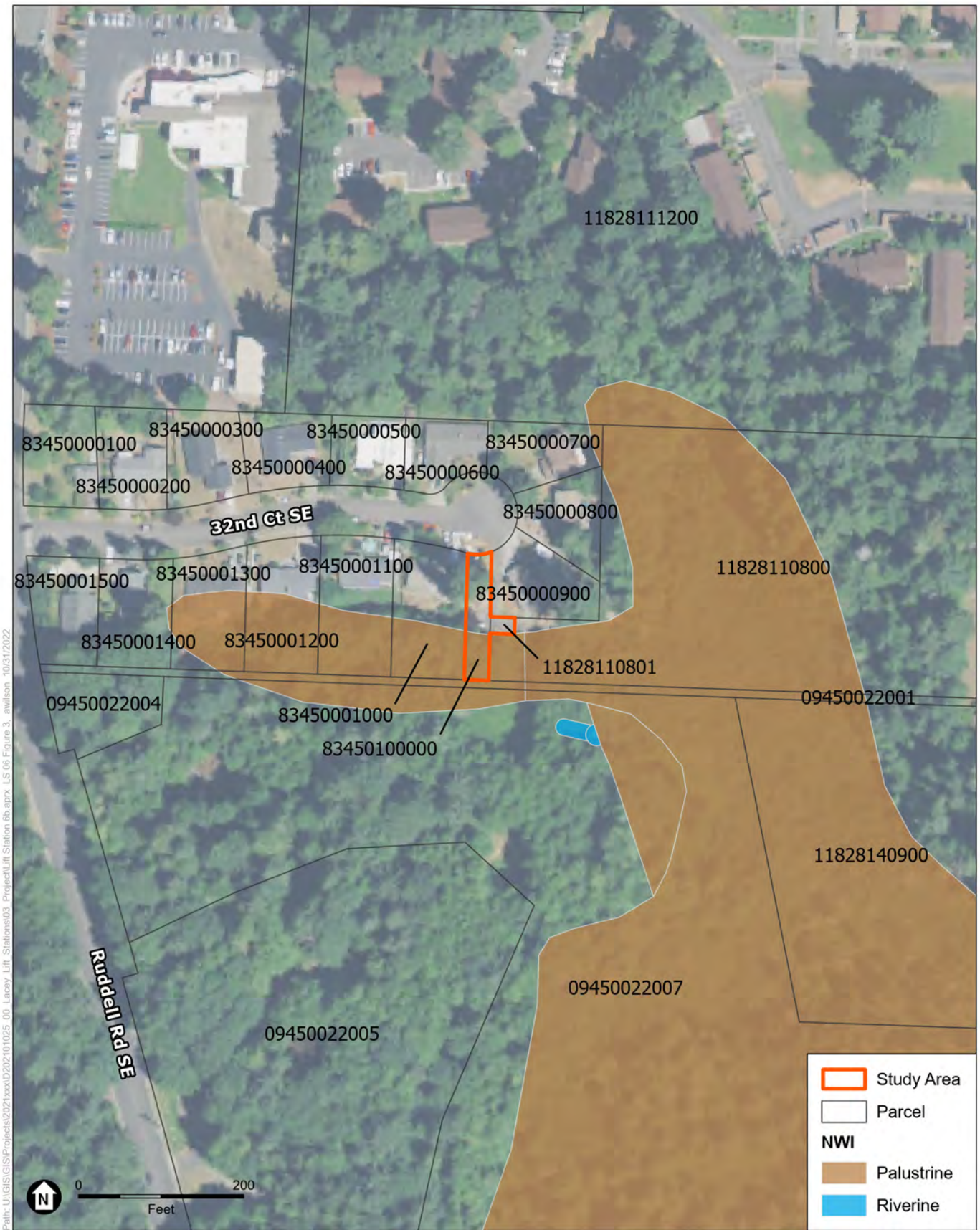


SOURCE: Basemap: Esri, 2022; ; Hydrography: WA DNR, 2021

Lacey Lift Stations

Figure 1
Project Vicinity
Lift Station 06

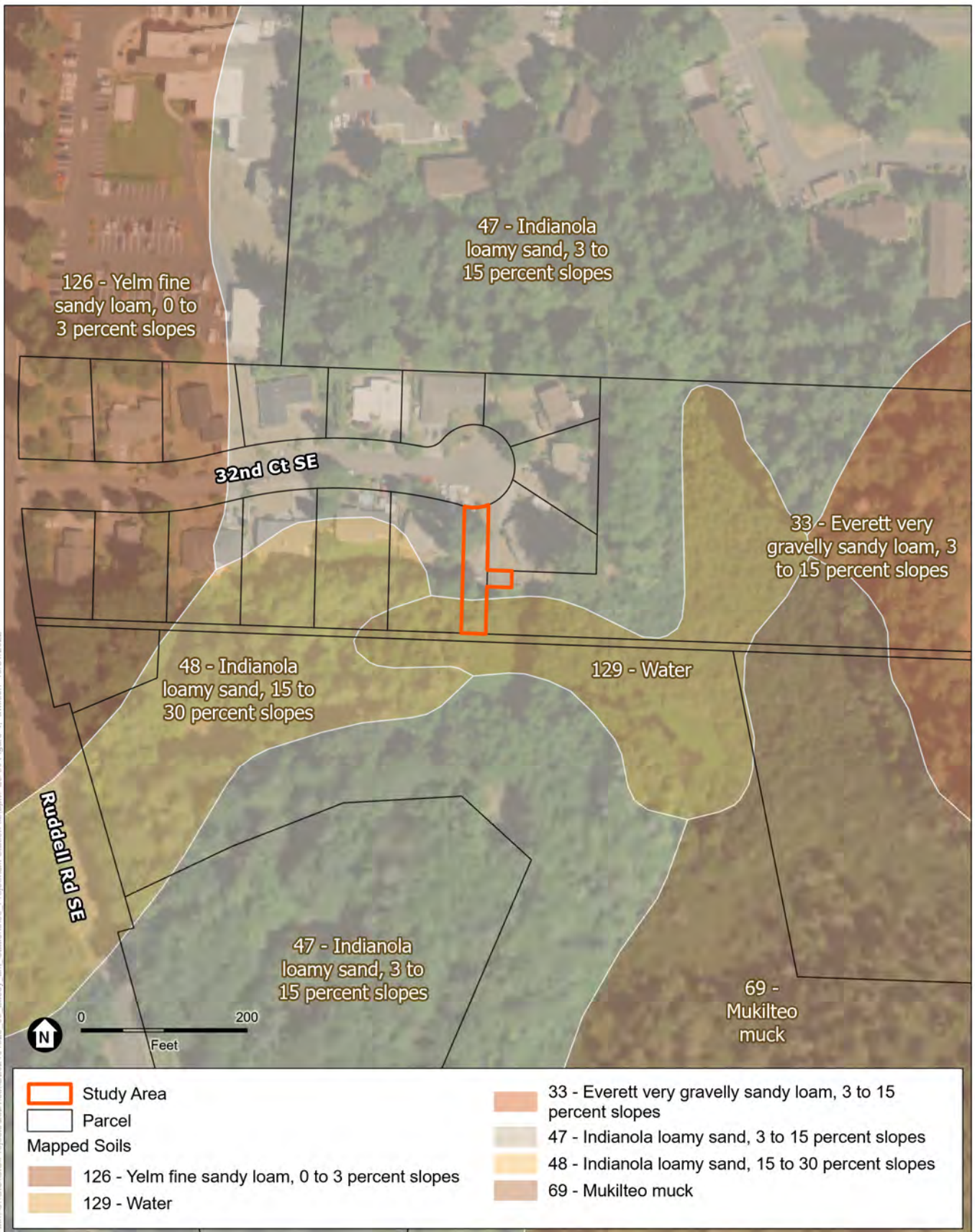




SOURCE: Imagery: USDA NAIP, 2021; Parcels: Thurston County, 2019; Recorded Wetlands: NWI, 2022

Lacey Lift Stations

Figure 2
National Wetland Inventory
Lift Station 6



SOURCE: Imagery: USDA NAIP, 2021; Parcels: Thurston County, 2019; Soils: USDA SSURGO, 2022

Lacey Lift Station

Figure 3
NRCS Soils
List Station 6





Path: U:\GIS\GIS\Projects\2021\box\2022\101025_00_Lacey_Lift_Station\03_Project\Lift_Station\06.appx_LS_06_Figure 2_ awilson_10/31/2022

