Appendix F

Critical Areas Report

WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

SOUTHEAST 440TH STREET

NOVEMBER 2024

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT

SOUTHEAST 440TH STREET

NOVEMBER 21, 2024

PROJECT LOCATION
24515, 24631, AND 24711 SE 440TH STREET,
ENUMCLAW, WA 98022

PREPARED FOR
QUARTERRA
1325 4TH AVENUE, SUITE 1300,
SEATTLE, WA 98101

PREPARED BY
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Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) is assisting Quarterra (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment in support of defining the development opportunities of an approximately 13.94-acre site located at 24515, 24631 and 24711 Southeast 440th Street within the City of Enumclaw, King County, Washington. The subject property consists of four tax parcels situated in the Southwest ¼ of Section 23, Township 20 North, Range 06 East, W.M. (King County Tax Parcel Numbers 2320069156, 2320069188, 2320069213 and 2320069041).

SVC investigated the subject property for the presence of potentially regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species in June and July of 2024. Using current methodology, SVC confirmed a lack of onsite wetland presence. However, one wetland (Wetland 1) and one stream (Stream 1) were identified offsite within 300 feet of the subject property. Wetland 1 is classified as a Category III wetland with low habitat scores of 3 points and is subject to a standard 50-foot buffer per Enumclaw Municipal Code (EMC) Table 19.02.090.C or a 25-foot reduced buffer if wetland buffer enhancement is implemented and provides the same level or increased level of function and protection of the wetland as a non-enhanced standard buffer per EMC 19.02.090.C.3. The Applicant proposes to reduce the onsite portion of the Wetland 1 buffer, as the buffer is currently degraded by non-native invasive species and consists almost entirely of herbaceous vegetation. The proposed buffer reduction from a 50-foot standard buffer down to a 25-foot reduced buffer with wetland buffer enhancement will improve wetland and wetland buffer function through installing a suite of native trees and shrubs, and removing non-native invasive species, which will increase shading, improve habitat diversity within the wetland and buffer, reduce the presence of non-native invasive species, and will lead to an overall net lift in ecological function within the wetlands and associated buffers. Offsite Stream 1 is classified as a Type Ns stream and is subject to a standard 25-foot buffer per EMC 19.02.100.C. In addition, major structures and improvements shall be set back a minimum of 15 feet from the outer edge of any wetland or stream buffer per EMC 19.02.220. No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species were observed on or within 300 feet of the subject property.

The summary table below summarizes the identified critical areas, and the potential regulatory status by local, state, and federal agencies.

Name	Size Onsite (SF)	Category[1]	Regulated Under EMC 19.02	Regulated Under RCW 90.48	Regulated Under Clean Water Act
Wetland 1	N/A	III	Yes	Yes	Likely
Stream 1	N/A	Type Ns	Yes	Yes	Likely

Note:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby and Yahnke, 2023) per EMC 19.02.090(B); DNR water typing system (WAC 222-16-030) per EMC 19.02.100(C).

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Chapter 1. Introduction

Soundview Consultants LLC (SVC) is assisting Quarterra (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment in support of defining the development opportunities of an approximately 13.94-acre site located at 24515, 24631 and 24711 Southeast 440th Street within the City of Enumclaw, King County, Washington. The subject property consists of four tax parcels situated in the Southwest ¼ of Section 23, Township 20 North, Range 06 East, W.M. (King County Tax Parcel Numbers 2320069156, 2320069188, 2320069213 and 2320069041).

The purpose of this assessment report is to identify and discuss the presence of potentially-regulated waterbodies, wetlands, fish and wildlife habitat, and/or priority species on or near the subject property. This report provides conclusions and recommendations regarding:

- Site description;
- Identification, delineation, and assessment of potentially-regulated wetlands and waterbodies in the vicinity of the proposed project;
- Standard buffer and development limitations;
- Existing site map detailing identified wetlands and standard buffers;
- Supplemental information necessary for local, state, and federal regulatory review.

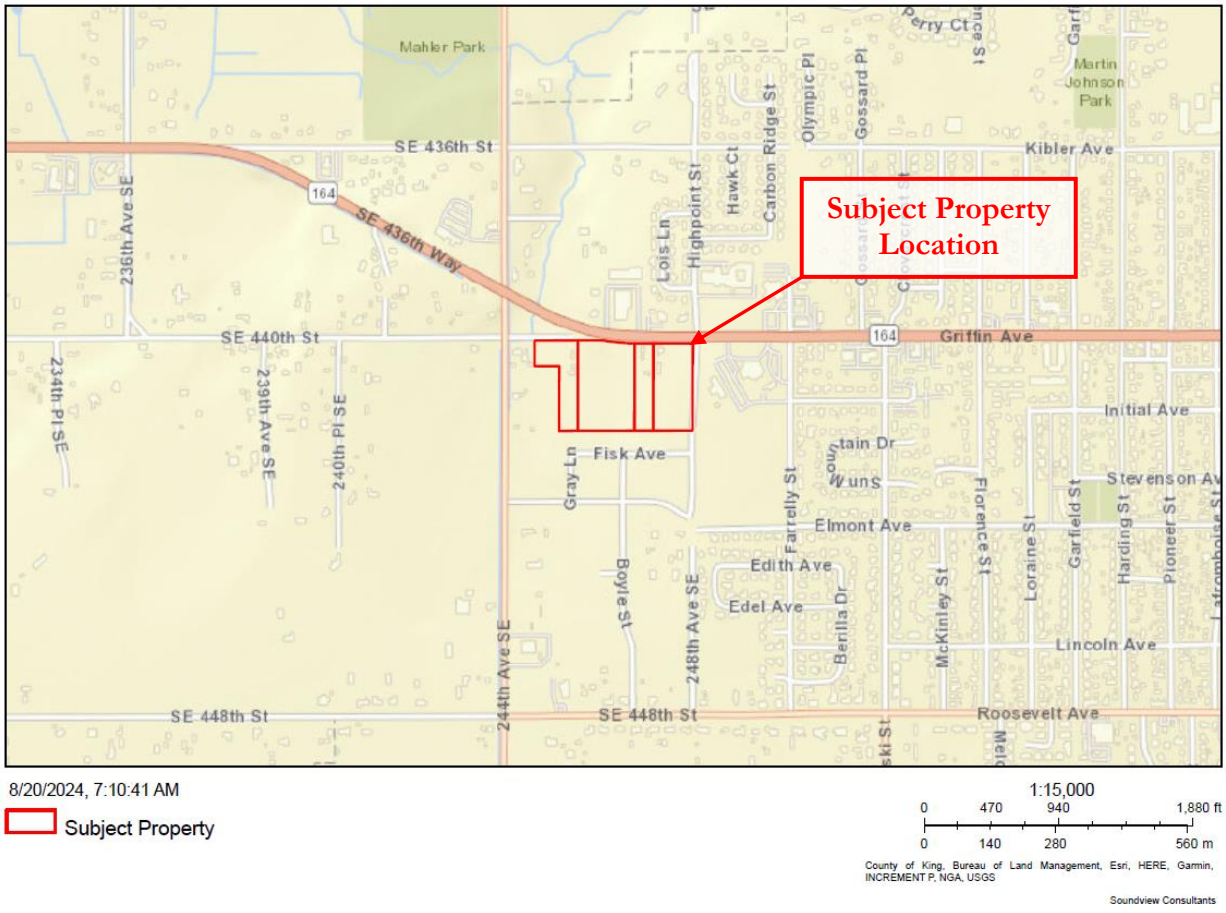
Chapter 2. Project Location

2.1 Project Location

The subject property is an approximately 13.94-acre site located at 24515, 24631, and 24711 Southeast 440th Street within the City of Enumclaw, King County, Washington. The subject property consists of four tax parcels situated in the Southwest ¼ of Section 23, Township 20 North, Range 06 East, W.M. (King County Tax Parcel Numbers 2320069156, 2320069188, 2320069213, and 2320069041).

To access the site from the Tacoma area, use the Interstate Highway-5 North heading north towards Seattle (8.3 miles). Then take exit 142A to merge onto WA-18 East toward Auburn (4.3 miles) and continue to the WA-164 East exit toward Enumclaw (0.2 miles). Then turn left onto WA-164 East/Auburn Way South (2.3 miles), continue on straight through the traffic circle to stay on WA-164 East/Auburn Way South (10.5 miles). Then turn right onto 244th Ave Southeast (299 feet), and then turn left at the 1st cross street onto South 440th Street (404 feet). The subject property will be on the right.

Figure 1. Vicinity Map.



Chapter 3. Methods

SVC investigated and assessed any potentially-regulated wetlands, streams, and other fish and wildlife habitat conservation areas on or within 300 feet of the subject property in June and July of 2024. All determinations were made using observable vegetation, hydrology, and soils in conjunction with data from the U.S. Geological Survey (USGS) topographic maps, National Resource Conservation Service (NRCS) soil survey, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) and Information for Planning and Consultation (IPaC) database, Washington State Department of Natural Resources (DNR) water typing system, Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) mapping tools, WDFW and Northwest Indian Fisheries Commission (NWIFC) Statewide Washington Integrated Fish Distribution (SWIFD) database, City of Enumclaw and King County Geographic Information Systems (GIS) data, and various orthophotographic resources.

Wetland presence/absence was determined using the routine approach outlined in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and modified according to the guidelines established in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (USACE, 2010) and *Field Indicators of Hydric Soils in the United States* (NRCS, 2018). Pink surveyor's flagging was labeled alpha-numerically and tied to 3-foot lath or vegetation at formal sampling locations to mark the points where detailed data was collected (DP-1 to DP-6). Additional test pits were excavated at regular intervals throughout the subject property to further confirm wetland presence/absence. Offsite wetland features within 300 feet of the site were identified and estimated based on visual observations, topographic and/or lidar data, and other available reports; offsite wetland features were labeled numerically beginning with "1".

Wetlands were classified using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Federal Geographic Data Committee, 2013) classification systems. Following classification and assessment, wetlands were rated and categorized using the *Washington State Wetlands Rating System for Western Washington: 2014 Update (Version 2.0)* (Hruby and Yahnke, 2023) per Enumclaw Municipal Code (EMC) 19.02.090.B.

Ordinary High Water (OHW) mark determinations were made using WSDOE's method as detailed in *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson et. al., 2016) and the definitions established in the Revised Code of Washington (RCW) 90.58.030(2)(b) and WAC 173-22-030(11). Stream and surface water feature determinations and classifications were made using the DNR water typing system as outlined in WAC 222-16-030 and the guidelines established in EMC 19.02.100.C. Offsite water features within 300 feet of the site were identified and estimated based on visual observations, topographic and/or lidar data, and other available reports; offsite water features were labeled numerically beginning with "1".

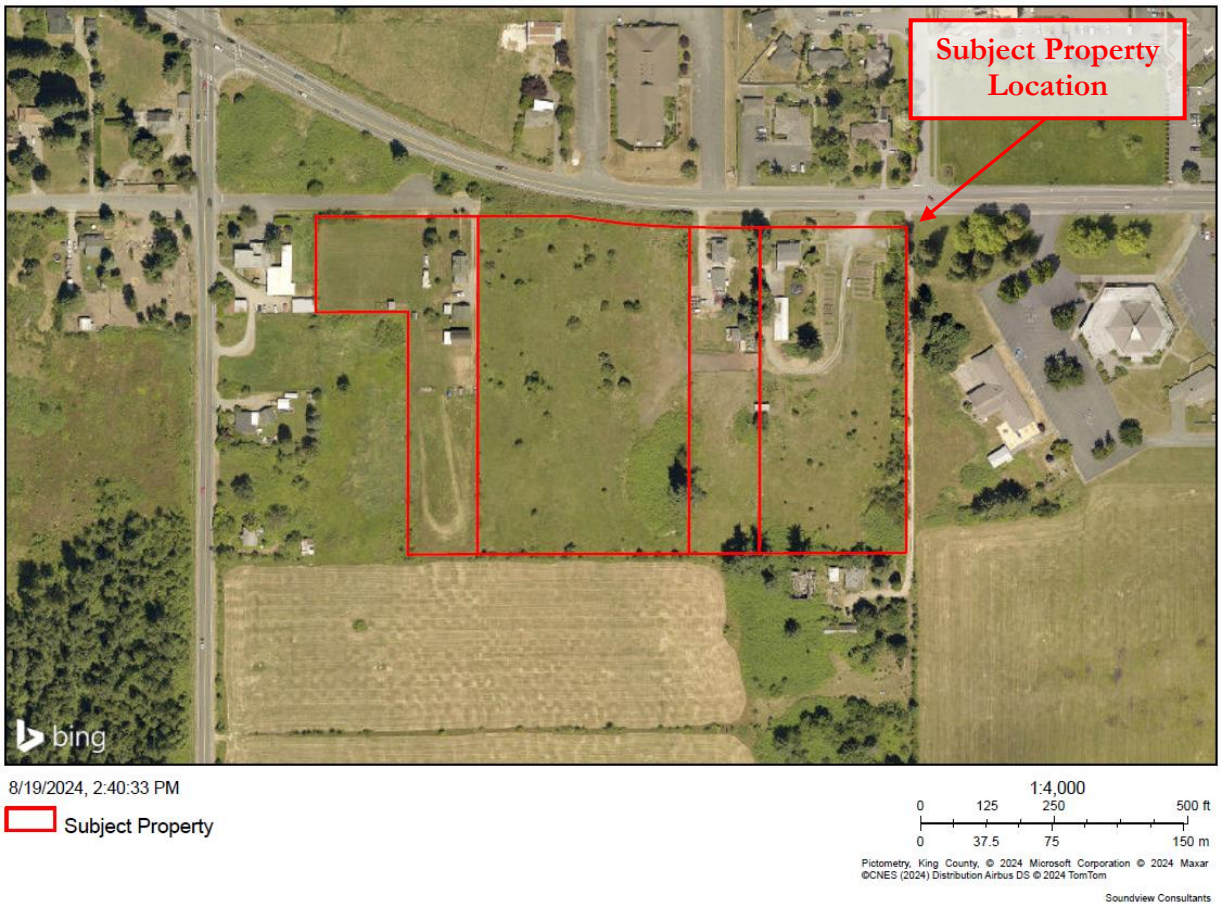
The fish and wildlife habitat assessment was conducted during the same site visits by qualified fish and wildlife biologists. The experienced biologists made visual and auditory observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features and direct and indirect signs of fish and wildlife activity (e.g. nesting, foraging, and migration/movement). Special attention was given to assessing the presence of Fish and wildlife conservation areas outlined under EMC 19.02.100.

Chapter 4. Existing Conditions

4.1 Landscape Setting

The subject property is located in a residential/agricultural setting and consists of four parcels. The western parcel consists of a single-family residence and pasture, the western central parcel consists of an undeveloped agricultural field, and the two eastern parcels are developed with single family residences with associated infrastructure including horse stables (eastern central parcel only). The subject property is bounded by Southeast 436th Way/Griffen Ave to the north, Highpoint Street to the east, high density residential development to the south, and low density housing and undeveloped land to the west. The topography on the subject property generally slopes from east to west. Elevations onsite range between approximately 750 feet above mean sea level (amsl) to 715 feet asml. A King County Topographic map is provided in Appendix B1. The subject property is located within Water Resource Inventory Area (WRIA) 9 – Duwamish-Green.

Figure 2. Aerial View of Subject Property.



4.2 Soils

The Natural Resources Conservation Service (NRCS) Soil Survey of King County (Snyder, 1973) identified two soil series on the subject property: Alderwood gravelly sandy loam, 0 to 6 percent slopes, and Buckley gravelly silt loam, 0 to 3 percent slopes. The NRCS Soil Survey of Kitsap County Map is included as Appendix B2.

Alderwood gravelly sandy loam, 0 to 6 percent slopes (AgB)

According to the survey, Alderwood gravelly sandy loam, 0 to 6 percent slopes is a moderately well-drained soil that is nearly level and undulating. This soil is similar to Alderwood gravelly sandy loam, 6 to 15 percent slopes, but its surface layer may be 2 to 3 inches thicker in places. In a typical profile, Alderwood soils have a surface layer of very dark brown gravelly sandy loam to a depth of approximately 2 inches. The subsoil to a depth of 27 inches ranges from dark brown to grayish brown gravelly sandy loam. The substratum to a depth of 60 inches consists of a grayish brown weakly to strongly consolidated till. Alderwood gravelly sandy loam, 0 to 6 percent slopes is listed as non-hydric on the King County Hydric Soils List, but as much as 10 percent of mapped areas may contain inclusions of hydric McKenna, Shalcar, and Norma soils (NRCS, n.d).

Buckley Gravelly Silt Loam, 0 to 3 percent slopes (Bu)

According to the survey, the Buckley loam is nearly level and occurs in concave tracts. In a typical profile, the surface layer is black or very dark brown silt loam 10 to 14 inches thick. From 10 to 16 inches below ground surface, soils are a very dark grayish-brown gravelly loam with few prominent mottles. From 16 to 60 inches is a grayish brown gravelly sandy clay loam with many white, strong-brown, and reddish-yellow mottles. The available water capacity for this soil series is high and permeability is moderate at the surface and slow in the subsoil. Buckley gravelly silt loam, 0 to 3 percent slopes is listed as 85 hydric on the NRCS Hydric Soils List, and as much as 5 percent of areas mapped as Buckley gravelly silt loam, 0 to 3 percent slopes may contain inclusions of hydric Seattle soils (NRCS, n.d.).

