WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT AND BUFFER AVERAGING AND ENHANCEMENT PLAN

Exhibit 7

CRESTVIEW VILLAGE II

FEBRUARY 2019

REVISED JULY 2019

REVISED OCTOBER 2019

Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

WETLAND AND FISH AND WILDLIFE HABITAT ASSESSMENT REPORT AND BUFFER AVERAGING AND ENHANCEMENT PLAN

CRESTVIEW VILLAGE II

FEBRUARY 20, 2019

REVISED JULY 19, 2019

REVISED OCTOBER 2, 2019

PROJECT LOCATION

2316 132ND STREET SOUTHEAST
MILL CREEK, WASHINGTON 98012

PREPARED FOR

TD HOLDINGS, LLC
15 LAKE BELLEVUE DRIVE, SUITE 102
BELLEVUE, WASHINGTON 98005

PREPARED BY

SOUNDVIEW CONSULTANTS LLC
2907 HARBORVIEW DRIVE
GIG HARBOR, WASHINGTON 98335
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Soundview Consultants
Environmental Assessment
Planning + Land Use Solutions

Executive Summary

Soundview Consultants LLC (SVC) has been assisting TD Holdings LLC (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment Report and Buffer Averaging and Enhancement Plan for a proposed residential development on an approximately 3.23-acre property located at 2318, and 2316 132nd Street Southeast in the City of Mill Creek, Washington. The subject property consists of three parcels situated in the Northwest ¼ of Section 32, Township 28 North, Range 05 East, (Snohomish County Tax Parcel Numbers 2805320020-0800, 2805320020-1000, 2805320020-2300).

SVC investigated the subject property for potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species in the spring and summer of 2018. Follow-up site visits were conducted in April and May 2019 by SVC and again in May 2019 with SVC and the City of Mill Creek's (City) third-party reviewer, ESA. This report has been updated to include additional information as outlined in the third-party reviews (ESA, 2019a, 2019b, and 2019c) and SVC's responses (SVC, 2019 and PK Enterprises). Using current wetland delineation methodology, the site investigation identified one potentially-regulated wetland (Wetland A) on the subject property. Wetland A is classified as a Category IV depressional wetland with a low habitat score, which requires a standard 50-foot buffer per Mill Creek Municipal Code (MCMC) Chapter 18.06.930. No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were observed within 300 feet of the subject property.

The proposed project includes the residential development of the site with associated infrastructure. The proposed project has been carefully designed to avoid impacts to Wetland A and associated buffer to the greatest extent feasible, and the proposed frontage improvements are anticipated to remain within the existing road prism; however, buffer averaging is proposed in order to maintain reasonable site development and to accommodate the required stormwater infrastructure. The averaged buffer area is proposed in a location which will increase buffer function and protection of Wetland A. The Applicant also proposes to enhance the Wetland A buffer to provide a net gain in ecological functions.