SOURCE: Imagery: USDA NAIP, 2021; Parcels: Thurston County, 2019; Recorded Wetlands: NWI, 2022; Survey Data: ESA, 2022 Lacey Lift Station

Accuracy statement: Wetland data plots, boundaries and other critical areas were mapped using an Eos Arrow GNSS bluetooth receiver with SBAS real-time corrections and a tablet data collector. All surveyed data recorded horizontal accuracy below 1 meter.

Figure 4
Critical Areas - Wetland Delineation Map
Lift Station 6





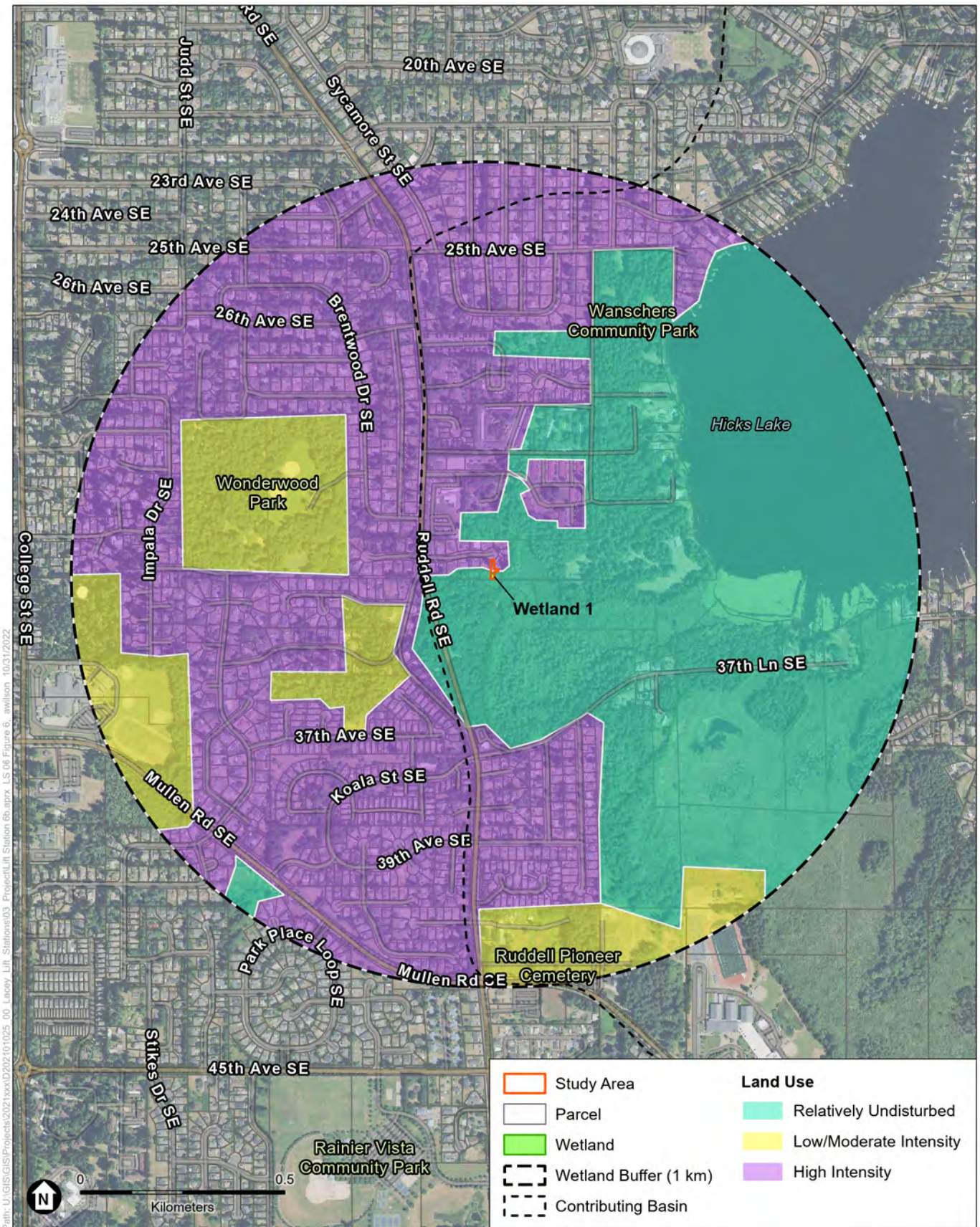
Path: U:\GIS\GISProjects\2021\hoo\202101025_00_Lacey_Lift_Stations\03_Project\Lift Station 6B.aprx LS 06 Figure 5_ awilson_10/31/2022