4.3 Critical Area Inventories

The USFWS NWI map (Appendix B3), and WDFW PHS map (Appendix B4) identify a potential freshwater emergent wetland along the southern boundary of the subject property that extends offsite to the south. Furthermore, the King County Sensitive Areas map (Appendix B5) identifies the same potential wetland 40-feet south of the south of the subject property. The King County Stream and Wetland Inventory map (Appendix B6) and King County Sensitive Areas map identifies an unknown and untyped stream offsite along 244th Ave Southeast. The King County Stream and Wetland Inventory map also identify a stream that runs on the western side of 244th Ave South, which then crosses and runs parallel to the north boundary of the western portion of the subject property and is conveyed north across offsite parcel 2320069186 and beneath Southeast 436th Way. The DNR Stream Typing map (Appendix B7) and the WDFW and NWIFC-SWIFD map (Appendix B8) do not identify any streams onsite or within 300 feet of the subject property. No other potential wetlands, streams, or waterbodies, or priority habitats or threatened, endangered, or sensitive plant or animal species, are identified by these critical area map resources on or within 300 feet of the subject property.

4.4 Precipitation

Precipitation data was obtained from the NOAA weather station at Seattle-Tacoma International Airport in order to acquire percent of normal precipitation during and preceding the investigations. A summary of data collected is provided in Table 1.

Table 1: Precipitation Summary[1]

Date	Day of	Day Before	1 Week Prior	2 Weeks Prior	30 days to Date	Year to Date[2]	Percent of Normal[3]
06/26/2024	0.01	0.00	0.01	0.06	1.31/1.54	16.32/20.08	85/81
07/24/2024	0.00	0.00	0.00	0.00	0.03/0.70	16.34/20.70	4/79

1. Precipitation volume in inches. Data obtained from the NOAA (http://w2.weather.gov/climate/xmacis.php?wfo=sew) for Seattle Tacoma International Airport.
2. Year-to-date precipitation is for the 2024 calendar year, January 1st, 2024, to the onsite date
3. Percent of normal shown for last 30 days and 2024 calendar year.

Precipitation levels during the June 26, 2024, site visit were within the statistical normal range (70 to 130 percent of normal) for the prior 30-days (85 percent of normal) and within the statistical normal range for the 2024 calendar year (81 percent of normal). This precipitation data suggests that conditions were relatively normal at the time of the June site investigation. Precipitation levels during the July 24, 2024, were below the statistical normal range for the prior 30-days (4 percent of normal) and within the statistical normal range for the 2024 calendar year (79 percent of normal). This precipitation data suggests that lower-than-normal conditions may have been present at the time of the July site investigation. However, as late July is in the peak of the dry season, secondary hydrology indicators were utilized during the July 2024 site investigation. Such conditions were considered in making professional determinations.

Chapter 5. Results

SVC investigated the subject property during the summer of 2024 for any potentially regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species on or within 300 feet of the subject property. SVC confirmed a lack of onsite wetland presence and identified one offsite wetland (Wetland 1) and one offsite Stream (Stream 1) within 300 feet of the subject property. No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified within 300 feet of the subject property.

5.1 Upland Characterization

Vegetation on the subject property can be characterized as mostly undeveloped agricultural fields consisting of tall fescue (*Schedonorus arundinaceus*), creeping buttercup (*Ranunculus repens*), velvet grass (*Holcus lanatus*), narrow leaf plantain (*Plantago lanceolata*), common dandelion (*Taraxacum officinale*), hairy cats ear (*Hypochaeris radicata*), oxeye daisy (*Leucanthemum vulgare*), with some apple trees (*Malus pumila*), and English hawthorn (*Crataegus monogyna*). Additionally, there were a few forested areas near the residences and along the eastern boundary of the subject property. Dominant vegetation with the forested areas consisted of Douglas fir (*Pseudotsuga menziesii)*, grand fir (*Abies grandis*), and sweet cherry (*Prunus avium*), with an understory of nonnative invasive Himalayan blackberry (*Rubus armeniacus).*

Six representative data plots (DP-1 to DP-6) were collected onsite to confirm wetland absence. Maps depicting the data plot location and existing conditions are presented in Appendix A. Data forms are provided in Appendix C. Representative photographs of the site documenting upland conditions during the investigation are provided in Appendix D.

Data collected at DP-1, DP-2, DP-3, DP-5, and DP-6 did not meet all three wetland criteria. Data collected at DP-1 and DP-2 met hydrophytic vegetation criteria through the Dominance Test due to a dominance of facultative grasses and herbaceous species typical of agricultural sites. Data collected at DP-3 met hydrophytic vegetation criteria through the Dominance Test due to a dominance of non-native invasive reed canarygrass (*Phalaris arundinacea*), a noxious weed that can persist in disturbed uplands and is also commonly observed on agricultural sites. No hydrophytic vegetation criteria was observed at DP-5 or DP-6; however, data collected at DP-5 and DP-6 met hydric soil criteria through indicator A12 (Thick Dark Surface). Hydric soil indicator A12 is common on sites where soils have been modified by agricultural practices. Soils at DP-1, DP-2, and DP-3 consisted of dark brown (10YR 2/1 to 10YR 3/1) silty clay/silty clay loam to a depth of 9-12" below ground surface. Redoximorphic features and depletions were common below the dark surface; however, depletions made up less than 60 percent of soil matrix and redoximorphic features occurred to deep in the soil profile (>8" bgs) to meet hydric soil indicators. None of the data plots met wetland hydrology criteria. Data plots were excavated to a depth of 14 to 24" bgs and no saturation or water table were observed. One secondary indicator (D2 (Geomorphic Position)) was observed at DP-2; however, two secondary indicators are required in order to meet wetland hydrology criteria.

5.1.1 Artificially Induced Wetland Area

Data collected at DP-4 did meet all three wetland criteria. However, the presence of wetland criteria at this data plot location appears to be the result of a decommissioned/non-functional ditch discharging hydrology on to the site. The ditch previously conveyed runoff from a segment of Southeast 440th Street connecting to Southeast 436th Way. Based on a review of historic aerial images of the subject property from King County (gismaps.kingcounty.gov/iMap) (Appendix E), the connecting segment of Southeast 440th Street was filled between 2005 and 2007, along with a segment of the ditch that previously conveyed hydrology west through a culvert near the northwest corner of

the subject property. The Enumclaw Conveyance Inventory (Appendix B9) appears to indicate that stormwater conveyances from a church to the east of the subject property have been historically conveyed west through this ditch system, along with surface runoff from developments south-adjacent to the ditch. In its current condition, the remaining onsite segment of the ditch conveys and discharges runoff to the area where DP-4 is collected near the north central boundary of the subject property, resulting in elevated hydrologic inputs.

A review of historic aerial images corroborates the artificially induced wetland conditions present in response to the fill of the road segment and associated ditch. No saturation indicative of historic wetland presence is visible in aerial images ranging from 1936 to 2005 prior to the fill of the road segment and associated ditch (Appendix E1 to E4).

Per WAC 222-34-040(c), "ditches and other artificial water courses shall not be constructed to discharge onto the property of other parties without their consent". As stormwater discharges to the site are resulting from the fill of a portion of the ditch and lack of adequate maintenance to maintain drainage to the culvert near the northwest corner of the subject property, the ditch is illegally discharging to the subject property.

In addition to the illegal nature of the onsite discharge, per EMC Chapter 19 Appendix D, Enumclaw has adopted the definition of wetlands per RCW 36.70A.030(20), which specifies "*wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.*" The area surrounding DP-4 has unintentionally developed wetland conditions due to the removal of the connecting segment of Southeast 440th Street that was filled between 2005 and 2007. As such, the area meeting wetland criteria surrounding DP-4 does not meet the definition of a wetland regulated by the City of Enumclaw.

5.2 Wetlands

The site investigations identified one potentially regulated wetland (Wetland 1) offsite to the west within 300 feet of the subject property. Due to its offsite location, Wetland 1 was not formally delineated and as such hydric soils were assumed. Wetland data forms are provided in Appendix E, wetland rating forms are provided in Appendix F, and wetland rating maps are provided in Appendix G. Table 2 summarizes the wetlands identified during the site investigations.

Table 2: Wetland Summary

Wetland	Predominant Wetland Classification / Rating			Wetland Size Onsite (SF)
	Cowardin[1]	HGM[2]	City of Enumclaw[3]	
1	PSS/EMBC	Depressional	III	N/A

1. Cowardin et al. (1979); Federal Geographic Data Committee (2013); class based on vegetation: P = Palustrine, SS = Scrub-Shrub, EM = Emergent. Modifiers for Water Regime: B= Seasonally Saturated, C = Seasonally Flooded.
2. Brinson, M. M. (1993).
3. Current WSDOE rating system per EMC 19.02.090.B.

Offsite Wetland 1

Wetland 1 was identified offsite approximately 10 feet to the west of the subject property at its closest point. Hydrology for Wetland 1 is provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland vegetation is dominated by black

cottonwood (*Populus balsamifera*), non-native invasive reed canary grass, and cattails (*Typha latifolia*). Presence of hydric soils within Wetland 1 are assumed since access was not provided to the offsite parcel. The onsite Wetland 1 buffer is partially degraded by the presence of non-native invasive reed canarygrass and a lack of shrubs or trees. Wetland 1 is a Palustrine Scrub-Shrub, Emergent, Seasonally Saturated, Seasonally Flooded (PSS/EMBC) depressional wetland.

5.3 Stream 1

One offsite stream (Stream 1) was identified approximately 270 feet offsite to the north of the subject property. Stream 1 was assessed entirely from an offsite perspective. The stream originates from a culvert beneath Southeast 436th Way and the stream flows from south to north and connects into Newaukum Creek. Stream 1 appeared to have a highly manipulated channel that more resembles a ditch. However, Stream 1 appeared to have a vaguely defined bed and bank. The stream channel appeared to be choked out by non-native invasive reed canarygrass and other herbaceous plant species. SVC staff assessed the potential drainage on parcel 2320069186, but found no defined bed or bank, hence Stream 1 appears to originate on parcel 2320069177. DNR Stream typing identifies a Type U (unknown) stream downgradient to the north from where SVC staff identified the likely origin of Stream 1 on parcel 2320069177. The WDFW Fish Passage map identifies a total fish passage barrier downstream on parcel 2320069301. As such, Stream 1 is classified as a Type Ns (non-fish bearing seasonal) stream.

Table 3. Stream Summary

Stream	Local Stream Type[1]
1	Ns

1. Stream typing per EMC per EMC 19.02.100.C.

5.4 Fish and Wildlife Habitat Assessment

Per EMC 19.02.100.A, there are only two types of habitat classified as fish and wildlife conservation areas which are stream habitat and buffers (riparian areas) adjacent to regulated streams or water bodies. The site investigations identified and delineated one potentially regulated stream (Stream 1) offsite to the north of the western portion of the subject property and is discussed in section 5.3 above.

According to the United States Fish and Wildlife IPaC (Information for Planning and Consultation) mapping database North American wolverine (*Gulo gulo luscus*), marbled murrelet (*Brachyramphus marmoratus*), streaked horned lark (*Eremophilia alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), Northwestern pond turtle (*Actinemys marmorata*), and bull trout (*Salvelinus confluentus*) have the potential to occur within 300 feet of the subject property. No other potentially regulated streams or fish and wildlife habitats conservation areas were identified on or within 300 feet of the site.

North American wolverines commonly occur in boreal forests and tundra ecosystems and in Washington they occupy alpine and subalpine forests within the North Cascades National Park and the wilderness areas of the Okanogan-Wenatchee National Forest where heavy snowpack persists well into the spring months (WDFW, n.d.). Population estimates vary between 20 to 35 individuals residing in Washington state. Wolverines will travel hundreds of miles when hunting and will consume a wide variety of foods including insects, berries, marmots, ground squirrels, snowshoe hares and other small mammals but they are predominantly scavengers of carrion of large animals. No boreal forests or tundra ecosystems are present within the vicinity of the subject property; as such North American wolverine are not present onsite or within 300 feet of the subject property.

Marbled murrelet that occur in the state of Washington are year-round residents on coastal waters and primarily feed in waters within 500 feet of the shore out to 1.2 miles from shore at depths of less than one hundred feet. Potential suitable habitat typically consists of tree stands 5 or more acres in size composed of 60% or more conifer cover with minimum 15-inch diameter at breast height (DBH) with nesting platform trees. Nesting platform trees include "platform branches" that are a relatively flat surface at least four inches wide, at least 33 feet high in a coniferous tree, with cover from the live crown of the same tree or an adjacent tree (WSDOT, 2014). As no stands of mature conifer forest are present onsite or within 300 feet of the subject property, marbled murrelet nesting and marbled murrelet are likely not present on or within 300 feet of the subject property.

Streaked horned lark are found primarily in prairie habitat or unvegetated to sparsely vegetated open habitats (Pearson & Anderson, 2015), in dune habitats along the coast of Washington; in prairies of western Washington and western Oregon; and on the sandy beaches and islands along the Columbia and Willamette Rivers (USFWS, 2019). Studies conducted by the USFWS indicate that sites used by larks are generally found in open (i.e., flat, treeless) landscapes 300 acres or more in size such as airports (USFWS, 2013). As the area surrounding the subject property is highly developed with residential and commercial facilities and no large open landscapes are present in the vicinity, streaked horned lark are likely not present onsite or within 300 feet of the subject property.

Yellow-billed cuckoo habitat consists of low to mid-level riparian forests dominated by cottonwoods and willows. Suitable habitat is approximately 100 to 198 acres and wider than 200 meters; marginal habitat is approximately 20 to 100 acres and 100 to 200 meters wide; and unsuitable habitat is smaller than approximately 37 acres and less than 100 meters wide (Wiles & Kalasz, 2017). Twenty sightings of the yellow-billed cuckoo have been confirmed in Washington between the 1950s and 2017; none of these sightings were of breeding birds. Sixteen of these 20 confirmed sightings were east of the Cascades; and the sighted birds were likely vagrants or migrants (Wiles & Kalasz, 2017). The subject property is partially developed and vegetated but is not within a riparian area and is surrounded by residential housing and development, with no documented occurrences of yellow-billed cuckoo in the vicinity. As the riparian zone associated with Stream 1 is devoid of trees and shrubs, no suitable habitat for yellow-billed cuckoo is present onsite or within 300 feet of the subject property.

The Northwestern pond turtle is a medium-size aquatic turtle. In Washington, they are only known to inhabit ponds and lakes, but also rely on adjacent upland habitats with extensive sun exposure such as prairies in the Puget Sound, oak-pine savanna, open forested in the Columbia Gorge, and pasture in order to lay eggs, disperse to new waters, overwinter, and aestivate. Northwestern pond turtles are omnivorous, relying on insects, aquatic vertebrates, and plants as food sources. Historical declines in their numbers may be attributed to hunting or collection as food, alteration or loss of habitat, and introduced predators including bullfrogs and largemouth bass. As no ponds are located onsite or within 300 feet of the subject property, Northwestern pond turtle is likely not present on or within 300 feet of the subject property.

Bull trout have the most specific habitat requirements of salmonids. They require cold water temperatures, clean stream substrates for spawning and rearing, complex habitats including streams with riffles and deep pools, undercut banks and large logs, and they also rely on river, lake, and ocean habitats that connect to headwater streams for annual spawning and feeding migrations (Shellberg, 2002). In Washington, bull trout are typically found in major tributaries from the Cascades that flow into the Puget Sound as well as major tributaries for the Olympic Mountains that flow into the Hood Canal, Straight of Juan de Fuca, and the Pacific Ocean (USFWS, 2015). As Stream 1 is a seasonal Type Ns stream with total downstream fish passage barriers, no suitable habitat for bull trout occurs

onsite or within 300 feet of the subject property. As such, bull trout are not likely present on or within 300 feet of the subject property.

5.5 Roadside Drainage Ditch System

As identified by the Enumclaw Conveyance map, and similarly by the King County Wetland and Stream Inventory map, and King County Sensitive Areas map, site investigations confirmed the presence of roadside ditches along the northern boundary of the subject property along Southeast 436th Way and along the southern boundary of Southeast 440th Street, as well as along the western and eastern boundaries of 244th Ave Southeast. These roadside ditches converge at a point that is approximately 40 feet west of the northwestern corner of the subject property, where hydrology is conveyed through a culvert that passes under Southeast 440th Street, daylights for a small area across King County Parcel 2320069186, and then passes through another culvert under Southeast 436th Way where it daylights and Stream 1 begins flowing northeast across King County Parcel 2320069177.

Based on historical review of aerial, DNR Hillshade (LiDAR) imagery, and visual observation during the site investigations (Appendix D), the portion of the roadside ditch along the northern boundary of the subject property was created and maintained to support stormwater conveyance for Southeast 440th Street when it was priorly connected to Southeast 436th Way. Southeast 440th Street has since become a dead end road at its most eastern point and does not have a connection to Southeast 436th Way. Furthermore, since the lack of connection between roadways, the ditch system has not been maintained along the northern portion of the subject property on the southern side of Southeast 436th Way and the roadside ditch has failed and is now discharging stormwater from Southeast 436th Way onto the subject property.

Per EMC 19.02 Appendix D, streams are defined as "*an aquatic area where surface water produces a channel, not including a wholly artificial channel, unless it is used by salmonids, or used to convey a stream that occurred naturally before construction of the artificial channel*". Historic USGS topographic maps do not identify any historic streams within the vicinity of the subject property. As the roadside ditches are artificially constructed to convey surface runoff from adjacent roadways and residential developments and no historic streams are documented in the vicinity of the subject property, and no salmonids are able to access the roadside ditches, the roadside ditches adjacent to the subject property should not be regulated as streams. Additionally, per EMC 19.02 Appendix D, wetlands are "*areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands*". As the roadside drainage ditches are artificially and intentionally created to convey stormwater runoff from adjacent roadways and residential developments, the drainage ditches should not be regulated as wetlands.