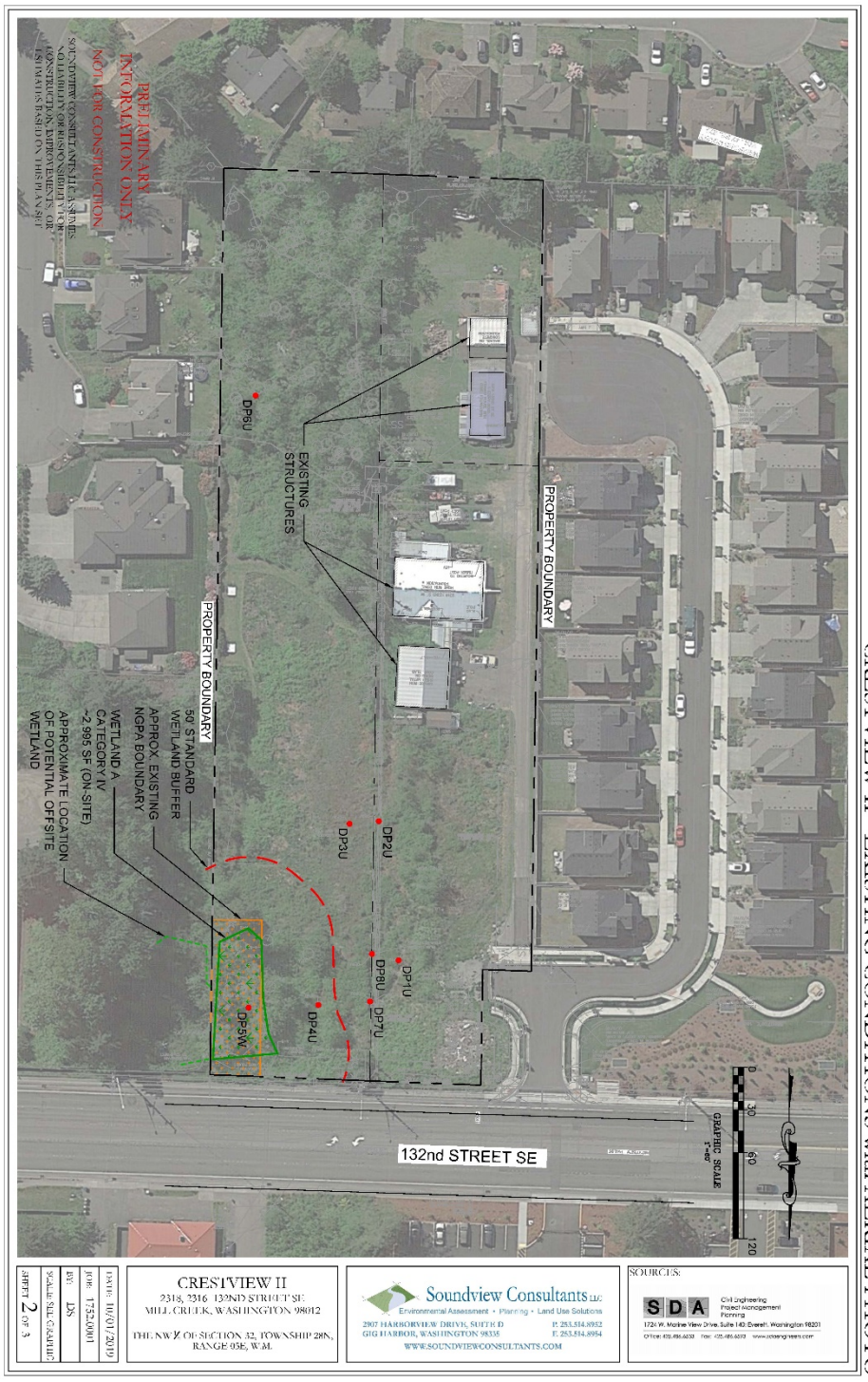
The summary table below identifies regulation by different agencies.

Wetland	Size (onsite)	Category[1]	Regulated Under MCMC	Regulated Under RCW 90.48	Regulated Under Clean Water Act
Wetland A	3,140 SF	IV	**Yes**	**Yes**	**Potentially**

Notes:

1. Current Washington State Department of Ecology (WSDOE) wetland rating system (Hruby, 2014) per MCMC 18.06.910.C.

Site Map


PRELIMINARY
INFORMATION ONLY
NOT FOR CONSTRUCTION
SOUNDVIEW CONSULTANTS, LLC ASSUMES
NO LIABILITY OR RESPONSIBILITY FOR
CONSTRUCTION IMPROVEMENTS OR
INSTALLATIONS BASED ON THIS PLAN SET
DP5U
EXISTING STRUCTURES
PROPERTY BOUNDARY
PROPERTY BOUNDARY
50' STANDARD WETLAND BUFFER
APPROX EXISTING NGPA BOUNDARY
WETLAND A CATEGORY IV ~2,995 SF (ON-SITE)
APPROXIMATE LOCATION OF POTENTIAL OFFSITE WETLAND
DP3U
DP2U
DP8U
DP1U
DP7U
DP4U
DP6W
132nd STREET SE
GRAPHIC SCALE
30
60
120
CRESTVIEW II
7318, 7316 132ND STREET SE
MILL CREEK, WASHINGTON 98012
THE NW¼ OF SECTION 32, TOWNSHIP 28N, RANGE 05E, W.M.
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BY: DS
SCALE: SEE GRAPHIC
SHEET 2 OF 3
CRESTVIEW II - EXISTING CONDITIONS with AERIAL PHOTO

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Chapter 1. Introduction

Soundview Consultants LLC (SVC) has been assisting TD Holdings LLC (Applicant) with a Wetland and Fish and Wildlife Habitat Assessment Report and Buffer Averaging and Enhancement Plan for a proposed residential development on an approximately 3.23-acre property located at 2318, and 2316 132nd Street Southeast in the city of Mill Creek, Washington. The subject property consists of three parcels situated in the Northwest ¼ of Section 32, Township 28 North, Range 05 East, (Snohomish County Tax Parcel Numbers 2805320020-0800, 2805320020-1000, 2805320020-2300).

The purpose of the wetland and fish and wildlife habitat assessment report is to identify the presence of potentially-regulated wetlands, waterbodies, fish and wildlife habitat, and/or priority species that may be found on or near the subject property and assess potential impacts to any such critical areas and/or species from the proposed project.