SOURCE: Imagery: USDA NAIP, 2021; Parcels: Thurston County, 2019; Land Use, Wetland: ESA, 2022

Lacey Lift Stations

Figure 5
Wetland Rating Figure A
Lift Station 6





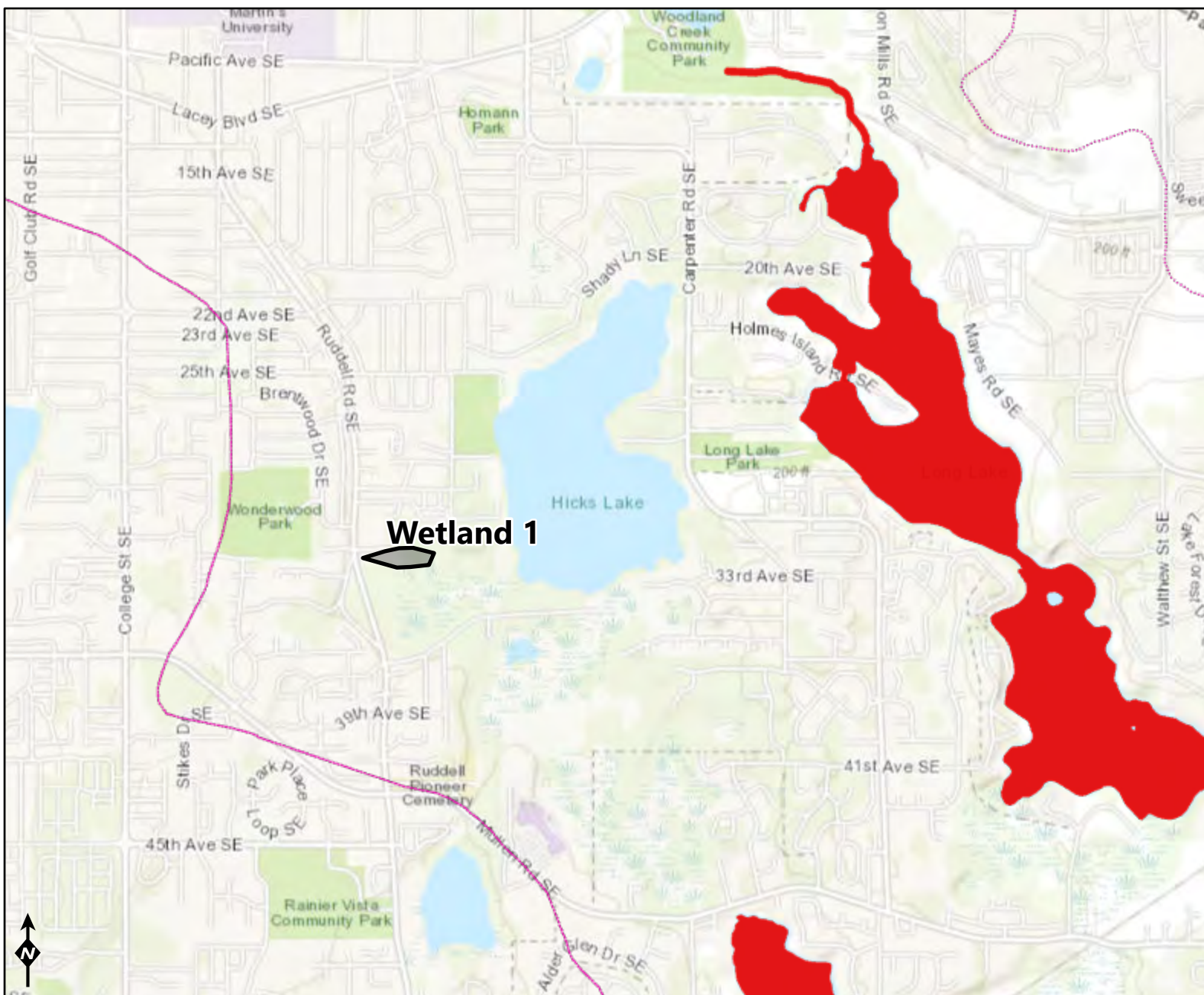
SOURCE: Imagery: USDA NAIP, 2021; Parcels: Thurston County, 2019; Land Use, Wetland: ESA, 2022