Chapter 6. Regulatory Considerations

The site investigations in June and July of 2024 did not identify any wetlands or streams on the subject property. One offsite wetland (Wetland 1), and one offsite Stream (Stream 1) were identified within 300 feet of the subject property. No other potentially-regulated wetlands, waterbodies, or fish and wildlife habitat were identified on or within 300 feet of the subject property.

6.1 Local Requirements

6.1.1 Buffer Standards

The City of Enumclaw, per EMC 19.02.090.B, has adopted the 2014 Washington State Wetland Rating System for Western Washington. Category III wetlands are wetlands with a moderate level of functions, as characterized by a score ranging from 16 to 19 points and can often be adequately replaced with a well-planned mitigation project. Generally, these wetlands have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

EMC Table 19.02.090.C establishes regulatory wetland buffers based on wetland rating. Wetland 1 is classified as Category III wetlands with low habitat scores of 3 points and are subject to a standard 50-foot buffer per EMC Table 19.02.090.C or a 25-foot reduced buffer if wetland buffer enhancement is implemented and provides the same level or increased level of function and protection of the wetland with a non-enhanced standard buffer per EMC 19.02.090.C.3. The Applicant proposes to reduce the onsite portion of the Wetland 1 buffer, as the buffer is currently degraded by non-native invasive species and consists almost entirely of herbaceous vegetation. The proposed buffer reduction from a 50-foot standard buffer down to a 25-foot reduced buffer with wetland buffer enhancement will improve wetland and wetland buffer function through the establishment of a suite of native trees and shrubs, and removal of non-native invasive species. These actions will increase shading, improve habitat diversity within the wetland and buffer, reduce the presence of non-native invasive species, and will lead to an overall net lift in ecological function within the wetlands and associated buffers. Table 4 presents the wetland buffer widths for the identified wetlands.

Per EMC 19.02.100.C Stream 1 is classified as a Type Ns waterbody and is subject to a standard 25-foot buffer that should not project onto the subject property due to the stream being located approximately 270 feet offsite to the north and being interrupted by multiple paved roadways.

Per EMC 19.02.220.B.1, major structures and improvements shall be set back a minimum of 15 feet from the outer edge of any wetland or stream buffer.

Table 4. Wetland and Stream Buffer Summary

Wetland	Category/ Type	Habitat Score	Proposed/ Potential Future Land Use Intensity	Standard Buffer Width	Reduced Buffer Width
Wetland 1	III	3	High	50	25
Stream 1	Ns	N/A	High	25	N/A

1. EMC 19.02.090– Wetland Buffer Requirements for Western Washington.
2. EMC 19.02.100.C- Standard stream buffers.

6.2 State and Federal Considerations

On January 18, 2023, USACE and EPA published a revised definition of "Waters of the United States" (USACE and EPA, 2023a). The revised rule became effective on March 20, 2023. On May 25, 2023, the U.S. Supreme Court issued a decision affecting the definition of Waters of the United States, or "WOTUS", in *Sackett Et Ux. V Environmental Protection Agency Et Al.* On August 29, 2023, the US EPA and USACE issued a final rule to amend the final "Revised Definition of 'Waters of the United States'" rule. The amendment conforms the definition of "Waters of the United States" to the U.S. Supreme Court's decision in the Sackett Et Ux. V Environmental Protection Agency Et Al case. The revised and amended definition of "Waters of the United States" is as follows:

(a) Waters of the United States means:

(1) Waters which are: (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (ii) The territorial seas; or (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters: (i) Waters identified in paragraph (a)(1) of this section; or (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section;

(b) The following are not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Wetland 1 appears to outlet into a drainage ditch that likely connects into the roadside drainage ditch system along Southeast 440th Street, which conveys hydrology north into Stream 1. As Stream 1 flows into Newaukum Creek, which flows into the Green River, Wetland 1 and Stream 1 are likely regulated under the CWA as they have a direct surface water connection to the Green River, which is a WOTUS. In addition, Wetlands A and 1 and Stream 1 are regulated by the WSDOE through the Revised Code of Washington (RCW) 90.48.

Chapter 7. Closure

The findings and conclusions documented in this report have been prepared for specific application to this project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

All wetland boundaries identified by SVC are based on conditions present at the time of the site inspection and considered preliminary until the flagged wetland boundaries are validated by the jurisdictional agencies. Validation of the wetland boundaries by the regulating agency provides a certification, usually written, that the wetland boundaries verified are the boundaries that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulating agencies can provide this certification.

As wetlands are dynamic communities affected by both natural and human activities, changes in wetland boundaries may be expected; therefore, wetland delineations remain valid for an indefinite period of time. Local agencies typically recognize the validity of wetland delineations for a period of five years after completion of a wetland delineation report. Development activities on a site five years after the completion of this wetland delineation report, or natural events, may require revision of the wetland delineation. In addition, changes in government codes, regulations, or laws may occur. Due to such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

OHW determinations identified by SVC are based on conditions present at the time of the site visit and considered preliminary until the OHW determinations are validated by the jurisdictional agencies. Validation of the OHW determination and jurisdictional status of such features by the regulatory agencies provides a certification, usually written, that the OHW determination is verified are the units that will be regulated by the agencies until a specific date or until the regulations are modified. Only the regulatory agencies can provide this certification.

Chapter 8. References

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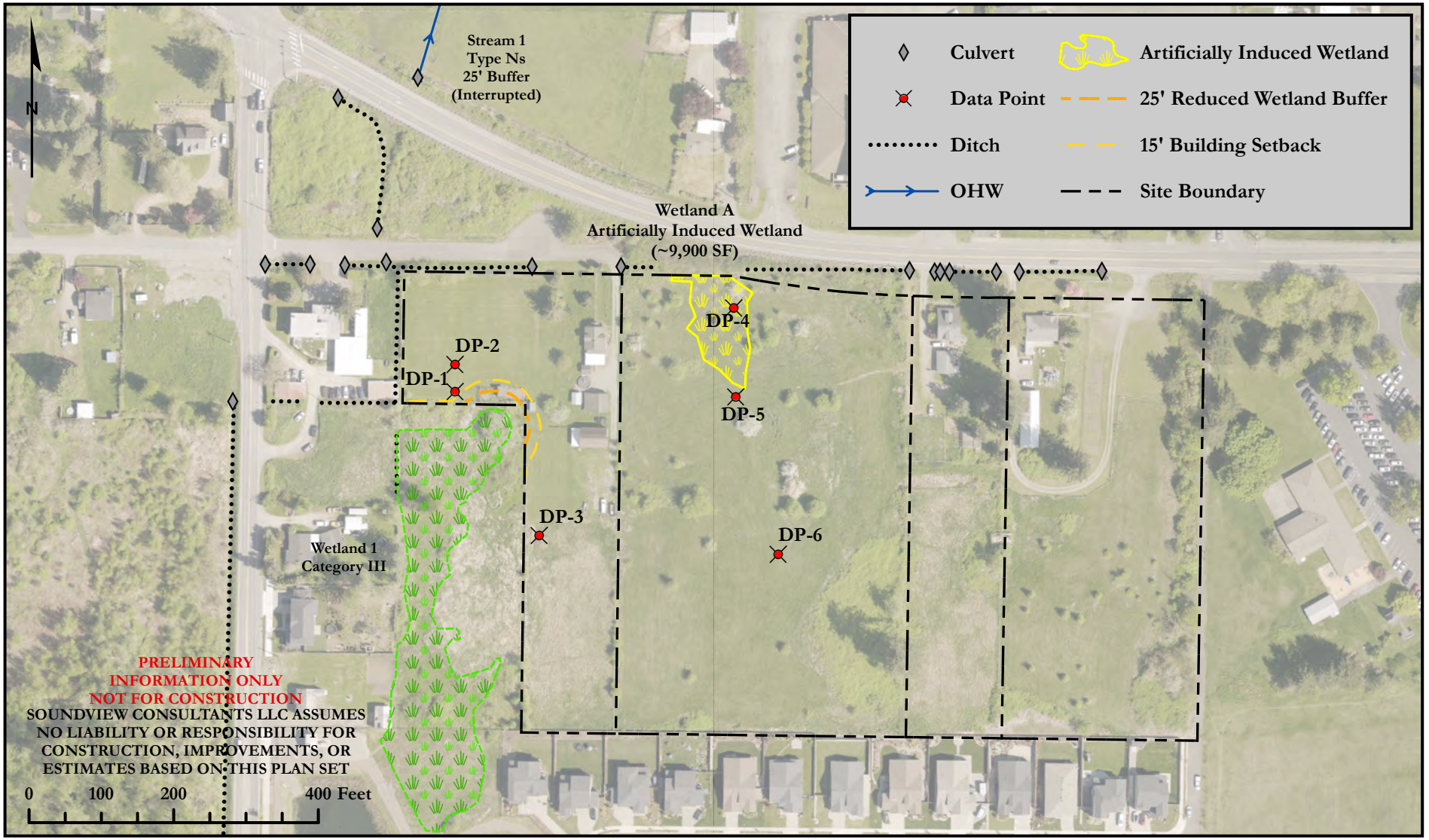
Appendix A — Existing Conditions Exhibit

EXISTING CONDITIONS - PROPOSED REDUCED BUFFERS



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SE 440TH STREET

24631 SE 440TH STREET
ENUMCLAW, WA 98022

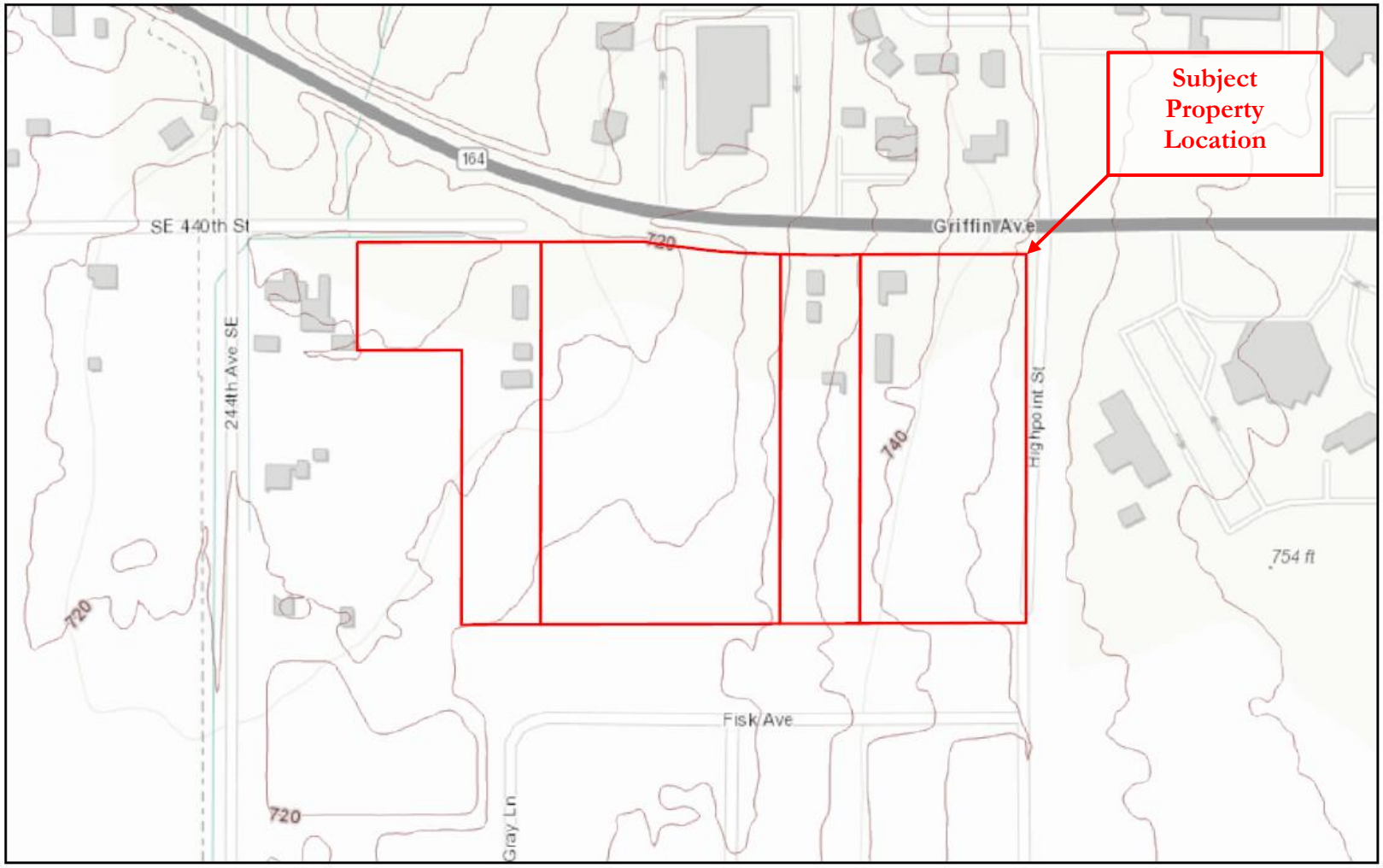
PIERCE COUNTY PARCEL NUMBERS:
2320069156, 2320069188, 2320069213, & 2320069041

DATE:	11/21/2024
JOB:	2783.0002
BY:	DDS
SCALE:	1" = 200'
FIGURE NO.	1

Appendix B — Background Information

This Appendix includes a King County Topographic Map (B1); NRCS Soil Survey Map (B2); USFWS NWI Map (B3); WDFW PHS Map (B4); King County Sensitive Areas Map (B5); King County Stream and Wetland Inventory (B6); DNR Water Typing Map (B7); WDFW and NWIFC SWIFD Map (B8); and Enumclaw Conveyance Inventory (B9).

Attachment B1 – King County Topographic Map



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contours - 5 foot (below 1000 feet) and 10 foot

Subject Property

1:4,000

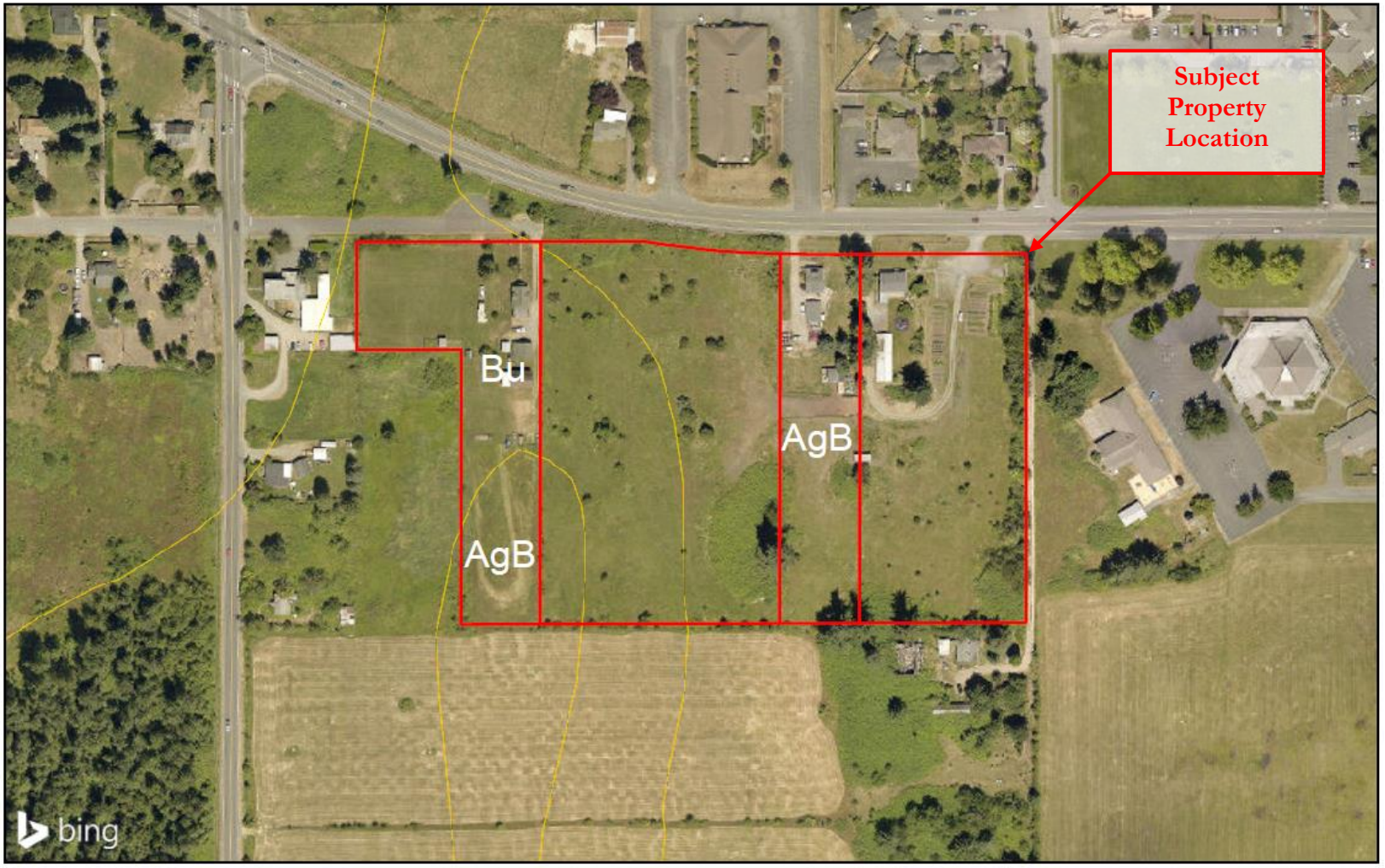
0 125 250 500 ft

0 37.5 75 150 m

County of King, Bureau of Land Management, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, King County