This report provides conclusions and recommendations regarding:

- Site description, project description, and area of assessment;
- Identification, delineation, and assessment of potentially-regulated wetlands and other waterbodies within the vicinity of the proposed project;
- Identification and assessment of potentially-regulated fish and wildlife habitat and/or priority species within the vicinity of the proposed project;
- Standard buffer recommendations, building setbacks, and development limitations;
- Existing site map detailing identified critical areas and standard buffers;
- Proposed site plan with project details;
- Documentation of impact avoidance and minimization measures;
- Buffer averaging plan; and
- Supplemental information necessary for local regulatory review.

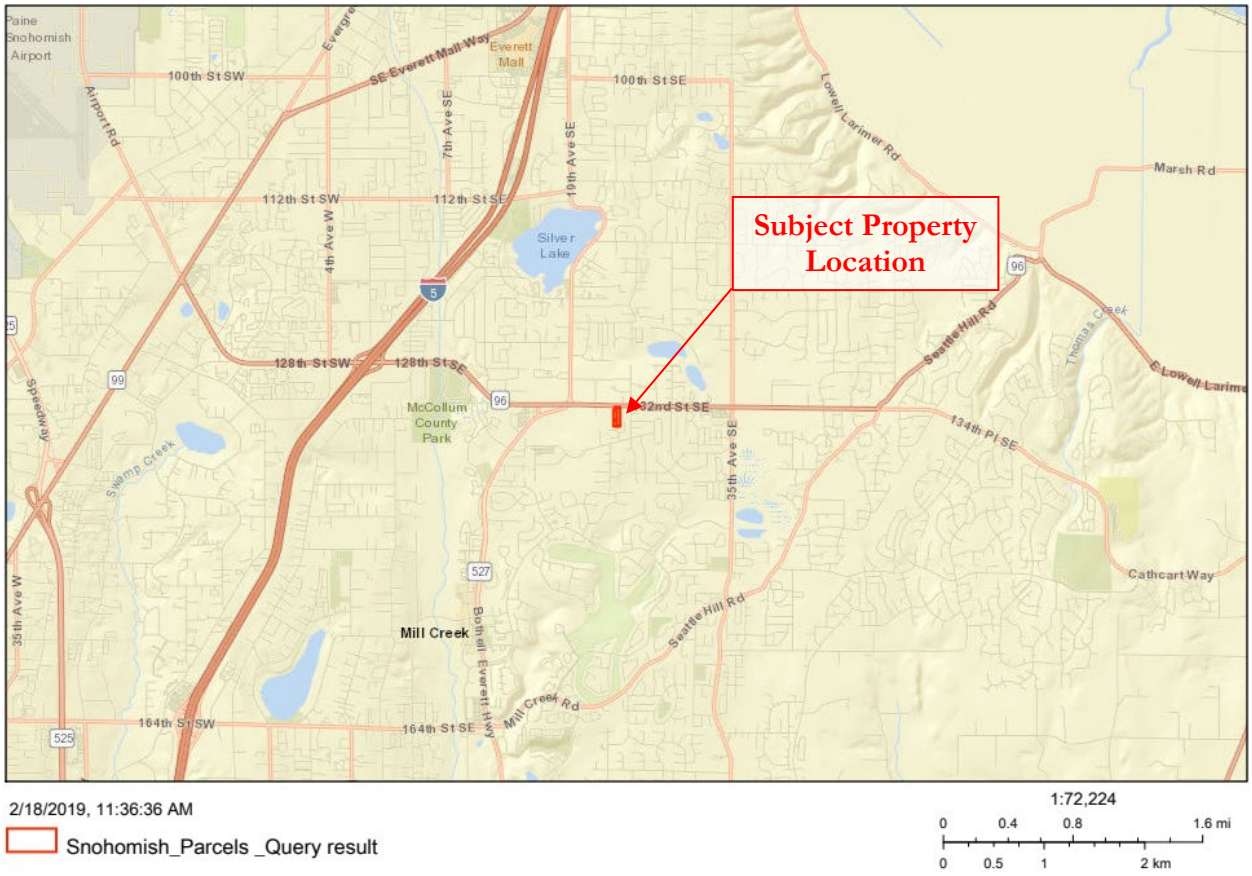
Chapter 2. Proposed Project

2.1 Location

The subject property is located at 2318, and 2316 132nd Street Southeast in the city of Mill Creek, Washington (Figure 1). The subject property consists of three parcels situated in the Northwest ¼ of Section 32, Township 28 North, Range 05 East, (Snohomish County Tax Parcel Numbers 2805320020-0800, 2805320020-1000, 2805320020-2300).