Lacey Lift Stations

Figure 6
 Wetland Rating Figure B B
 Lift Station 6



303(d) - LS06



Assessed Water/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

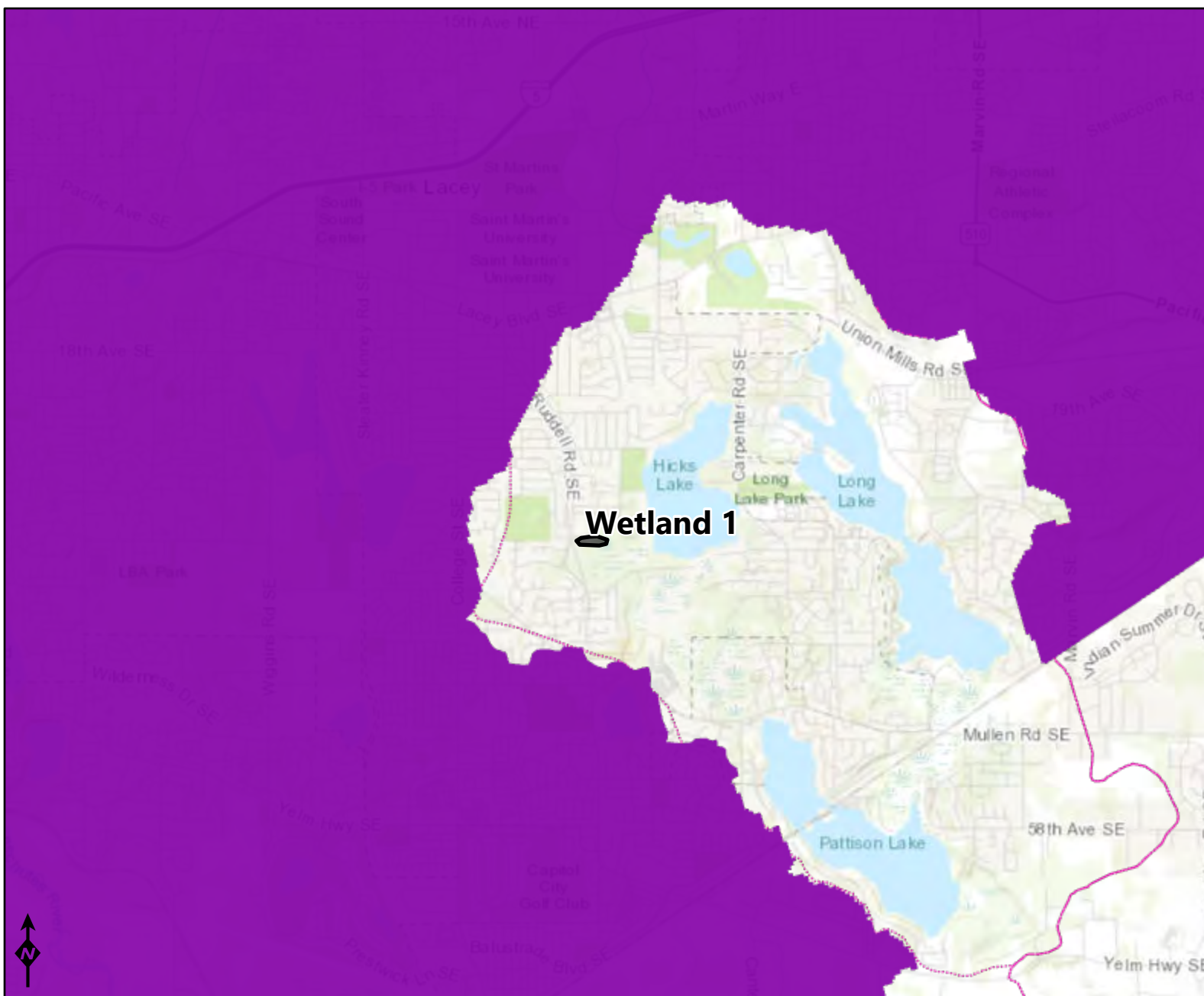
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)

- HUC boundary

Figure 7
303(d) Listed Waters

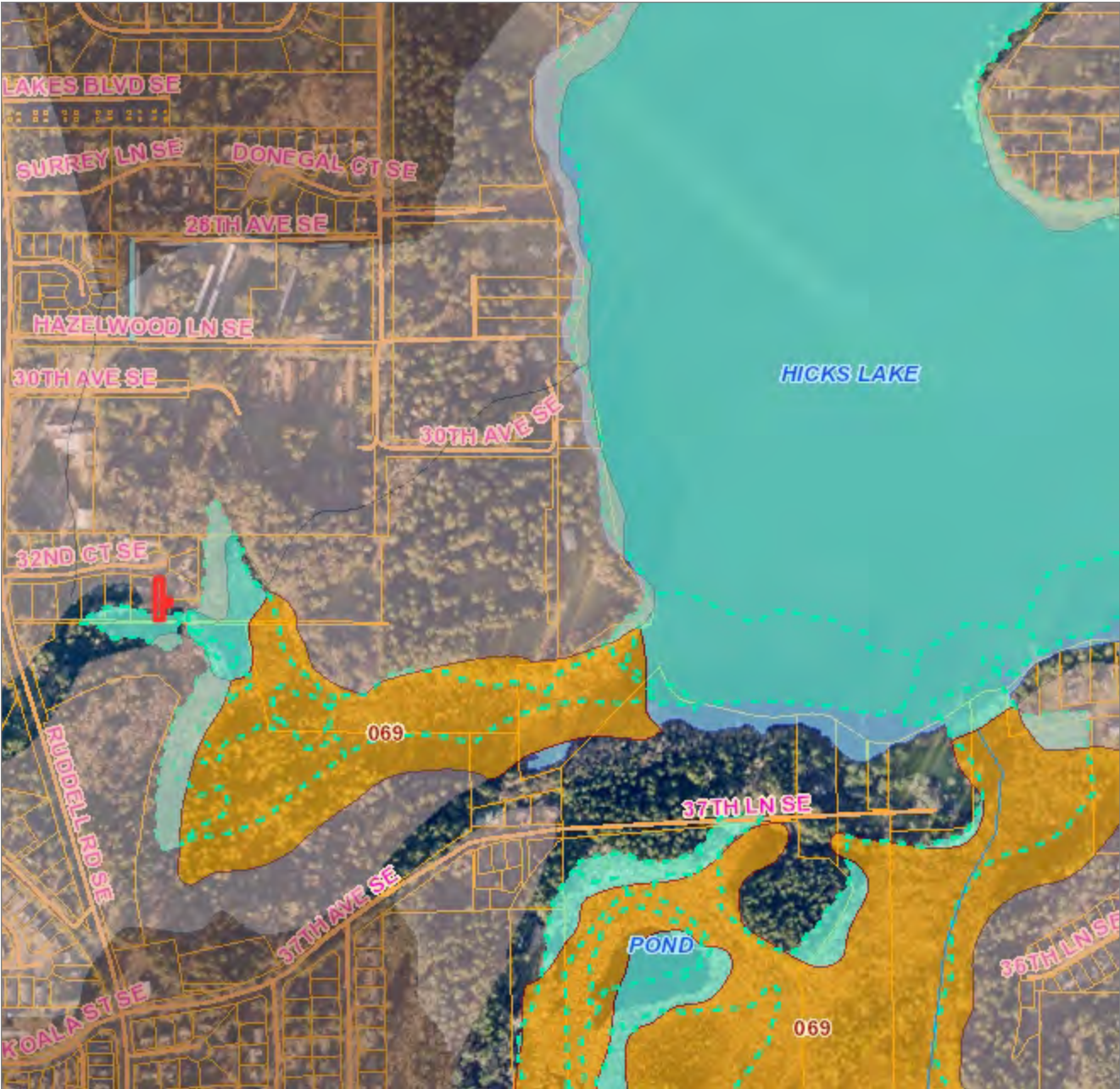
TMDL - LS06



- WQ Improvement Projects**
- Approved
 - In Development
- Subbasins (12 digit HUCs)**
- HUC boundary