Soundview Consultants

Attachment B2 – NRCS Soil Survey Map



8/19/2024, 2:50:16 PM

Subject Property

USA Soils Map Units

AgB: Alderwood gravelly sandy loam, 0 to 6 percent slopes

Bu: Buckley gravelly silt loam, 0 to 3 percent slopes

1:4,000

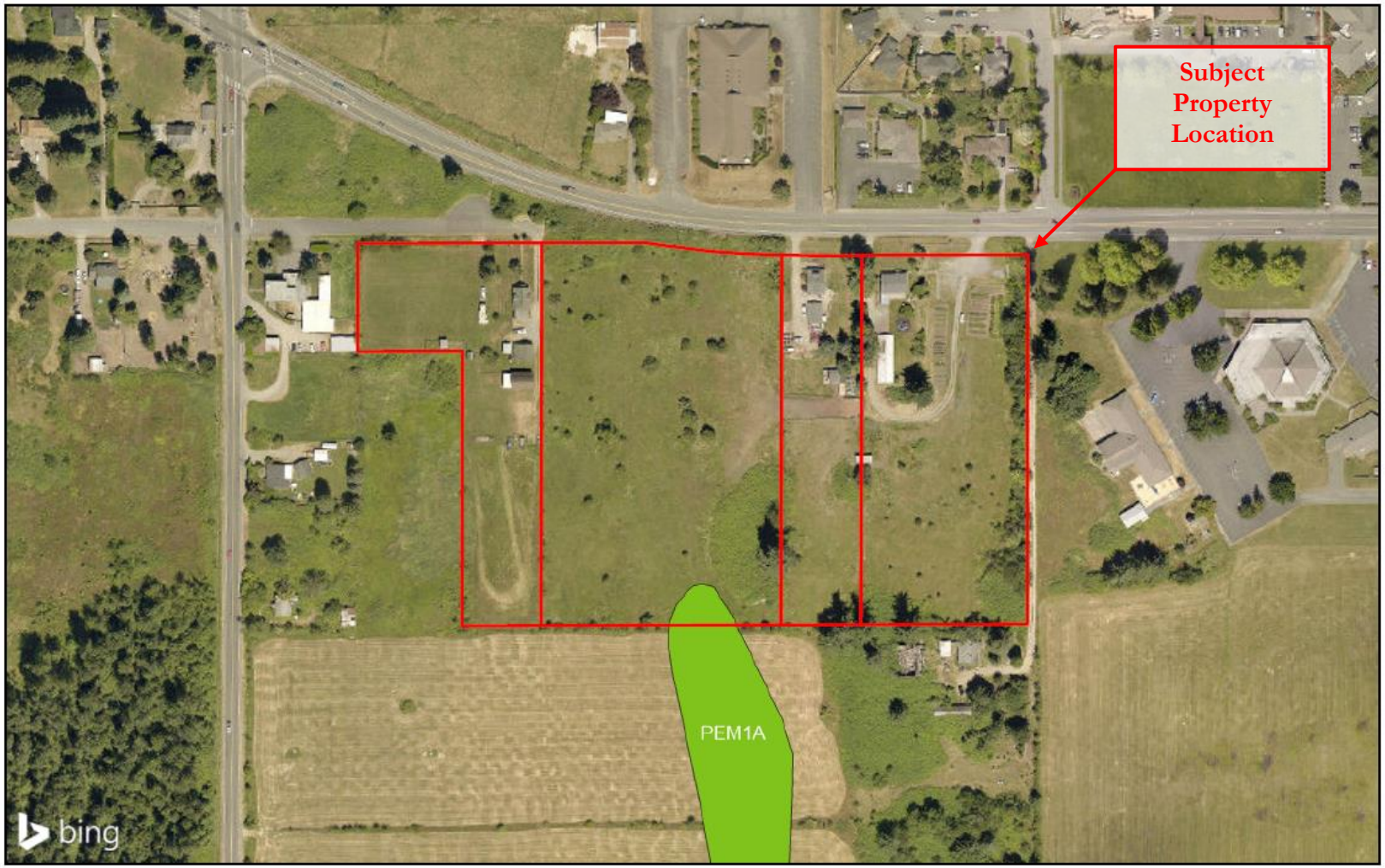
0 125 250 500 ft

0 37.5 75 150 m

Pictometry, King County, Source: USDA NRCS, Esri, © 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS © 2024

Soundview Consultants

Attachment B3 – USFWS NWI Map



8/19/2024, 2:43:49 PM

Subject Property

Wetlands

Freshwater Emergent Wetland

1:4,000

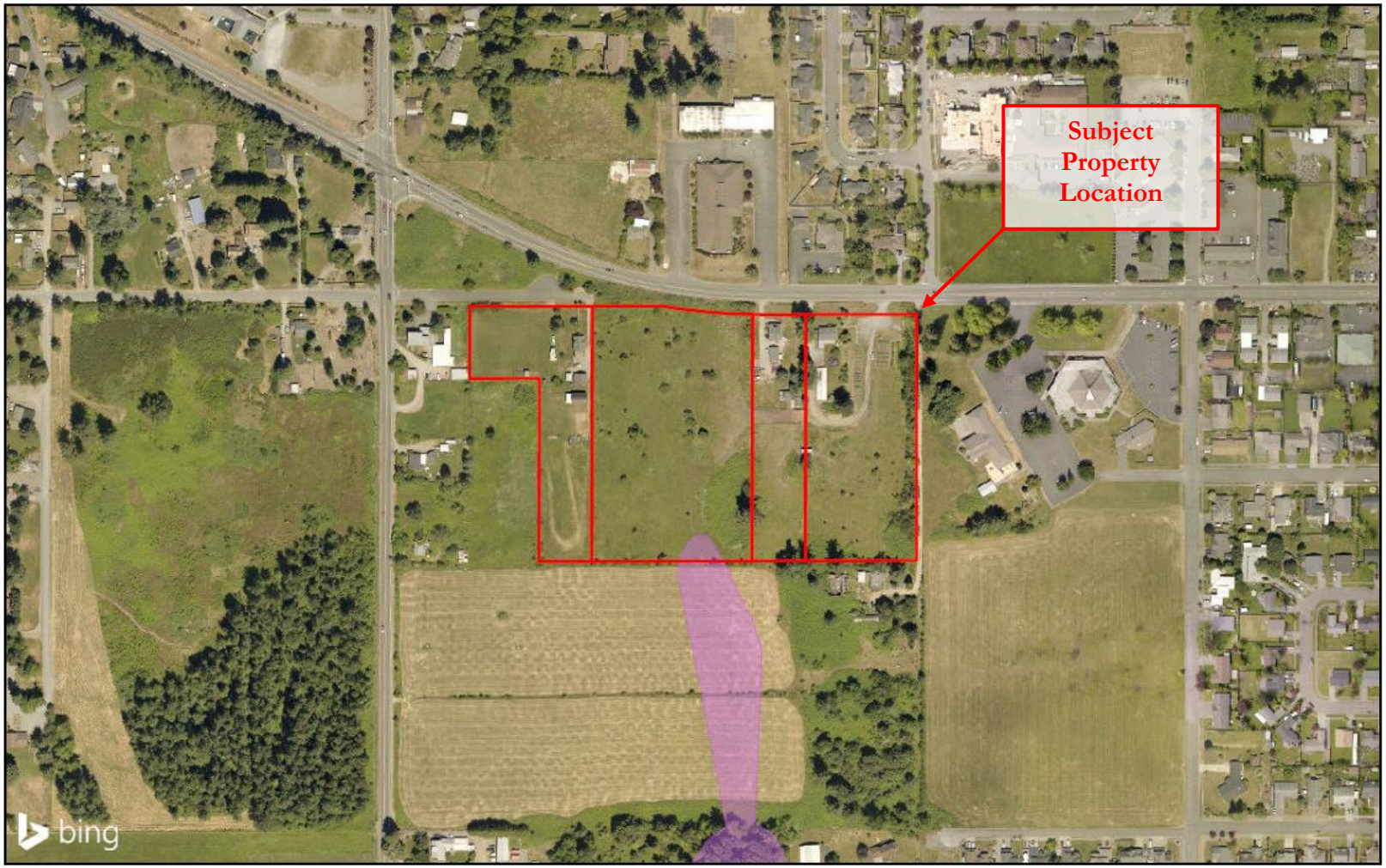
0 125 250 500 ft

0 37.5 75 150 m

Pictometry, King County, © 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS © 2024 TomTom

Soundview Consultants

Attachment B4 – WDFW PHS Map and Report



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PHS Public Polygon Outlines AS MAPPED

PHS Public Polygons AS MAPPED

Subject Property

1:6,000

0 190 380 760 ft

0 55 110 220 m

Soundview Consultants

Occurence Name	Federal Status	State Status	Sensitive Location
Freshwater Emergent Wetland	N/A	N/A	No

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1A
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Attachment B5 – King County Sensitive Area Map

8/19/2024, 2:47:25 PM

Subject Property
Sensitive area notice on title
Wetland (1990 SAO)
Stream (1990 SAO)
class 1
class 2 perennial
class 2 salmonid
class 3
unclassified
Coal mine hazard (1990 SAO)
Seismic hazard (1990 SAO)
Erosion hazard (1990 SAO)
Potential steep slope hazard areas (2016, see explanation--->)
Potential landslide hazard areas (2016, see explanation--->)

1:4,000

0 125 250 500 ft

0 37.5 75 150 m

Pictometry, King County, King County, © 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS © 2024 TomTom

Soundview Consultants

Attachment B6 – King County Stream and Wetland Inventory

8/19/2024, 2:46:54 PM

Subject Property

Lakes and large rivers

Streams

1:4,000

0 125 250 500 ft

0 37.5 75 150 m

Soundview Consultants

Attachment B7 – DNR Stream Typing Map

8/19/2024, 2:45:29 PM

Subject Property

1:4,000

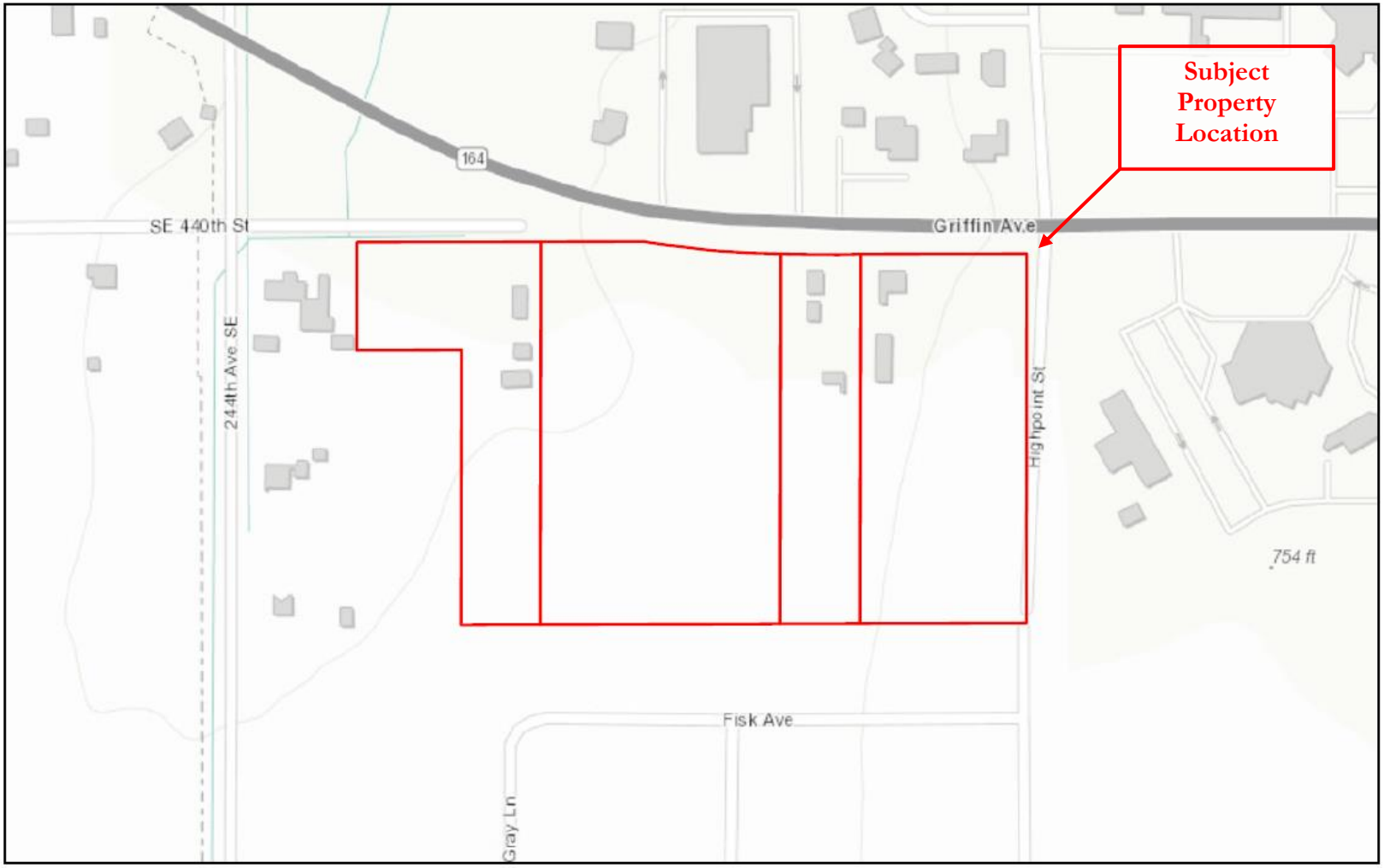
0 125 250 500 ft

0 37.5 75 150 m

Pictometry, King County, © 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS © 2024 TomTom

Soundview Consultants

Attachment B8 – WDFW and NWIFC SWIFD Map



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Subject Property

1:4,000

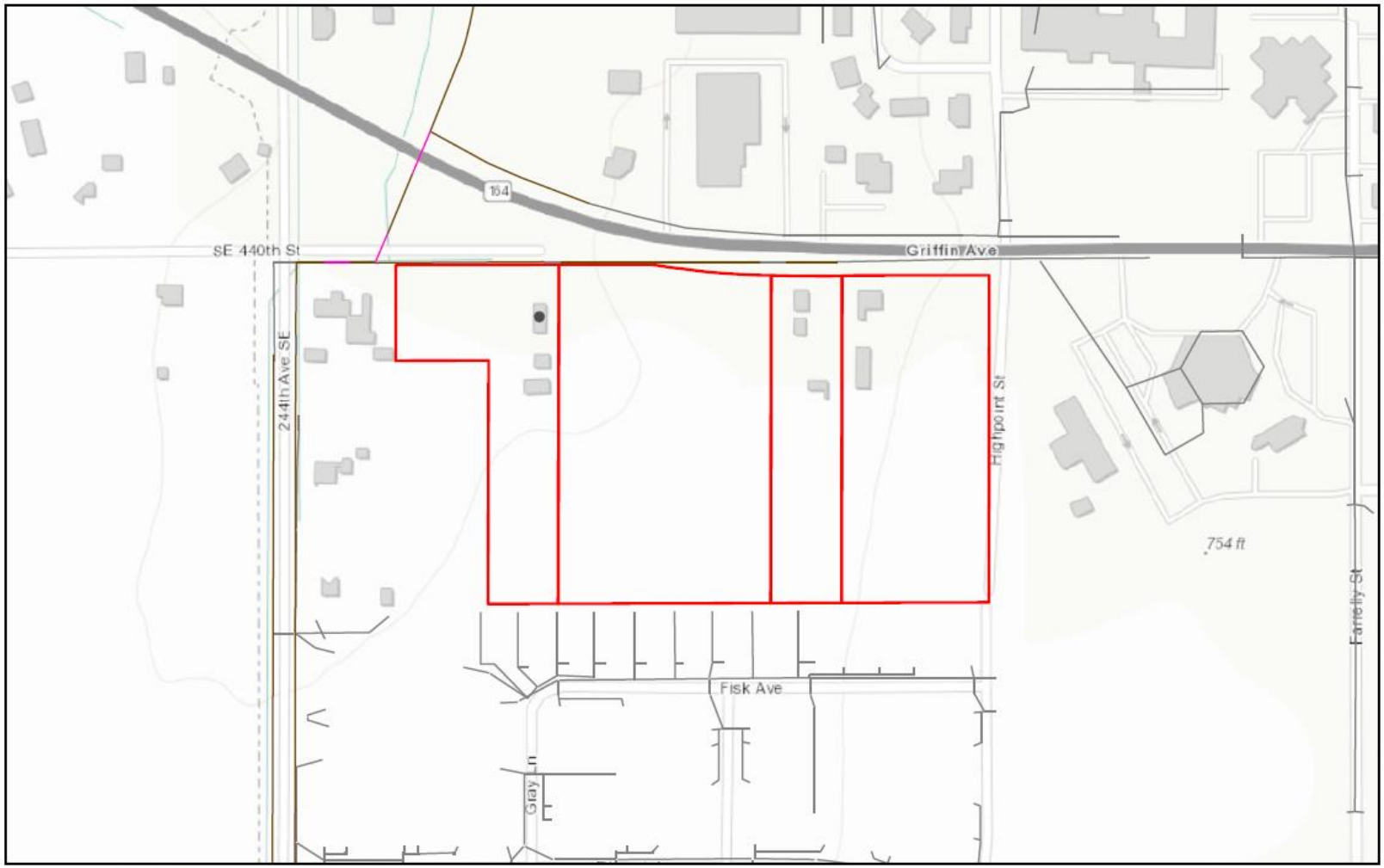
0 125 250 500 ft

0 37.5 75 150 m

County of King, Bureau of Land Management, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, WDFW

Soundview Consultants

Attachment B9 – Enumclaw Conveyance Inventory



Appendix C — Site Photographs

General Upland Conditions Onsite

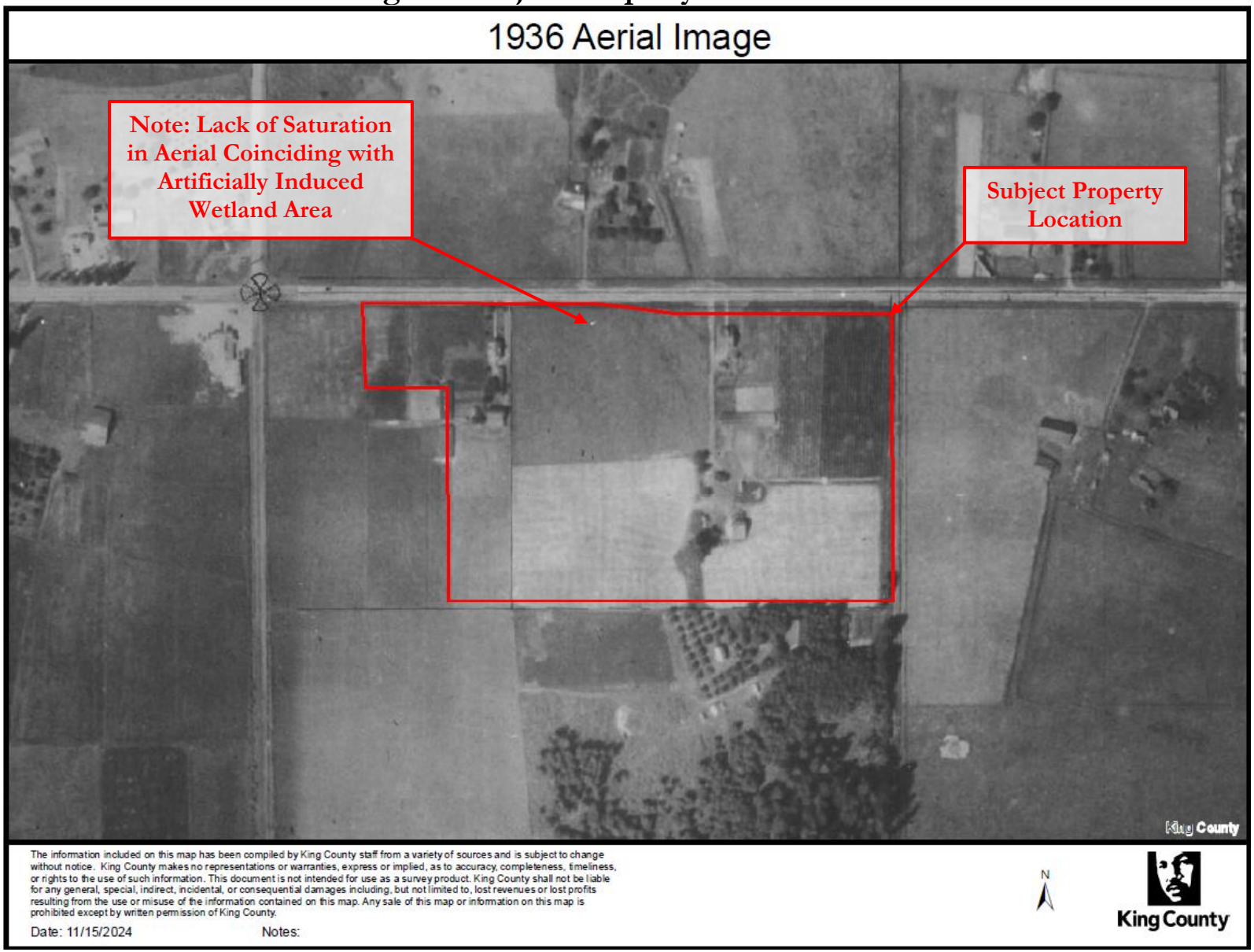
Filled/Failing Ditch Segment on Northern Portion of Subject Property (Note: Eroded Bank Indicative of failure, lack of channel to convey runoff away from site).

Stream 1 after exiting culvert on parcel 2320069177

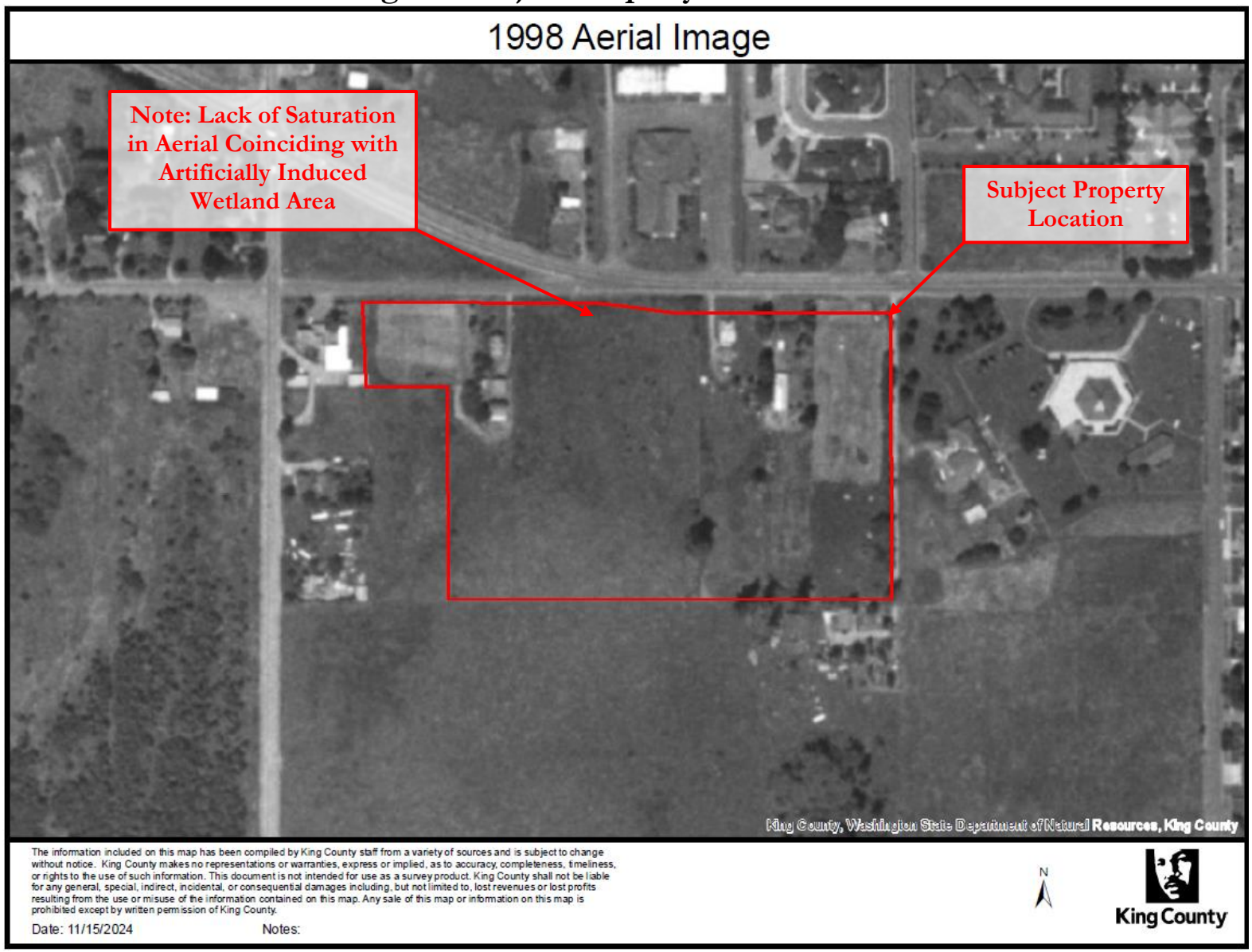
Appendix D — Historic Aerial Photographs and DNR Hillshade

This Appendix includes a 1936 Aerial Image (E1); 1998 Aerial Image (E2); 2002 Aerial Image (E3); 2005 Aerial Image (E4); 2007 Aerial Image (E5); 2009 Aerial Image (E6); and 2021 DNR Hillshade (E7).

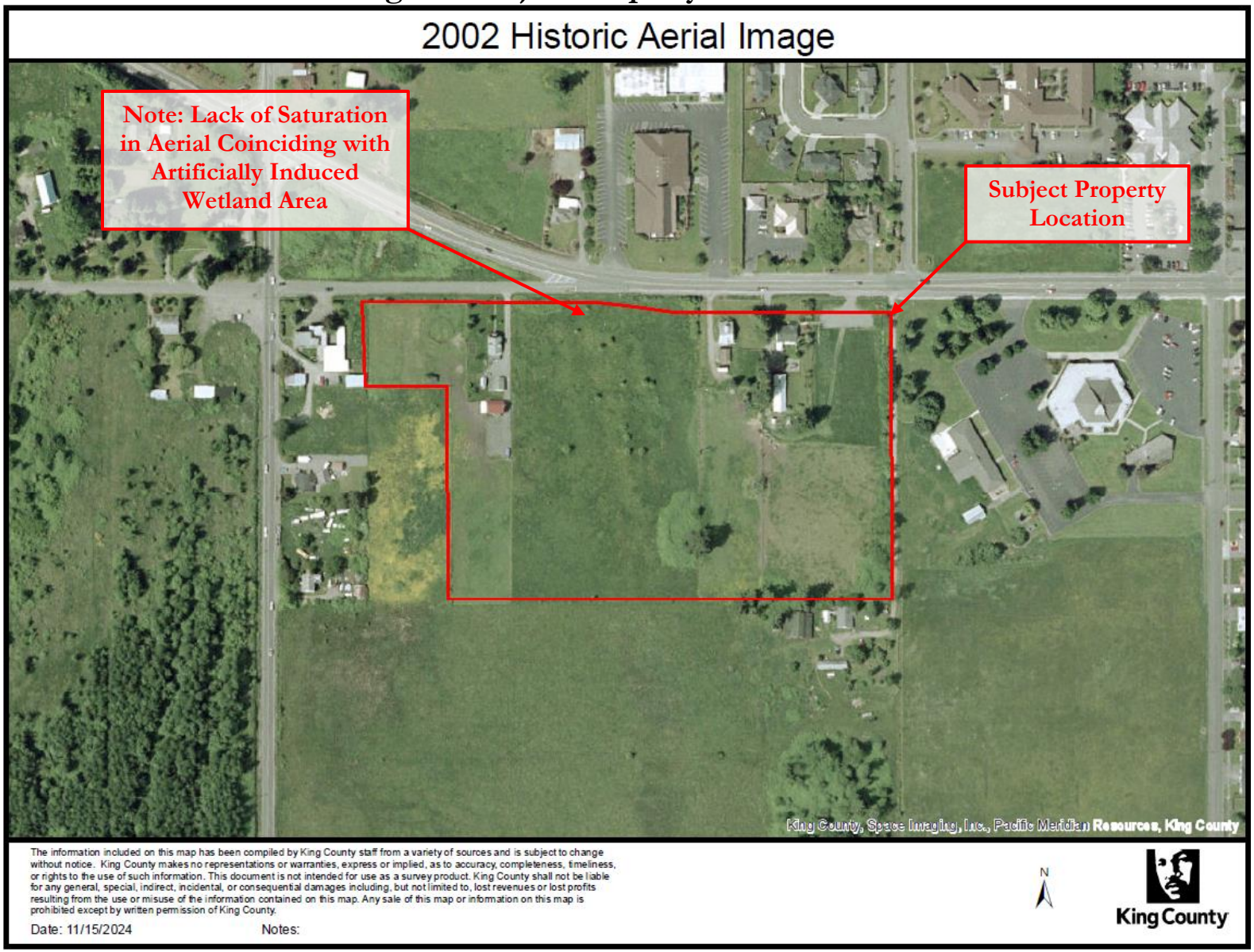
Appendix E1 – 1936 Aerial Image of Subject Property



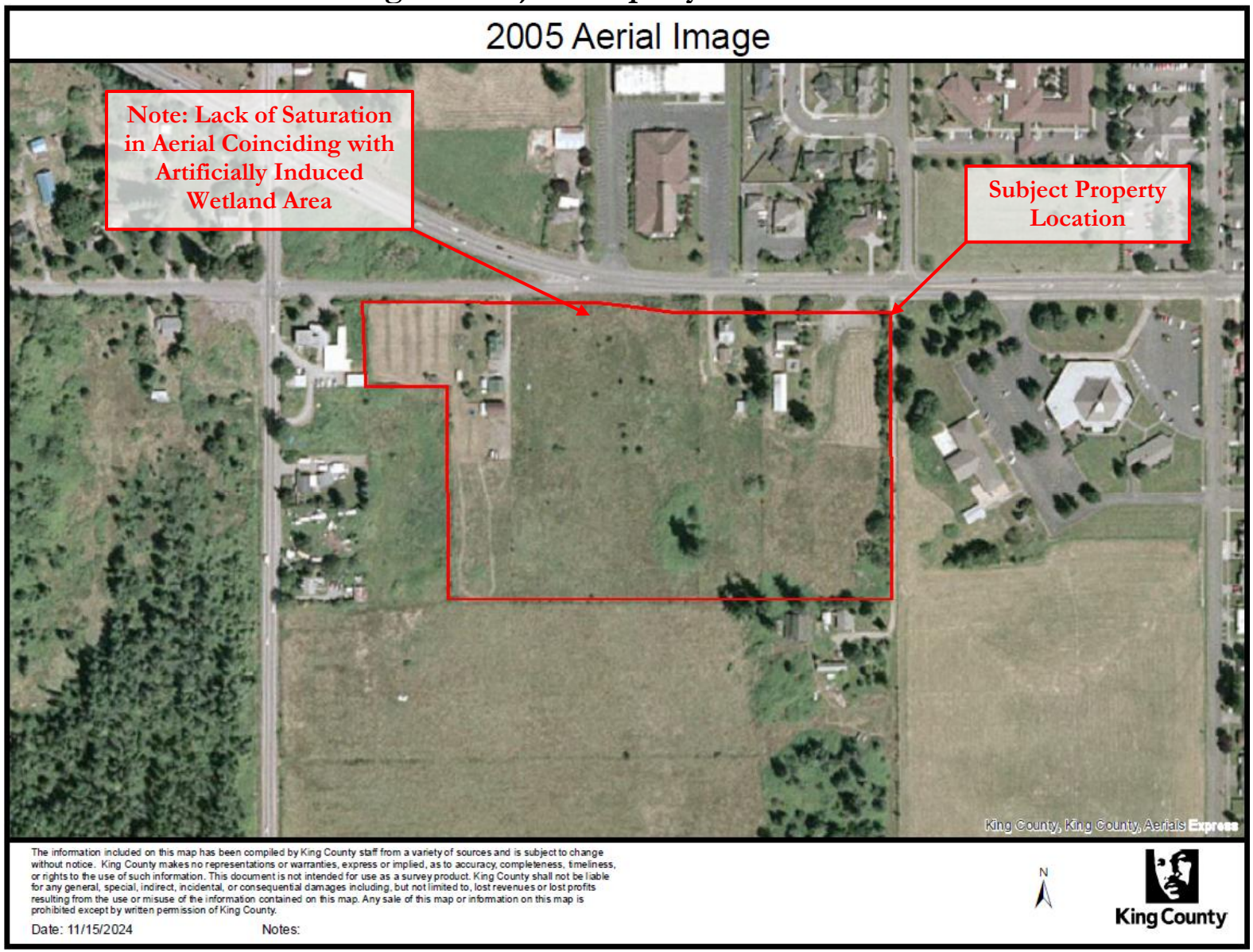
Appendix E2 – 1998 Aerial Image of Subject Property