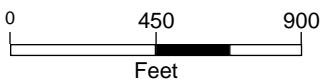
Figure 8
TMDL

Thurston County - Lift Station 6



- Legend**
- Mazama Pocket Gopher Areas
 - Occupied
 - Near
 - Oregon Vesper Sparrow Areas
 - Taylor's Checkerspot Butterfly Areas
 - Oregon Spotted Frog Areas
 - Mazama Pocket Gopher Soils
 - Less Preferred
 - More Preferred
 - Streams
 - Wetland Delineations
 - Verified
 - Delineated
 - Unverified
 - Parcel Boundary
 - Unknown
 - Roads
 - City
 - County
 - Government
 - Private
 - State
 - Hydric Soils
 - Wetlands
 - Waterbodies
 - Parcel Boundaries
 - Roads - Major
 - Ramp

Scale 1: 10,406



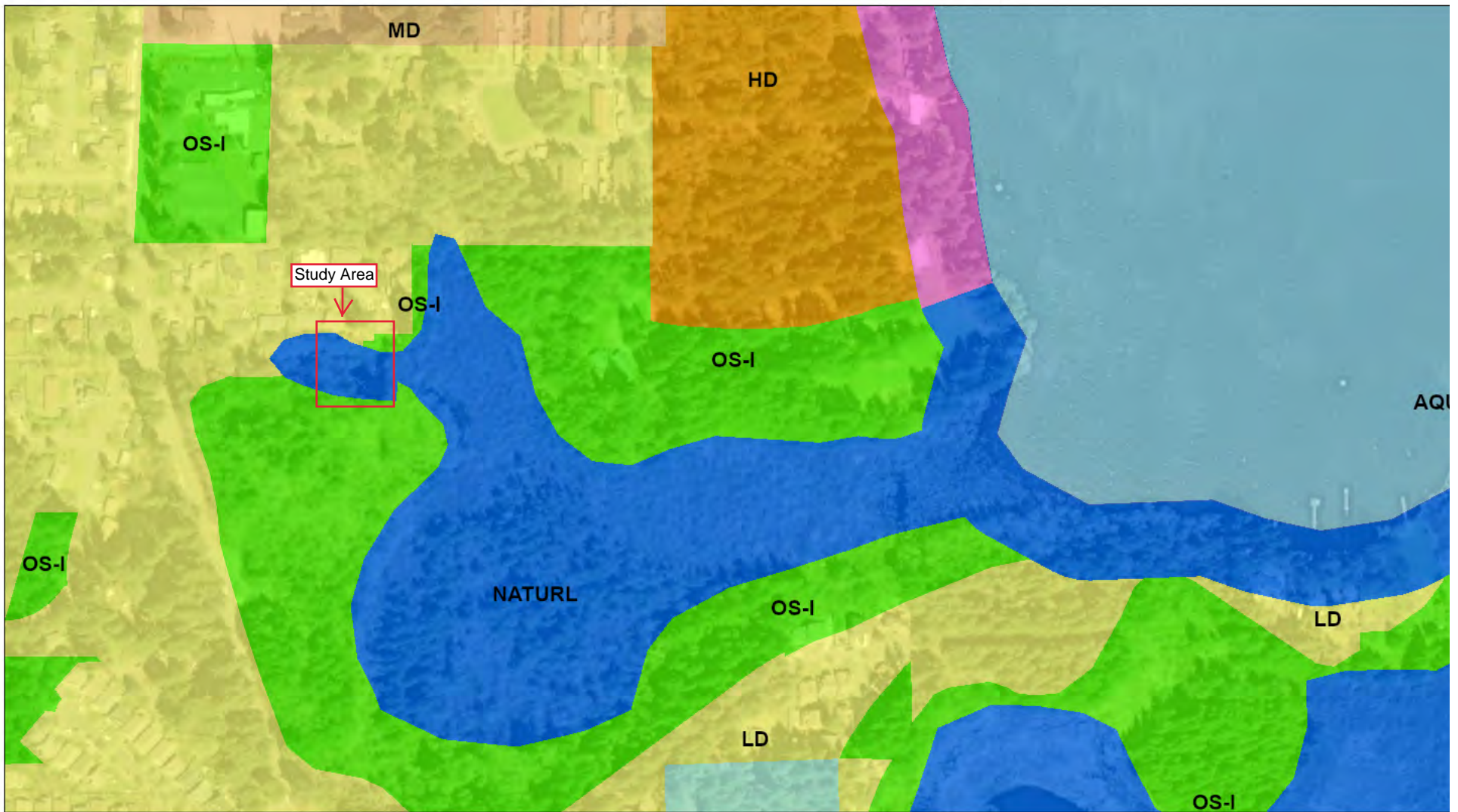
Map Created Using GeoData Public Website
Published: 10/31/2022

Note:



The information included on this map has been compiled by Thurston County staff from a variety of sources and is subject to change without notice. Additional elements may be present in reality that are not represented on the map. Ortho-photos and other data may not align. The boundaries depicted by these datasets are approximate. This document is not intended for use as a survey product. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. Thurston County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. In no event shall Thurston County be liable for direct, indirect, incidental, consequential, special, or tort damages of any kind, including, but not limited to, lost revenues or lost profits, real or anticipated, resulting from the use, misuse or reliance of the information contained on this map. If any portion of this map or disclaimer is missing or altered, Thurston County removes itself from all responsibility for the map and the data contained within. The burden for determining fitness for use lies entirely with the user and the user is solely responsible for understanding the accuracy limitation of the information contained in this map. Authorized for 3rd Party reproduction for personal use only.