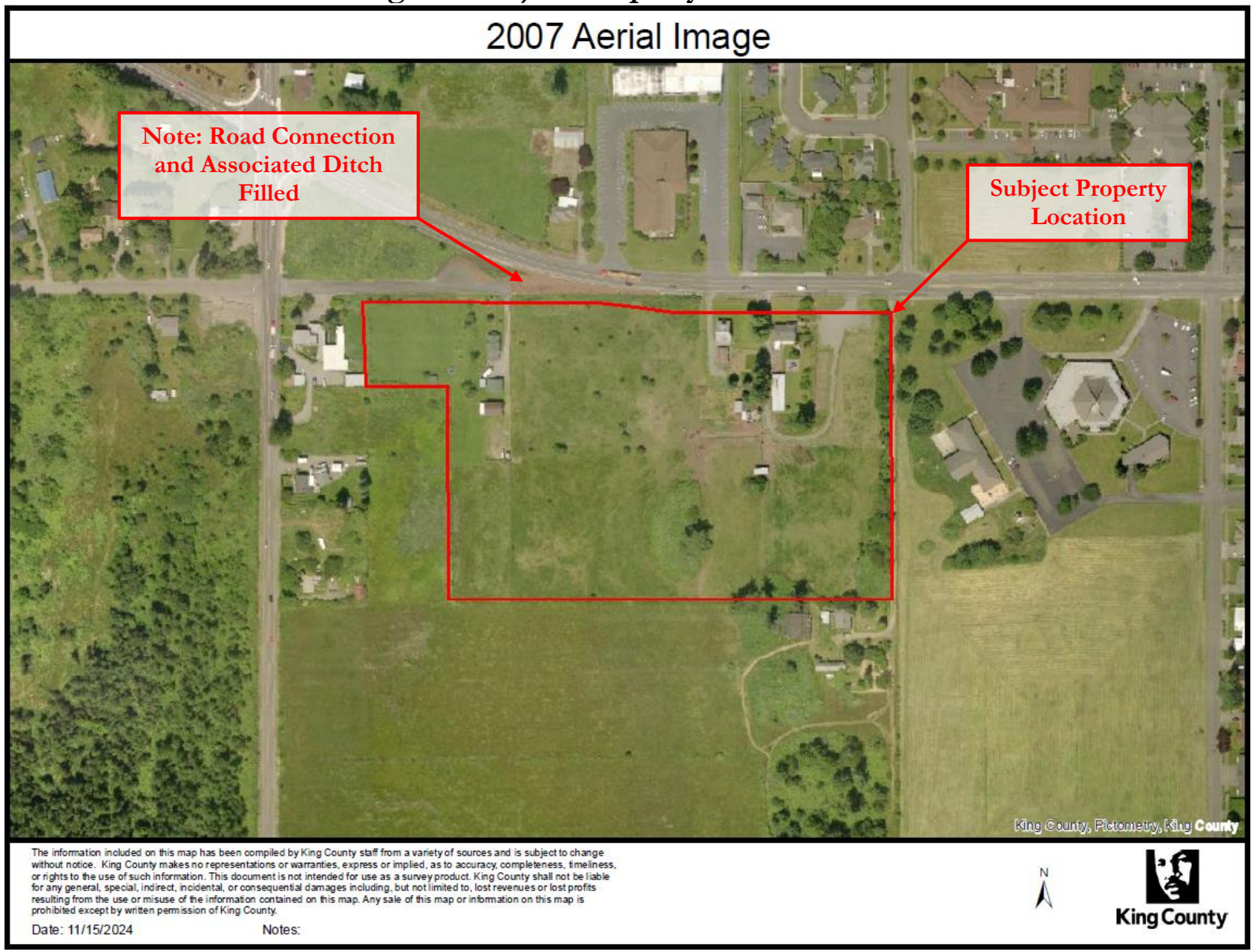
Appendix E3 – 2002 Aerial Image of Subject Property



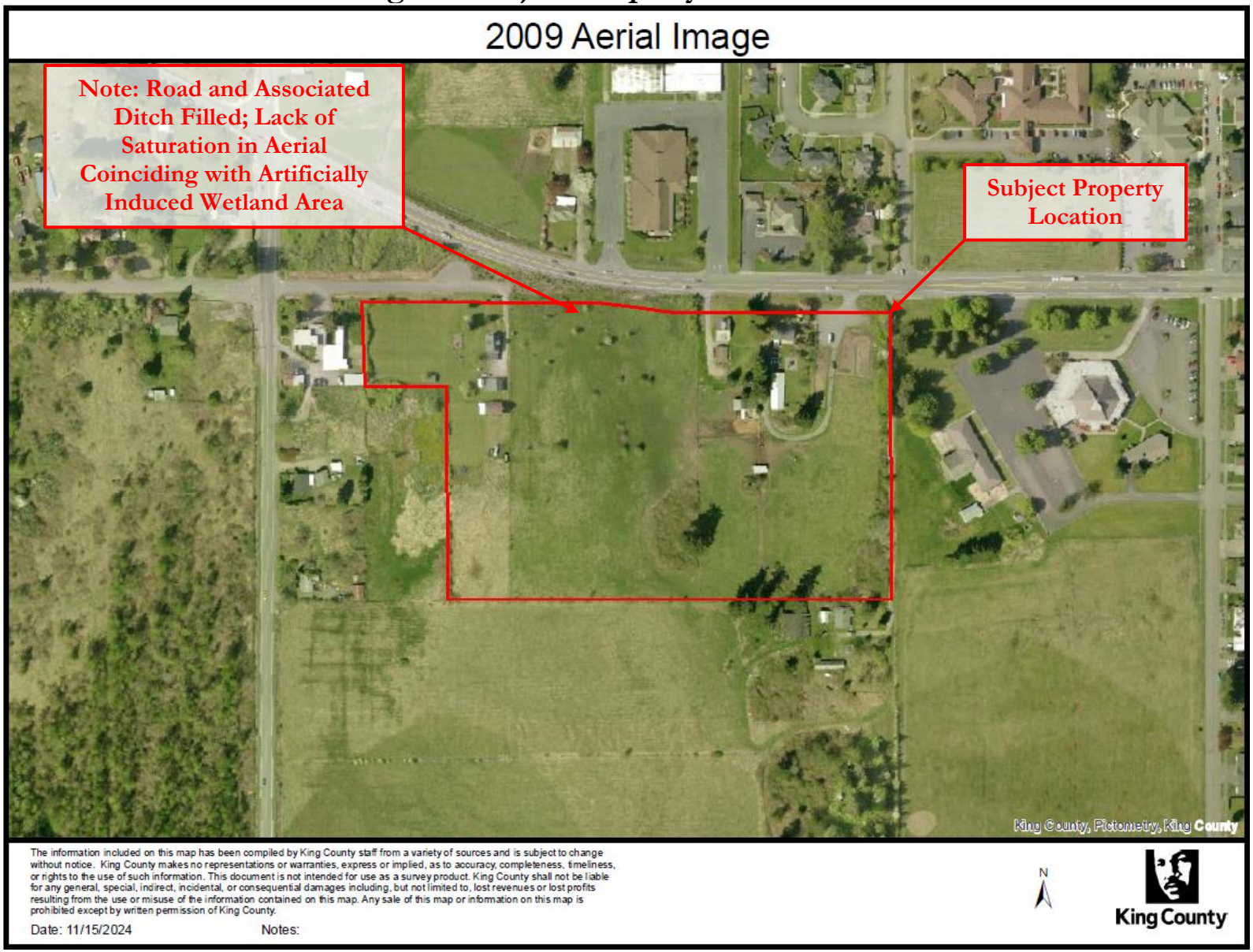
Appendix E4 – 2005 Aerial Image of Subject Property



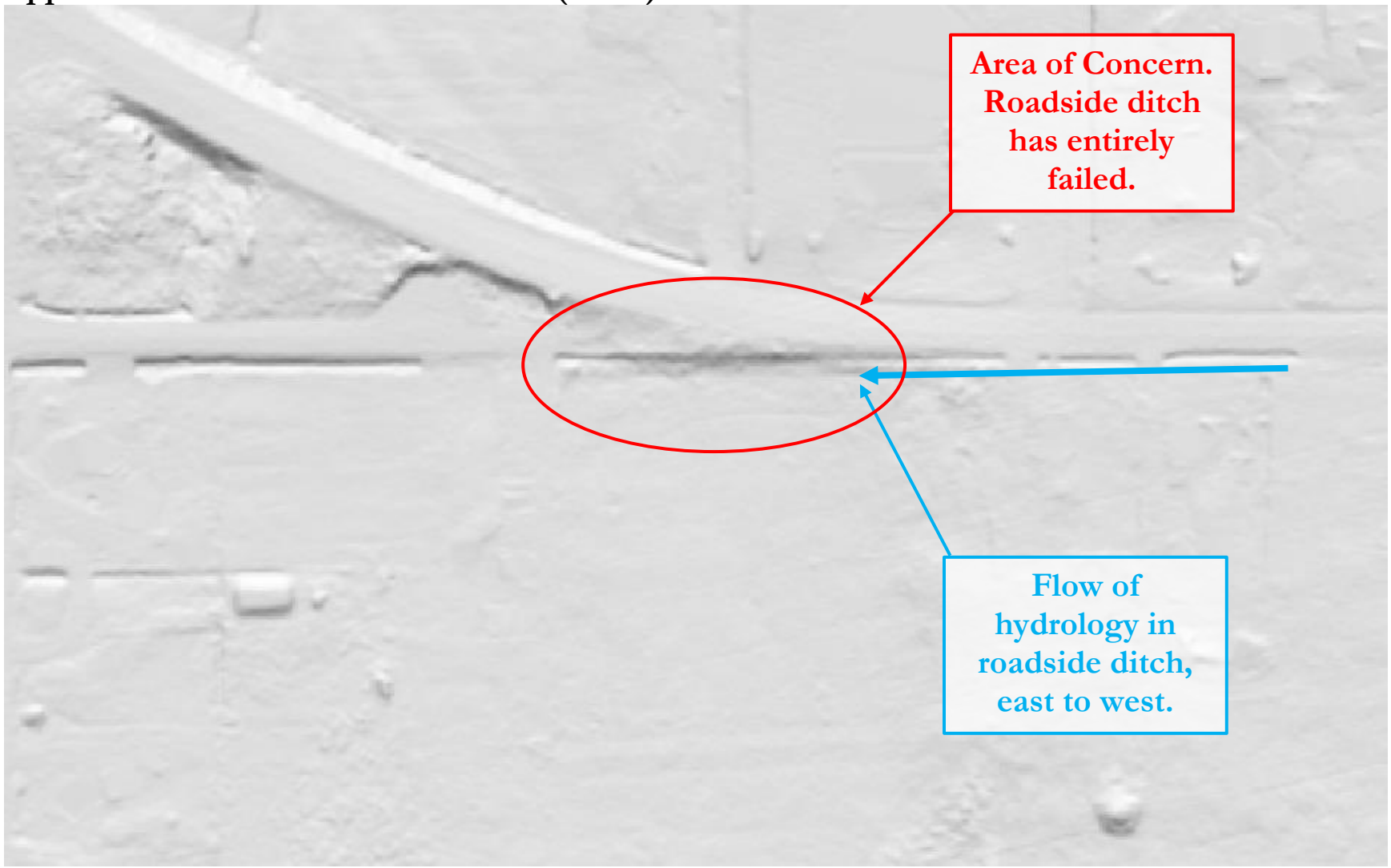
Appendix E5 – 2007 Aerial Image of Subject Property



Appendix E6 – 2009 Aerial Image of Subject Property



Appendix E7 – DNR DTM Hillshade (Lidar) 2021



DNR Hillshade (Lidar) Photo of Subject Property from 2021. Road connection between SE 440th St and SE 436th Street/Griffen Ave is not present, ditch has eroded entirely and is discharging onto the subject property.

Appendix E — Data Forms

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

Project/Site: SE 440th Street City/County: Enumclaw/King Sampling Date: 07/24/2024

Applicant/Owner: Quarterra State: WA Sampling Point: DP-1

Investigator(s): Kramer Canup and Elisabeth Gonzalez Section, Township, Range: 23, 20N, 6E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 47.206022 Long: -122.01510774 Datum: WGS 84

Soil Map Unit Name: Buckley gravelly silt loam, 0 to 3 percent slopes 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met; only hydrophytic vegetation present. DP-1 was collected on the west portion of the site near southern site boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Poa pratensis	70	Yes	FAC
2. Trifolium repens	15	No	FAC
3. Ranunculus repens	10	No	FAC
4. Schedonorus arundinaceus	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through the Dominance Test.

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 3/1	100	-	-	-	-	SiClLo	Silty Clay Loam w/ Gravel
12 - 15+	10YR 3/1	70	7.5YR 4/6	7	C	M	SiClLo	Silty Clay Loam w/ Gravel; Mixed Matrix
	10YR 4/2	23	-	-	-	-	SiClLo	Silty Clay Loam w/ Gravel; Mixed Matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: None

Depth (inches): -

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No wetland hydrology criteria met. No primary or secondary indicators observed.

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

Project/Site: SE 440th Street City/County: Enumclaw/King Sampling Date: 07/24/2024

Applicant/Owner: Quarterra State: WA Sampling Point: DP-2

Investigator(s): Kramer Canup and Elisabeth Gonzalez Section, Township, Range: 23, 20N, 6E

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 47.206123 Long: -122.01510943 Datum: WGS 84

Soil Map Unit Name: Buckley gravelly silt loam, 0 to 3 percent slopes 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met; only hydrophytic vegetation present. DP-2 was ollected on the west portion of the site, north of DP-1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Poa pratensis	65	Yes	FAC
2. Trifolium repens	20	Yes	FAC
3. Ranunculus repens	10	No	FAC
4. Taraxacum officinale	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through the Dominance Test.

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 3/1	100	-	-	-	-	SiClLo	Silty Clay Loam w/ Gravel
9 - 14	10YR 2/1	60	7.5YR 3/4	1	C	M	SiClLo	Silty Clay Loam w/ Gravel; Mixed Matrix
	10YR 3/1	29	-	-	-	-	SiClLo	Silty Clay Loam w/ Gravel; Mixed Matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): -

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No wetland hydrology criteria met. Only geomorphic position observed and two secondary indicators are required to meet for wetland hydrology criteria.

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

Project/Site: SE 440th Street City/County: Enumclaw/King Sampling Date: 07/24/2024

Applicant/Owner: Peter van Overbeek - Quarterra State: WA Sampling Point: DP-3

Investigator(s): Kramer Canup and Elisabeth Gonzalez Section, Township, Range: 23, 20N, 6E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 1

Subregion (LRR): A2 Lat: 47.205480 Long: -122.01462693 Datum: WGS 84

Soil Map Unit Name: Buckley gravelly silt loam, 0 to 3 percent slopes 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ☒ No ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met; only hydrophytic vegetation present. DP-3 collected on the west portion of the site near western site boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 10 ft)			
1. Phalaris arundinacea	50	Yes	FACW
2. Agrostis capillaris	30	Yes	FAC
3. Scirpus microcarpus	15	No	OBL
4. Ranunculus repens	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ☒ No ☐**

Remarks:
Hydrophytic vegetation criteria met through the Dominance Test.

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 2/1	100					SiCl	Silty Clay w/ Gravel
14 - 17	10YR 2/1	95	10YR 4/2	5	D	M	SiCl	Silty Clay; Mixed Matrix
17 - 24	10YR 2/1	60	7.5YR 4/6	5	C	M	SiClLo	Silty Clay; Mixed Matrix
	10YR 4/2	35	-	-	-	-	SiClLo	Silty Clay Loam; Mixed Matrix

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): -

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil criteria met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No wetland hydrology criteria met. No primary or secondary indicators observed.

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

Project/Site: SE 440th Street City/County: Enumclaw/King Sampling Date: 07/24/2024

Applicant/Owner: Quarterra State: WA Sampling Point: DP-4

Investigator(s): Kramer Canup and Elisabeth Gonzalez Section, Township, Range: 23, 20N, 6E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): A2 Lat: 47.206355 Long: -122.01356392 Datum: WGS 84

Soil Map Unit Name: Alderwood gravelly sandy loam, 0 to 8 percent slopes 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ☒ No ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐

Remarks:
All three wetland criteria met. DP-4 was collected in Wetland A, near northern site boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Crataegus monogyna	10	Yes	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	40	Yes	FAC
2. Ranunculus repens	30	Yes	FAC
3. Phalaris arundinacea	10	No	FACW
4. Schedonorus arundinaceus	10	No	FAC
5. Juncus effusus	10	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 =
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:
Hydrophytic vegetation criteria met through the Dominance Test.

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100	-	-	-	-	SiLo	Silty Loam w/ Gravel
12- 14	10YR 2/1	70	7.5YR 4/6	5	C	M	SiLo	Silty Loam w/ Gravel; Mixed Matrix
	10YR 4/2	25	-	-	-	-	SiClLo	Silty Clay Loam w/ Gravel; Mixed Matrix
14+	10YR 4/2	90	7.5YR 4/6	10	C	M	SiClLo	Silty Clay Loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): -

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A12.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Wetland hydrology criteria met through secondary indicators C9, D2 and D5. No primary hydrology indicators observed to 16-inches below ground surface.

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

Project/Site: SE 440th Street City/County: Enumclaw/King Sampling Date: 07/24/2024

Applicant/Owner: Quarterra State: WA Sampling Point: DP-5

Investigator(s): Kramer Canup and Elisabeth Gonzalez Section, Township, Range: 23, 20N, 6E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR): A2 Lat: 47.206018 Long: -122.01354509 Datum: WGS 84

Soil Map Unit Name: Buckley gravelly silt loam, 0 to 3 percent slopes 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met; only hydric soils present. DP-5 is an upland plot to Wetland A and was collected south of Wetland A, within the central portion of the site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1. Quercus garryana	1	Yes	FACU
2.			
3.			
4.			
5.			
	1	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Agrostis capillaris	30	Yes	FAC
2. Poa pratensis	20	Yes	FAC
3. Ranunculus repens	15	Yes	FAC
4. Dactylis glomerata	15	Yes	FACU
5. Taraxacum officinale	15	Yes	FACU
6. Schedonorus arundinaceus	10	No	FAC
7. Lolium perenne	10	No	FAC
8. Plantago lanceolata	10	No	FACU
9.			
10.			
11.			
	125	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum -25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met through the Dominance Test. Dominance test requires that greater than 50% of dominant species be FAC, FACW, or OBL. Prevalence index not warranted due to lack of wetland hydrology.

SOIL

Sampling Point: DP-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100	-	-	-	-	SiLo	Silty Loam w/ Gravel
8 - 16	10YR 2/1	65	7.5YR 4/6	5	C	M	SiLo	Silty Loam w/ Gravel; Mixed Matrix
	10YR 4/2	30	-	-	-	-	SiClLo	Silty Clay Loam; Mixed Matrix
16+	10YR 4/2	85	7.5YR 4/6	15	C	M	SiClLo	Silty clay loam.

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): -

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A12 (Thick Dark Surface).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No wetland hydrology criteria met. No primary or secondary hydrology indicators observed.

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

Project/Site: SE 440th Street City/County: Enumclaw/King Sampling Date: 07/24/2024

Applicant/Owner: Quarterra State: WA Sampling Point: DP-6

Investigator(s): Kramer Canup and Elisabeth Gonzalez Section, Township, Range: 23, 20N, 6E

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A2 Lat: 47.205423 Long: -122.01329659 Datum: WGS 84

Soil Map Unit Name: Buckley gravelly silt loam, 0 to 3 percent slopes 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 _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ 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 ☐ No ☒ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks:
Not all three wetland criteria met; only hydric soils present. DP-6 was collected within the southeastern portion of the site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10 ft)			
1. Dactylis glomerata	25	Yes	FACU
2. Plantago lanceolata	25	Yes	FACU
3. Schedonorus arundinaceus	20	Yes	FAC
4. Ranunculus repens	15	No	FAC
5. Trifolium pratense	15	No	FACU
6. Taraxacum officinale	10	No	FACU
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum -10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:
No hydrophytic vegetation criteria met.

SOIL

Sampling Point: DP-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	100	-	-	-	-	SiLo	Silty Loam w/ Gravel
12 - 14	10YR 2/1	80	7.5YR 4/6	5	C	M	SiLo	Silty Loam; Mixed Matrix
	10YR 4/2	15	-	-	-	-	SiClLo	Silty Clay Loam; Mixed matrix
14+	10YR 4/2	85	7.5YR 4/6	15	C	M	SiClLo	Silty clay loam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: none

Depth (inches): -

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil criteria met through indicator A12 (Thick Dark Surface).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): none

Water Table Present? Yes ☐ No ☒ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): none

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

No wetland hydrology criteria met. No primary or secondary indicators observed.

Appendix F — Wetland Rating Forms

Wetland name or number 1

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 1 Date of site visit: 7/24/2024

Rated by Kramer Canup Trained by Ecology? ✔ Yes ___ No Date of training 06/2022

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y ✔ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.

Source of base aerial photo/map ESRI ArcGIS

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

___ **Category I** – Total score = 23 - 27

___ **Category II** – Total score = 20 - 22

X **Category III** – Total score = 16 - 19

___ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	M	L	L	
Landscape Potential	H	H	L	
Value	H	M	L	TOTAL
Score Based on Ratings	8	6	3	17

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	N/A

Wetland name or number 1

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 (*can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	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 *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	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 *(can be added to another figure)*	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 (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	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	

Wetland name or number 1

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

☐ The water leaves the wetland **without being impounded**.

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

Wetland name or number 1

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

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.*

Wetland name or number 1

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 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
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 > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ___ **12-16 = H** X **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	1
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? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	3

Rating of Landscape Potential If score is: X **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	1
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	1
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	4

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

NOTES and FIELD OBSERVATIONS:

Wetland name or number 1

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 Wetland has an intermittently flowing stream/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	2
D 4.2. Depth of storage during wet periods: *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.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 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	0
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 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 Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	5

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland 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: X **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. *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.* 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): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 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 _____ There are no problems with flooding downstream of the wetland. points = 0	1
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** X **1 = M** ___ **0 = L** *Record the rating on the first page*

Wetland name or number 1

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.*

____ Aquatic bed	4 structures or more: points = 4
__x__ Emergent	3 structures: points = 2
__x__ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
____ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

____ 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

1

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 if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (*see text for descriptions of hydroperiods*).

____ Permanently flooded or inundated	4 or more types present: points = 3
__x__ Seasonally flooded or inundated	3 types present: points = 2
____ Occasionally flooded or inundated	2 types present: points = 1
__x__ Saturated only	1 type present: points = 0
____ Permanently flowing stream or river in, or adjacent to, the wetland	
____ Intermittently or seasonally flowing stream in, or adjacent to, the wetland	**2 points**
____ **Lake Fringe wetland**	**2 points**
____ **Freshwater tidal wetland**	

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

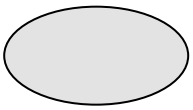
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

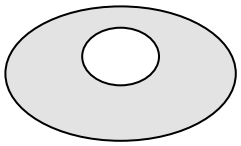
1

H 1.4. Interspersion of habitats

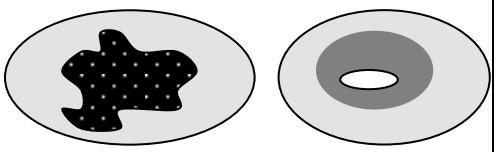
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

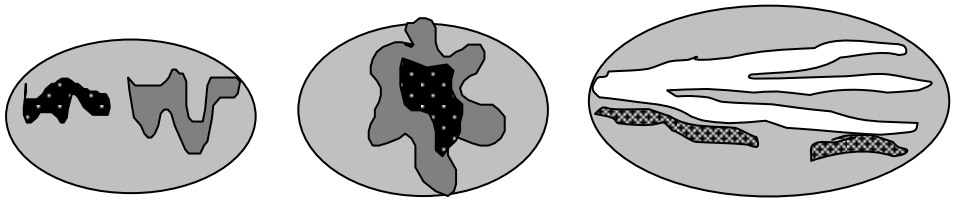


Low = 1 point



Moderate = 2 points

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



1

Wetland name or number 1

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ____Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ____Standing snags (dbh > 4 in) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____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 *(cut shrubs or trees that have not yet weathered where wood is exposed)* ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata and H 1.5 in the manual for the list of aggressive plant species)*	0
Total for H 1 Add the points in the boxes above	4

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0.00 % relatively undisturbed habitat + [(% moderate and low intensity land uses) 1.80 /2] = 0.9 % If total accessible habitat is: > 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	0
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* 12.12 % relatively undisturbed habitat + [(% moderate and low intensity land uses) 27.16 /2] = 25.7 % Total habitat > 50% of Polygon points = 3 Total habitat 0-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

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

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 ___ It has 3 or more Priority Habitats within 100 m (see next page) ___ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ___ It is mapped as a location for an individual WDFW priority species ___ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ___ 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 ___ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 ___ Site does not meet any of the criteria above points = 0	0

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

Wetland name or number 1

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

__ **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. This habitat automatically counts if mapped on the online map within 100m of the wetland. IIf not mapped, a determination can be made in the field.

__ **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.

__ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

__ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

__ **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. Do not select if Fresh Deepwater habitat is also present.

__ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

__ **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) diameter at breast height (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.

NOTES and FIELD OBSERVATIONS:

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

- [ ] **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

- [ ] **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

- [ ] **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.

- [ ] **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.

- [ ] **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

NOTES and FIELD OBSERVATIONS:

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number 1

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes –Go to **SC 1.1** ☒ No= **Not an estuarine wetland**	
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? ☐ Yes = **Category I** ☐ No - Go to **SC 1.2**	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ 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 *Spartina*, see chapter 4.8 in the manual. ☐ 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. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = **Category I** ☐ No = **Category II**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] ☐ Yes = **Category I** ☒ No - Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements ☐ Yes = Submit data to WA Natural Heritage Program for determination,[136] Go to SC 2.3 ☒ No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? ☐ Yes = **Category I** ☒ No = **Not a WHCV**	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** 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? ☐ Yes – Go to **SC 3.3** ☒ No – Go to **SC 3.2** 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? ☐ Yes – Go to **SC 3.3** ☒ No = **Is not a bog** 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? ☐ Yes = **Category I bog** ☐ No – Go to **SC 3.4** **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. 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? ☐ Yes = **Category I bog** ☐ No = **Is not a bog**	

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number 1

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.***

☐ **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.

☐ **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).

☐ Yes = **Category I** ☒ No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ 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

☐ 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 *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

☐ Yes – Go to SC 5.1 ☒ No = **Not a wetland in a coastal lagoon**

SC 5.1. Does the wetland meet all of the following three conditions?

☐ 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 in H 1.5 in the manual).

☐ 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.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) ☐ Yes = **Category I** ☐ No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. ☐ Yes – Go to **SC 6.1** ☒ No = **Not an interdunal wetland for rating**

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)? ☐ Yes = **Category I** ☐ No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? ☐ Yes = **Category II** ☐ No – Go to **SC 6.3**

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? ☐ Yes = **Category III** ☐ No = **Category IV**

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form

NOTES and FIELD OBSERVATIONS:

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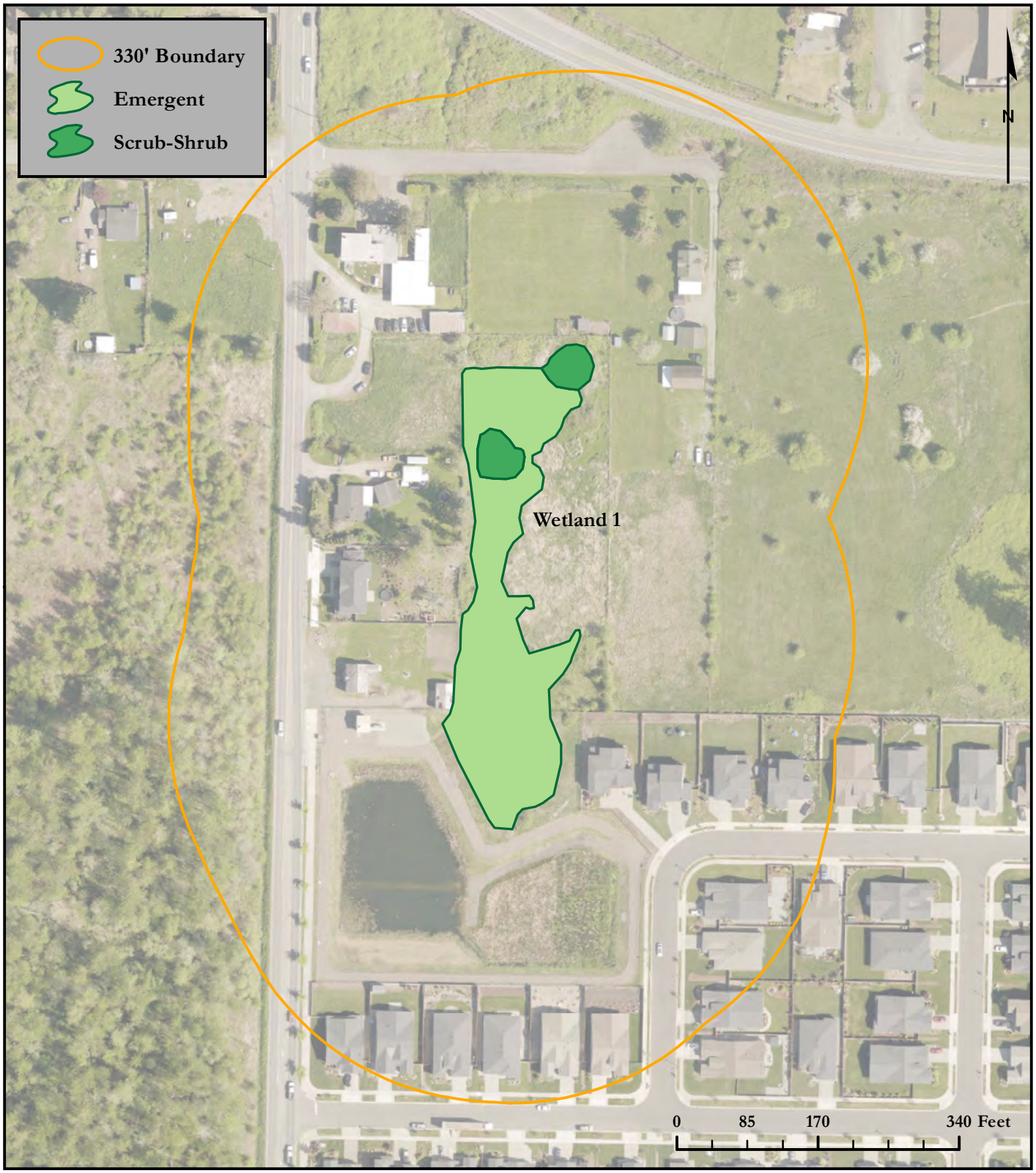
Appendix G — Wetland Rating Maps

COWARDIN MAP



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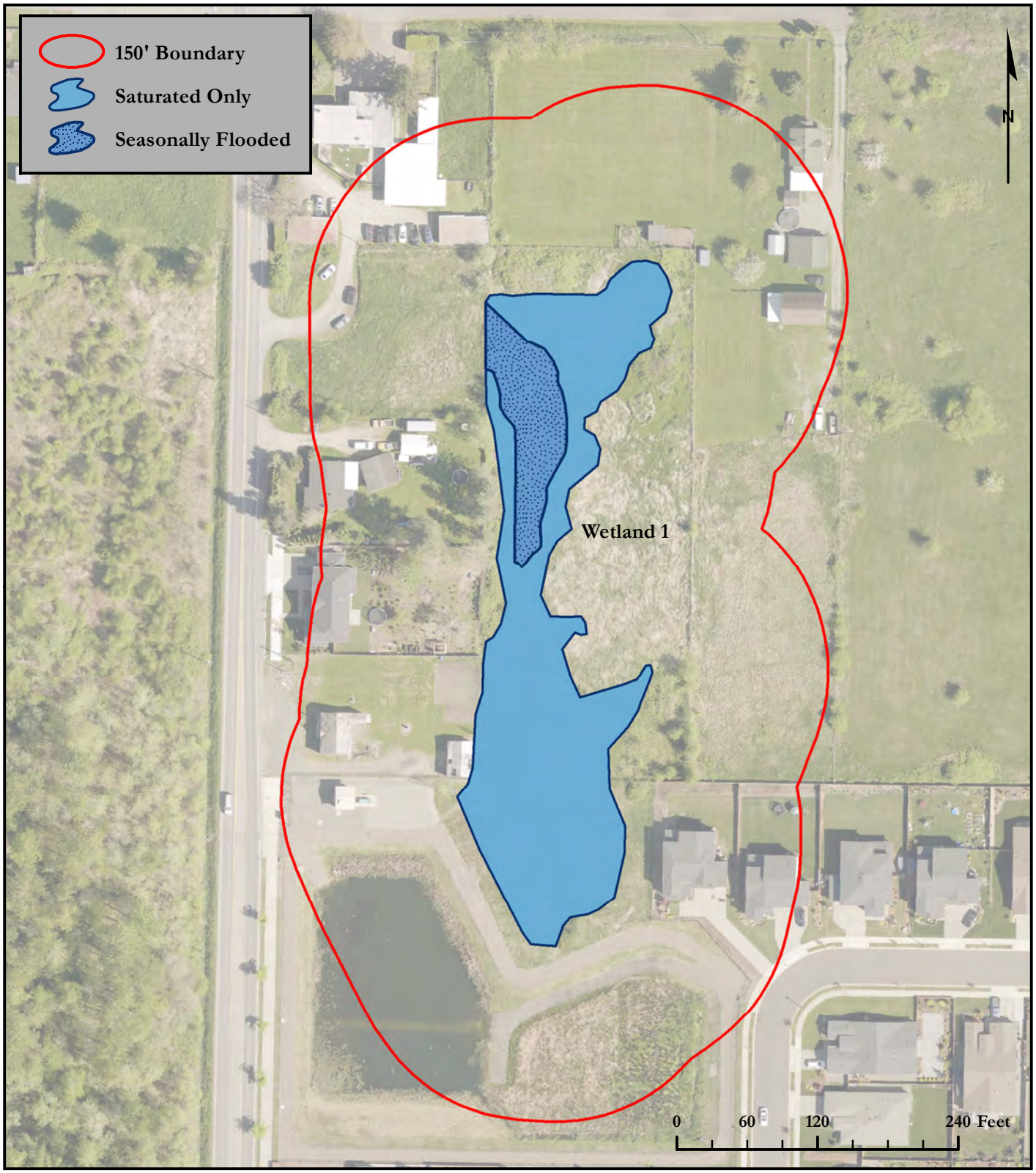
SE 440TH STREET