City of Lacey, WA - Zoning Map



October 31, 2022

Lacey City Limits

Lacey Zoning (August 2022)

LD - Low Density Residential

MD - Moderate Density Residential

HD - High Density Residential

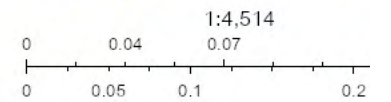
C - Cemetery

OS-I - Open Space Institutional

URBCON - Urban Conservancy

NATURL - Natural

AQUATC - Lake/Aquatic



Appendix B

Wetland Photographs





SOURCE: ESA, 2022

Lacey Lift Station – Lift Station 6

Photo 1

Wetland 1, DP1 facing southwest



SOURCE: ESA, 2022

Lacey Lift Station – Lift Station 6

Photo 2

Wetland 1, facing south



SOURCE: ESA, 2022

Lacey Lift Station – Lift Station 6

Photo 3

Looking southwest at the wetland buffer and wetland



SOURCE: GoogleEarth, 2022

Lacey Lift Station – Lift Station 6

Photo 4

Looking south at the entrance to Lift Station 6



SOURCE: ESA, 2022

Lacey Lift Station – Lift Station 6

Photo 5

English ivy and Himalayan blackberry in the buffer



SOURCE: ESA, 2022

Lacey Lift Station – Lift Station 6

Photo 6

Existing lift station in foreground, wetland in the background

Appendix C
**Wetland Determination Data
Forms**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lacey Lift Stations City/County: Lacey/Thurston Sampling Date: 4-Aug-2022
 Applicant/Owner: City of Lacey State: Washington Sampling Point: DP1
 Investigator(s): James Watson, Maggie Bradshaw Section, Township, Range: S28 T18N R1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): LRR A Lat: 47.018605 Long: -122.808245 Datum: - WGS84
 Soil Map Unit Name: Indianola loamy sand, 5 to 15 percent slopes NWI classification: Wetland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation no Soil no or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation no Soil no or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u> ft/radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Acer macrophyllum</u>	20	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>4</u> (A)
2. <u>Thuja plicata</u>	15	yes	FAC	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. <u>Salix scouleriana</u>	2	no	FAC	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>80</u> % (A/B)
4. _____	0			Prevalence Index worksheet:	
	37 =	Total Cover		Total % Cover of:	Multiply by:
Sapling/Shrub Stratum (Plot size: <u>30</u> ft/radius)				OBL species	<u>0</u> x 1= <u>0</u>
1. _____	0			FACW species	<u>140</u> x 2= <u>280</u>
2. _____	0			FAC species	<u>5</u> x 3= <u>15</u>
3. _____	0			FACU species	<u>10</u> x 4= <u>0</u>
4. _____	0			UPL species	<u>0</u> x 5= _____
5. _____	0			Column Totals:	<u>155</u> (A) <u>335</u> (B)
	0 =	Total Cover		Prevalence Index = B/A =	<u>2.16</u>
Herb Stratum (Plot size: <u>5</u> ft/radius)				Hydrophytic Vegetation Indicators:	
1. <u>Epilobium ciliatum</u>	25	yes	FACW	_____ 1-Rapid Test For Hydrophytic Vegetation	
2. <u>Phalaris arundinacea</u>	10	yes	FACW	<u>yes</u> 2-Dominance Test is >50%	
3. _____	0			_____ 3-Prevalence Index is ≤3.0 ¹	
4. _____	0			_____ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0			_____ 5-Wetland Non-Vascular Plants ¹	
6. _____	0			_____ 6-Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	0			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	0			Hydrophytic Vegetation Present?	
9. _____	0			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
10. _____	0				
11. _____	0				
	35 =	Total Cover			
Woody Vine Stratum (Plot size: <u>30</u>)					
1. <u>Rubus bifrons</u>	20	yes	FAC		
2. _____	0				
	20 =	Total Cover			
% Bare Ground in Herb Stratum <u>65</u>					
Remarks:					

SOIL

Sampling Point: DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 16	7.5YR 2.5/1	100		0			Silt loam	
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input checked="" type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): 0

Hydric Soil Present? Yes No

Remarks:
 Soils too saturated to view redox; assume hydric based in presence of water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? yes Depth (Inches): 2
 Water Table Present? yes Depth (Inches): 0
 Saturation Present? yes Depth (Inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Surface water present 2 feet away.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Lacey Lift Stations City/County: Lacey/Thurston Sampling Date: 4-Aug-2022
 Applicant/Owner: City of Lacey State: Washington Sampling Point: DP2
 Investigator(s): James Watson, Maggie Bradshaw Section, Township, Range: S28 T18N R1W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%): 4
 Subregion (LRR): LRR A Lat: 45.9830143333 Long: -122.851366667 Datum: - WGS84
 Soil Map Unit Name: Rafton silt loam, protected NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation no Soil no or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation no Soil no or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Remarks:
 Not all three parameters are met.