24631 SE 440TH STREET
ENUMCLAW, WA 98022

KING COUNTY PARCEL NUMBERS:
2320069156, 2320069188, 2320069213, & 2320069041

DATE:	11/22/2024
JOB:	2783.0002
BY:	DDS
SCALE:	1 " = 170 '
FIGURE NO.	1 of 6

HYDROPERIOD MAP



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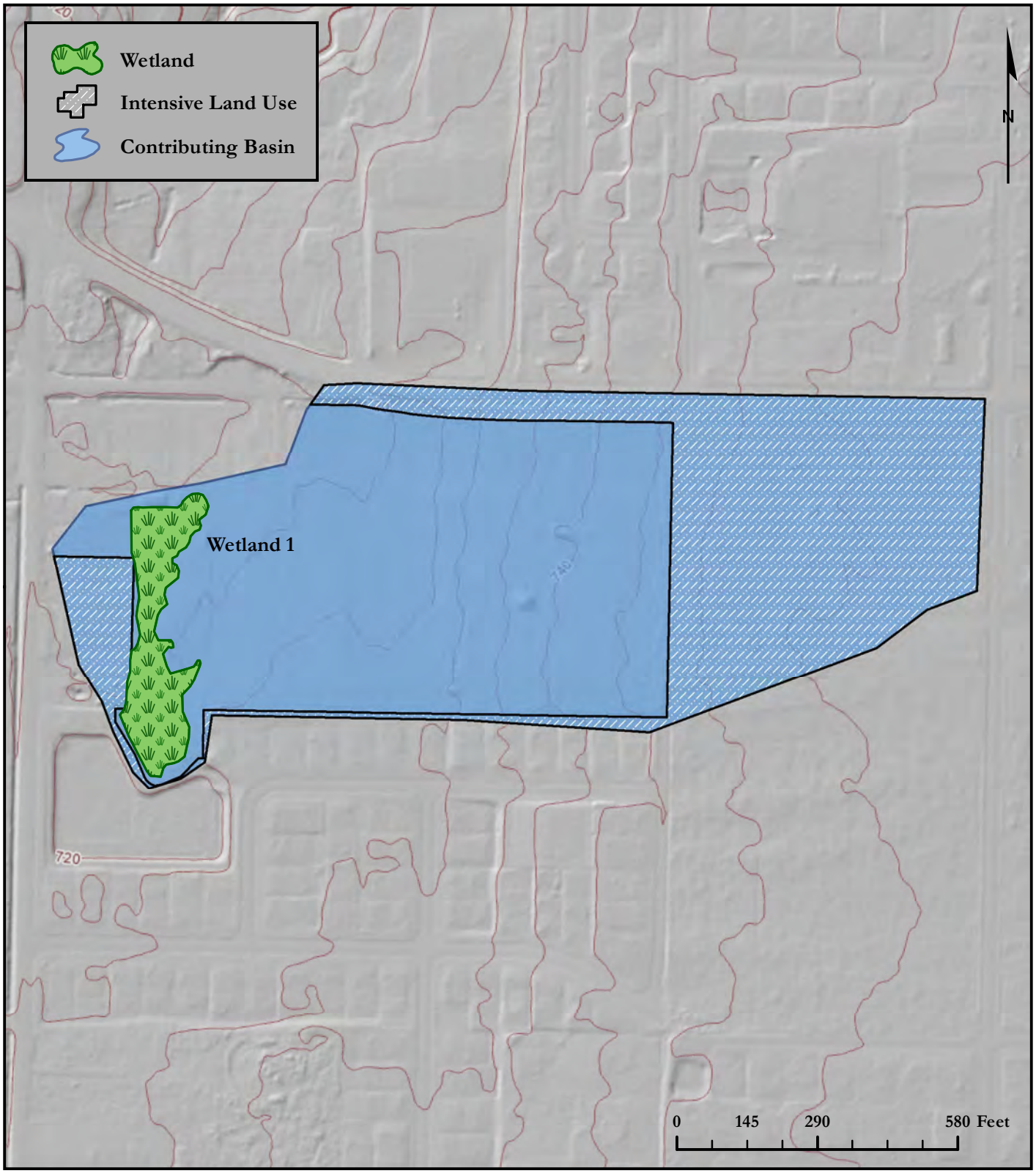
DATE:	11/22/2024
JOB:	2783.0002
BY:	DDS
SCALE:	1 " = 120 '
FIGURE NO.	2 of 6

CONTRIBUTING BASIN MAP



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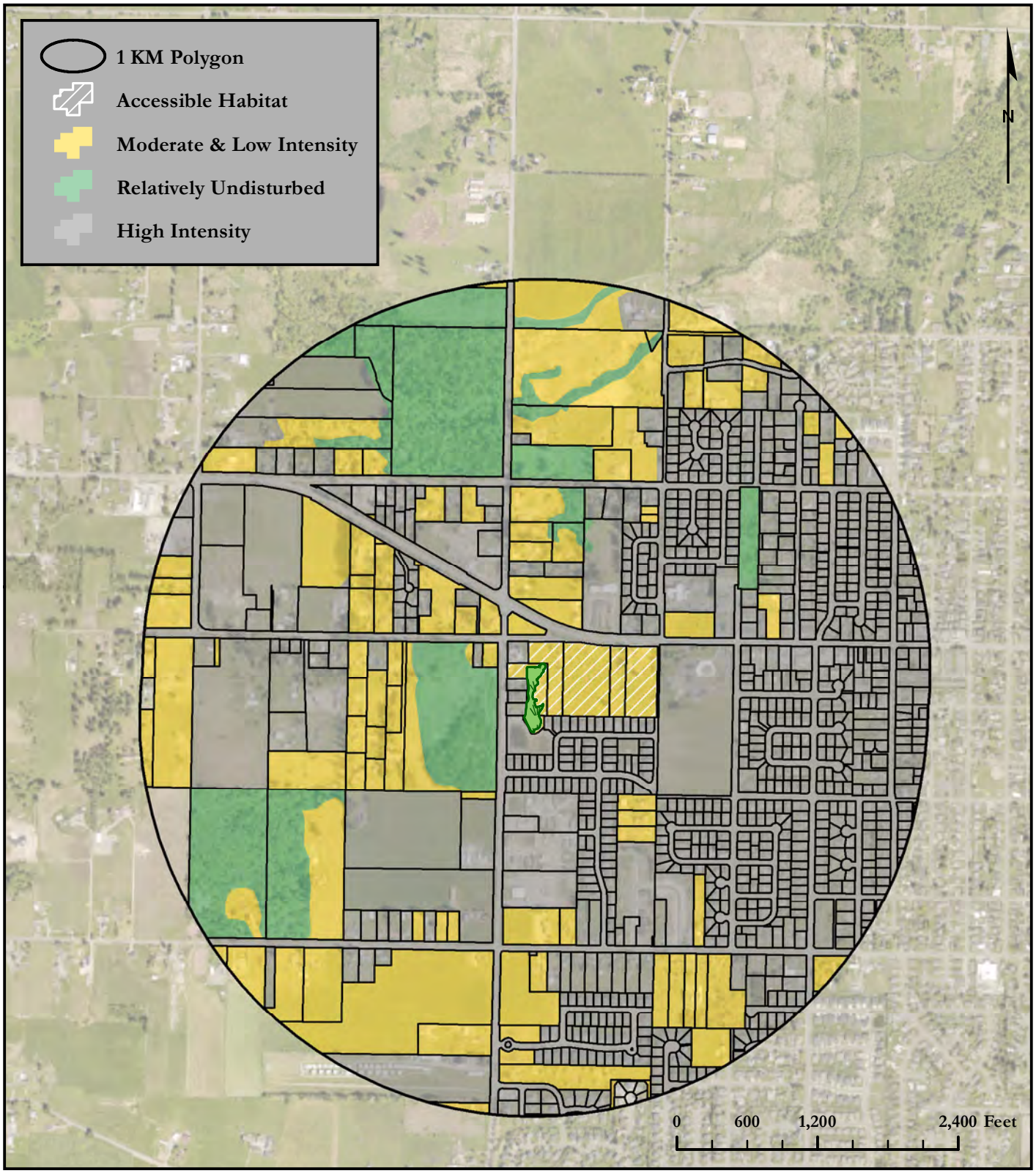
DATE:	11/22/2024
JOB:	2783.0002
BY:	DDS
SCALE:	1 " = 291 '
FIGURE NO.	3 of 6

HABITAT MAP



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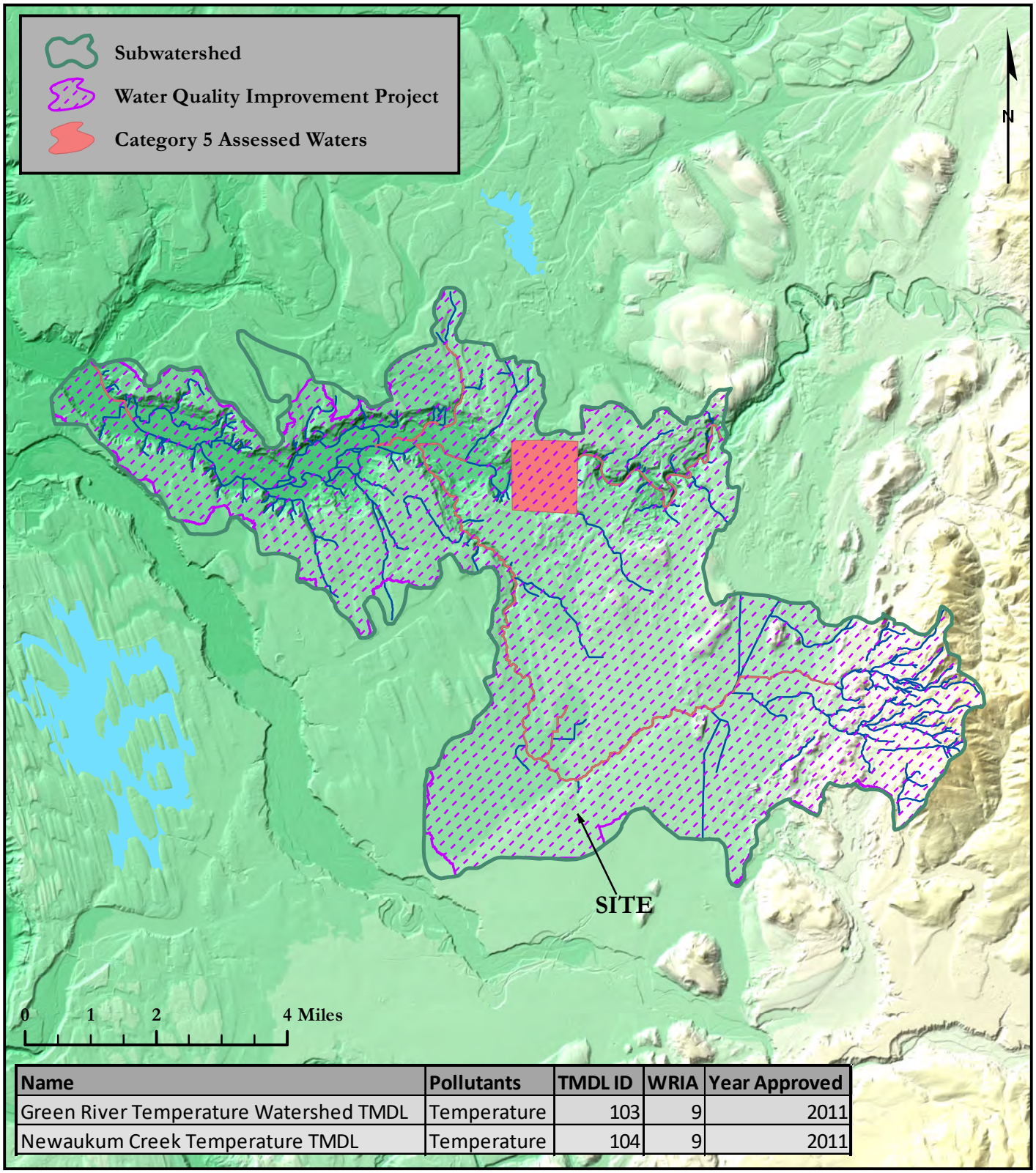
DATE:	11/22/2024
JOB:	2783.0002
BY:	DDS
SCALE:	1 " = 1,200 '
FIGURE NO.	4 of 6

303(D) MAP



Name	Pollutants	TMDL ID	WRIA	Year Approved
Green River Temperature Watershed TMDL	Temperature	103	9	2011
Newaukum Creek Temperature TMDL	Temperature	104	9	2011

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24631 SE 440TH STREET
ENUMCLAW, WA 98022

KING COUNTY PARCEL NUMBERS:
2320069156, 2320069188, 2320069213, & 2320069041

DATE: 11/22/2024
JOB: 2783.0002
BY: DDS
SCALE: 1 " = 2 mi
FIGURE NO. 5 of 6

CONTRIBUTING BASIN DATA:

D.4.0 - D.5.3		
	Area of Contributing Basin (SF)	1,125,649
	Area of Wetland 1 (SF)	53,181
	Percent of Wetland 1 within Contributing Basin	**4.724%**
	Area of Intensive Human Land Uses (SF)	452,399
	Percent of Intensive Human Land Use within Contributing Basin for Wetland 1	**40%**

HABITAT DATA:

H.2		
H.2.1	Wetland A	
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	1.80%
	Accessible Habitat	**0.90%**
H.2.2		
	Undisturbed Habitat	12.12%
	Moderate & Low Intensity Land Uses	27.16%
	Undisturbed Habitat in 1 KM Polygon	**25.70%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**60.72%**

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KING COUNTY PARCEL NUMBERS:
2320069156, 2320069188, 2320069213, & 2320069041

DATE: 11/22/2024
JOB: 2783.0002
BY: DDS
SCALE: NONE
FIGURE NO. 6 of 6

Appendix H — Qualifications

Project Manager: Kramer Canup and Elisabeth Gonzalez
Field Scientist Kramer Canup, Catherine Mills, and Michael Chesher
Report Preparation: Michael Chesher
Map Preparation: Dave Schoenfeld
Quality Assurance: Kramer Canup

Kramer Canup is a Project Manager and Environmental Scientist with 10 years of professional experience. Kramer has a professional background in project management, ecological restoration, vegetation monitoring, invasive plant management, monitoring protocol development, grant writing, tropical ecology, wildlife monitoring and environmental education. He currently manages residential and commercial projects, performs wetland and ordinary high-water delineations and shoreline assessments; conducts environmental code analysis and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the planning and permitting processes. His noteworthy experiences include supporting clients with navigating environmental regulations related to land use and development, managing wetland and riparian restoration projects, leading wetland and ordinary high water delineations throughout the Puget Sound region, and instructing study abroad courses in the Peruvian Amazon for the University of Washington.

Education: Bachelor of Arts in Environmental Studies with a minor in Ecological Restoration from the University of Washington. *Professional Trainings:* Basic Wetland Delineator Training with the Wetland Training Institute 40-hour USACE wetland delineation training. Kramer has been formally trained through the Washington State Department of Ecology, Coastal Training Program, How to Determine the Ordinary High Water Mark, Using the Washington State Wetland Rating System (2014), and Using the Credit-Debit Method for Estimating Mitigation Needs.

Elisabeth Gonzalez is an Environmental Project Manager and Scientist with 3 years of professional experience. Elizabeth has a background in project management, shoreline permitting, forest and marine ecology, and wetland delineations. Elisabeth brings experience in managing bulkhead repair and replacement projects, single-family residence planning and wetland delineations, and extensive permitting projects for marina renovations. Previously, she has managed multiple shoreline projects in assisting clients with permitting processes while implementing regulations within engineering designs. She completed her training in wetland delineations with the Wetland Training Institute in October of 2021 and has since been involved in wetland delineations all across western Washington. Elisabeth has also completed two internships with the US Forest Service and Maui Ocean Center, where she performed a variety of research-based field work and worked as a research assistant with Saving the Blue collecting data on shark species and environmental impacts on the ocean.

Education: Bachelor of Science in Environmental Science with a concentration in Forest and Marine Ecology and Oceanography from the University of Colorado, Boulder.

Dave Schoenfeld is a GIS Developer at Soundview Consultants. He has a background in forestry, application development for web platforms, and drone operations. Dave currently develops GIS for delineation exhibits, designs wetland, stream, and shoreline restoration projects as well as performs field work.

Education: Dave earned a Master of Science degree in Geospatial Technologies while teaching undergraduate level Environmental Sciences at Green River Community College. He has also received a Bachelor of Science Degree in Environmental Science with a focus on water quality and has an Associates of Science in Natural Resources and GIS. *Professional Trainings*: Dave is certified through the University of Washington as a GIS Developer and has received formal training through the Washington State Department of Ecology and Coastal Training Program in the use of the Washington State Wetland Rating System and best practices for mitigation & restoration designs. He is also a certified FAA Drone Operator and Private Pilot.

Catherine Mills is an Environmental Scientist with 3 years of professional experience. Catherine has a background in chemical ecology and pollination biology from the Pollination Lab at Colorado State University, and has received extensive, hands-on experience working in lab and field settings, studying wildlife management, biodiversity and natural resource policy during her undergraduate program. She currently preforms wetland, stream, and shoreline delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and prepares environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process for various land use projects. Her noteworthy experiences include assisting projects with permitting and mitigation requirements for the Salish Sea Nearshore Programmatic (SSNP).

Education: Bachelor of Science degree in Fish, Wildlife and Conservation Biology from Colorado State University, Fort Collins. *Professional Certifications:* GIS Certificate, PADI Open Water Diver Certificate *Professional Trainings:* She has received training from 40-hour wetland delineation training for Western Mountains, Valleys, & Coast and Arid West Regional Supplement through Terrascience, Using the Revised 2014 Wetland Rating System for Western Washington, How to Determine the Ordinary High Water Mark through the Washington Department of Ecology, and How to Conduct a Forage Fish Survey through the Washington Department of Fish and Wildlife.

Michael Chesher is a Staff Scientist with 1 year of professional experience. Michael has a background in biological evaluations, shoreline regulations and project management. Michael currently assists in shoreline, wetland, and stream delineations and fish and wildlife habitat assessments; conducts environmental code analysis; and drafts environmental assessment and mitigation reports, biological evaluations, and permit applications to support clients through the regulatory and planning process for various land use projects. His noteworthy experience includes earning his Bachelor of Science in Biological Science and Bachelor of Mathematics in Statistics degrees from Queensland University of Technology in Brisbane, Australia. Through his engagement with his two degrees, Michael gained extensive experience in data collection, laboratory analysis, data analysis and report writing.

Education: Bachelor of Science in Biological Science and Bachelor of Mathematics in Statistics degrees from Queensland University of Technology in Brisbane, Australia. *Professional Trainings:* Alternatives to Bulkhead 1 – 6; Western Washington: How to Determine the Ordinary High Water Mark; Advanced Shoreline Permitting: No Net Loss and Mitigation, Using the 2021 Interagency Wetland Mitigation Guidance; Using the Washington State Wetland Rating System (2014) in Western Washington; Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats; PMEP Estuaries Explorer and Estuary Viewer Data Tools Training.