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u> ft/radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> % (A/B)																												
1. <u>Populus trichocarpa</u>		<u>40</u>	<u>yes</u>	<u>FACW</u>																													
2. <u>Acer macrophyllum</u>		<u>25</u>	<u>yes</u>	<u>FACU</u>																													
3. <u>Alnus rubra</u>		<u>15</u>	<u>no</u>	<u>FAC</u>																													
4. _____		<u>0</u>																															
		<u>80</u> =	Total Cover																														
Sapling/Shrub Stratum	(Plot size: <u>15</u> ft/radius)				Prevalence Index worksheet: <table border="0"> <tr> <td></td> <td>Total % Cover of:</td> <td></td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td><u>0</u></td> <td>x 1=</td> <td><u>0</u></td> </tr> <tr> <td>FACW species</td> <td><u>40</u></td> <td>x 2=</td> <td><u>80</u></td> </tr> <tr> <td>FAC species</td> <td><u>30</u></td> <td>x 3=</td> <td><u>90</u></td> </tr> <tr> <td>FACU species</td> <td><u>105</u></td> <td>x 4=</td> <td><u>420</u></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5=</td> <td></td> </tr> <tr> <td>Column Totals:</td> <td><u>175</u> (A)</td> <td></td> <td><u>590</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.37</u>		Total % Cover of:		Multiply by:	OBL species	<u>0</u>	x 1=	<u>0</u>	FACW species	<u>40</u>	x 2=	<u>80</u>	FAC species	<u>30</u>	x 3=	<u>90</u>	FACU species	<u>105</u>	x 4=	<u>420</u>	UPL species	<u>0</u>	x 5=		Column Totals:	<u>175</u> (A)		<u>590</u> (B)
	Total % Cover of:		Multiply by:																														
OBL species	<u>0</u>	x 1=	<u>0</u>																														
FACW species	<u>40</u>	x 2=	<u>80</u>																														
FAC species	<u>30</u>	x 3=	<u>90</u>																														
FACU species	<u>105</u>	x 4=	<u>420</u>																														
UPL species	<u>0</u>	x 5=																															
Column Totals:	<u>175</u> (A)		<u>590</u> (B)																														
1. _____		<u>0</u>																															
2. _____		<u>0</u>																															
3. _____		<u>0</u>																															
4. _____		<u>0</u>																															
5. _____		<u>0</u>																															
		<u>0</u> =	Total Cover																														
Herb Stratum	(Plot size: <u>5</u> ft/radius)				Hydrophytic Vegetation Indicators: ___ 1-Rapid Test For Hydrophytic Vegetation ___ 2-Dominance Test is >50% ___ 3-Prevalence Index is ≤3.0 ¹ ___ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ 5-Wetland Non-Vascular Plants ¹ ___ 6-Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																												
1. _____		<u>0</u>																															
2. _____		<u>0</u>																															
3. _____		<u>0</u>																															
4. _____		<u>0</u>																															
5. _____		<u>0</u>																															
6. _____		<u>0</u>																															
7. _____		<u>0</u>																															
8. _____		<u>0</u>																															
9. _____		<u>0</u>																															
10. _____		<u>0</u>																															
11. _____		<u>0</u>																															
		<u>0</u> =	Total Cover																														
Woody Vine Stratum	(Plot size: <u>30</u>)				Hydrophytic Vegetation Present?																												
1. <u>Hedera helix</u>		<u>80</u>	<u>yes</u>	<u>FACU</u>																													
2. <u>Rubus bifrons</u>		<u>15</u>	<u>yes</u>	<u>FAC</u>																													
		<u>95</u> =	Total Cover																														
% Bare Ground in Herb Stratum	<u>100</u>				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																												

Remarks:

SOIL

Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	5YR 2.5/1	100					Silt loam	
12 - 16	10YR 2/1	100		0			Sandy clay loam	Gravel
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				
0 - 0		0		0				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): 0

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |

Field Observations:

Surface Water Present? no Depth (Inches): 0
 Water Table Present? no Depth (Inches): 0
 Saturation Present? no Depth (Inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D

Wetland Rating Forms



TABLE D-1
WETLAND 1 SUMMARY INFORMATION

Category	Description
Location	Southern halves of Thurston County; parcel Nos. 83450001000, 83450100000, and 11828110800; approximately 0.09 miles east of Ruddell Road Southeast.
Local Jurisdiction	City of Lacey
WRIA	13
Washington State Department of Ecology/ City of Lacey Rating	Category II
Buffer Width	110 to 150 feet, based on a habitat score of 7. Category II wetlands with a medium habitat score require a 150-foot standard buffer if mitigation measures are not implemented, and a 110-foot standard buffer if mitigation measures are implemented.
Wetland Size	Approx. 0.19 acres
Cowardin Classification	PFO/PSS
Hydrogeomorphic Classification	Depressional & Flats
Wetland Data Sheet(s)	DP1
Upland Data Sheet(s)	DP2
Dominant Vegetation	The forested class was dominated by big-leaf maple and western red cedar with an understory of willows. Emergent vegetation was dominated by reed canary grass and fringed willowherb (<i>Epilobium ciliatum</i>). Much of the area within the wetland consisted of saturated bare ground.
Soils	Soils were a black (7.5YR 2.5/1) silt loam from 0 to 16 inches. The soils were too saturated to observe redoximorphic concentrations within the matrix; therefore, assumed the profile meets the criteria for a redox dark surface (F6) based on the presence of water.
Hydrology	Surface water (A1), high water table (A2), and saturation (A3) were observed during the site visit.
Rationale for Local Rating	Wetland 1 received an overall score of 21 points, which includes 7 points for water quality, 7 points for hydrologic, and 7 points for habitat. Wetland rates as a Category II wetland based on functions.
Functional Assessment	Overall, Wetland 1 provides moderate levels of wetland function due to the combination of high scores for water quality, hydrologic functions, and habitat function. Wetland 1 is a depressional system with high cover by persistent plants and permanent, seasonal, and occasional ponding. The wetland receives pollutants from urban runoff associated with nearby developments and residential housing. These attributes contribute to its moderate water quality score and show the site is valuable to society for its ability to provide this function. Wetland 1 has a stream that intermittently flows, has moderate ability to provide storage during floods, and has moderate ability to provide hydrologic value to society. Wetland 1 provides a high habitat function. Wetland 1 scored high in having five vegetation structures, the interspersions of habitats, and accessible habitat for wildlife. Wetland 1 has a Washington Department of Fish and Wildlife priority habitat feature snags and logs within 330 feet of the wetland unit. Wood ducks (<i>Aix sponsa</i>) were observed in a ponded area in Wetland 1. Thus, Wetland 1 earned a point for wood duck breeding area.
Buffer Condition	The buffer has been disturbed by nearby residential development. Dominant buffer vegetation includes bigleaf maple, Himalayan blackberry, and English ivy.

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 1 - Lift Station 06 Date of site visit: 8/5/2022

Rated by Maggie Bradshaw Trained by Ecology? Yes No Date of training Mar-21

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? Yes No

NOTE: Form is not complete with out the figures requested (figures can be combined).

Source of base aerial photo/map ESRI 2022, Google Earth 2021

OVERALL WETLAND CATEGORY II (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 23 - 27
- X Category II - Total score = 20 - 22
- Category III - Total score = 16 - 19
- Category IV - Total score = 9 - 15

Score for each function based on three ratings
(order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	M	M	
Landscape Potential	M	H	M	
Value	H	M	H	
Score Based on Ratings	7	7	7	Total 21

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Maps and Figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO - go to 7

YES - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO - go to 8

YES - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS**Water Quality Functions** - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	points = 2	2
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 1	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.	points = 1	
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).	Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):		
Wetland has persistent, ungrazed, plants > 95% of area	points = 5	
Wetland has persistent, ungrazed, plants > 1/2 of area	points = 3	3
Wetland has persistent, ungrazed plants > 1/10 of area	points = 1	
Wetland has persistent, ungrazed plants < 1/10 of area	points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:		
<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 4	2
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	7

Rating of Site Potential If score is: 12 - 16 = H 6 - 11 = M 0 - 5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		0
Source	Yes = 1 No = 0	
Total for D 2	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	2

Rating of Value If score is: 2 - 4 = H 1 = M 0 = L Record the rating on the first page

DEPRESSIONAL AND FLATS WETLANDS**Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	2
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: <i>Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.</i>		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	5
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i>		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	0
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4	Add the points in the boxes above	7

Rating of Site Potential If score is: 12 - 16 = H 6 - 11 = M 0 - 5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. <i>Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.</i>		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		1
<ul style="list-style-type: none"> ● Flooding occurs in a sub-basin that is immediately down-gradient of unit. 	points = 2	
<input checked="" type="checkbox"/> <ul style="list-style-type: none"> ● Surface flooding problems are in a sub-basin farther down-gradient. 	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: 2 - 4 = H 1 = M 0 = L *Record the rating on the first page*

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|----------------------------------|---|
| <input checked="" type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 4 |
| <input checked="" type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods).

- | | | |
|--|-------------------------------------|---|
| <input checked="" type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 2 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input type="checkbox"/> Saturated only | 1 types present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft². *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*

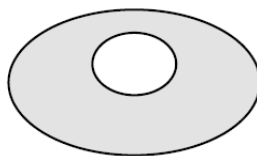
- | | | |
|-----------------|----------------|------------|
| If you counted: | > 19 species | points = 2 |
| | 5 - 19 species | points = 1 |
| | < 5 species | points = 0 |

H 1.4. Interspersion of habitats

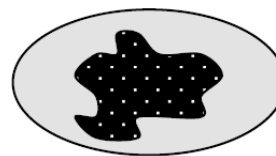
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



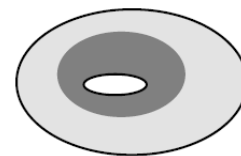
None = 0 points



Low = 1 point

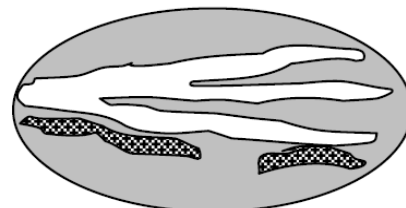
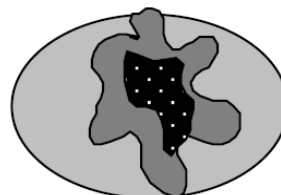
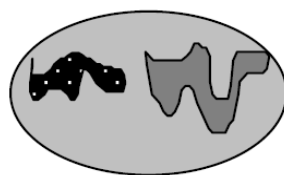


Moderate = 2 points



3

All three diagrams in this row are **HIGH** = 3 points



<p>H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata) 	4
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Total for H 1 Add the points in the boxes above **14**

Rating of Site Potential If Score is: 15 - 18 = H 7 - 14 = M 0 - 6 = L Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat function of the site?

<p>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 18 % undisturbed habitat + (5 % moderate & low intensity land uses / 2) = 20.5%</p> <p>If total accessible habitat is:</p> <ul style="list-style-type: none"> > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0 	2
--	---

<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 23 % undisturbed habitat + (7 % moderate & low intensity land uses / 2) = 26.5%</p> <ul style="list-style-type: none"> Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0 	2
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<p>H 2.3 Land use intensity in 1 km Polygon: If</p> <ul style="list-style-type: none"> > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0 	-2
---	----

Total for H 2 Add the points in the boxes above **2**

Rating of Landscape Potential If Score is: 4 - 6 = H 1 - 3 = M < 1 = L Record the rating on the first page

H 3.0. Is the habitat provided by the site valuable to society?

<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> <input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input checked="" type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan <p>Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1</p> <p>Site does not meet any of the criteria above points = 0</p>	2
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Rating of Value If Score is: 2 = H 1 = M 0 = L Record the rating on the first page

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
<p>SC 1.0. Estuarine Wetlands</p> <p>Does the wetland meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt</p> <p style="text-align: center;"><input type="checkbox"/> Yes - Go to SC 1.1 <input checked="" type="checkbox"/> No = Not an estuarine wetland</p>	
<p>SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 1.2</p>	
<p>SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25)</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 2.0. Wetlands of High Conservation Value (WHCV)</p> <p>SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value?</p> <p style="text-align: center;"><input checked="" type="checkbox"/> Yes - Go to SC 2.2 <input type="checkbox"/> No - Go to SC 2.3</p> <p>SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not WHCV</p> <p>SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</p> <p style="text-align: center;"><input type="checkbox"/> Yes - Contact WNHP/WDNR and to SC 2.4 <input type="checkbox"/> No = Not WHCV</p> <p>SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Not WHCV</p>	
<p>SC 3.0. Bogs</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p>SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile?</p> <p style="text-align: center;"><input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No - Go to SC 3.2</p> <p>SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?</p> <p style="text-align: center;"><input type="checkbox"/> Yes - Go to SC 3.3 <input checked="" type="checkbox"/> No = Is not a bog</p> <p>SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No - Go to SC 3.4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog.</p> <p>SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?</p> <p style="text-align: center;"><input type="checkbox"/> Yes = Is a Category I bog <input type="checkbox"/> No = Is not a bog</p>	

<p>SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. <input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input checked="" type="checkbox"/> No = Not a forested wetland for this section</p>	
<p>SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks <input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 5.1 <input checked="" type="checkbox"/> No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. <input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²) <p style="text-align: right;"><input type="checkbox"/> Yes = Category I <input type="checkbox"/> No = Category II</p>	
<p>SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103 <input type="checkbox"/> Grayland-Westport: Lands west of SR 105 <input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p style="text-align: right;"><input type="checkbox"/> Yes - Go to SC 6.1 <input checked="" type="checkbox"/> No = Not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? <input type="checkbox"/> Yes = Category I <input type="checkbox"/> No - Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? <input type="checkbox"/> Yes = Category II <input type="checkbox"/> No - Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? <input type="checkbox"/> Yes = Category III <input type="checkbox"/> No = Category IV</p>	
<p>Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form</p>	