To access the site from Interstate 5 North, take Exit 186 for Washington-96 East/128th Street Southeast. Continue on Washington-96 East for 1.6 miles, where the subject property will be on the right.

Figure 1. Vicinity Map.



2.2 Project Description

The proposed project includes the residential development of 25 lots, an internal access road, stormwater infrastructure, open space, and frontage improvements along 132nd Street Southeast. The proposed project has been carefully designed to avoid impacts to Wetland A and associated buffer to the greatest extent feasible, and the proposed frontage improvements will remain within the existing road prism; however, buffer averaging is required in order to maintain reasonable site development and to accommodate the required stormwater infrastructure. As the identified wetland is already

indirectly impacted from the adjacent roadway and the addition of stormwater infrastructure will improve water quality functions onsite, no net loss in ecological function will occur from the proposed buffer averaging. In addition, the Applicant proposes to enhance the wetland buffer, which will result in an improved protection and habitat function over baseline conditions.

Chapter 3. Methods

SVC investigated, delineated, and assessed wetlands, waterbodies, and other potentially-regulated fish & wildlife habitat on and within 300 feet of the subject property in Spring and Summer of 2018. Follow-up site visits were conducted in April and May 2019 by SVC and again in May 2019 with SVC and the City of Milly Creek's (City) third-party reviewer. 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), Washington State Department of Natural Resources (DNR) water typing system, Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) and SalmonScape mapping tools, Snohomish County Geographic Information Systems (GIS) data, and various orthophotographic resources (Appendix B). Appendix A contains further details for the methods and tools used to prepare this report.

Wetland boundaries were determined using the routine approach described 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* (USDA, 2018). Qualified wetland scientists marked boundaries of the onsite wetland with orange surveyor's flagging labeled alpha-numerically and tied to 3-foot lath or vegetation along the wetland boundary. 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-8). Additional tests pits were excavated at regular intervals inside and outside of the wetland boundary to further confirm the delineation.

Wetlands were classified using both the hydrogeomorphic (Brinson, 1993) and Cowardin (Cowardin, 1979; Federal Geographic Data Committee, 2013) classification systems. Following classification and assessment, all wetlands were rated and categorized using the *Washington State Wetlands Rating System for Western Washington – Washington State Department of Ecology* (WSDOE) *Publication No. 14-06-029, published October 2014* (Hruby, 2014) and guidelines established in MCMC 18.06.910.C.

The fish and wildlife habitat assessment was conducted during the same site visit by qualified fish and wildlife biologists. The experienced biologists made visual observations using stationary and walking survey methods for both aquatic and upland habitats noting any special habitat features or signs of fish and wildlife activity.

Chapter 4. Existing Conditions

4.1 Landscape Setting

The 3.23-acre subject property is located in an urban residential/commercial setting in the City of Mill Creek, Washington and is currently developed with two single-family residences and associated infrastructure (Figure 2). The subject property is bounded by 132nd Street Southeast to the north; single-family residences to the west and south; and a commercial facility and single-family residences to the east. Topography on the subject property is relatively flat between approximate elevations of 480 to 485 feet above mean sea level (Appendix B3). The site is located within the Snohomish watershed, or Water Resource Inventory Area (WRIA) 8.

Figure 2. Aerial View of Subject Property.

4.2 Soils

The NRCS soil survey of Snohomish County identified one soil series on the subject property: Alderwood urban land complex, 2 to 8 percent slopes (5). A soil map is provided in Appendix B4. Below is a description of the soil profiles:

Alderwood urban land complex, 2 to 8 percent slopes (5)
According to the survey, Alderwood urban land complex, 2 to 8 percent slopes, is about 60 percent Alderwood gravelly sandy loam and about 25 percent urban land. Alderwood soil is moderately deep

over a hardpan and is a moderately well drained soil. It formed in glacial till. In a typical profile, the surface layer is dark greyish brown gravelly sandy loam to a depth of about 7 inches. The subsoil is dark yellowish brown and dark brown very gravelly sandy loam to a depth of 30 inches. The lower portion of this layer is an olive brown very gravelly sandy loam about 5 inches thick. Depth to the hardpan varies from 20 to 40 inches. Permeability of the Alderwood soil is moderately rapid above the hardpan and very slow through the hardpan. Alderwood urban land complex, 2 to 8 percent slopes, is considered non-hydric.

4.3 Vegetation

Upland vegetation on the southern portion of the subject property is dominated by a mixed deciduous/coniferous forest comprised of Douglas fir (*Pseudotsuga menziesii*) and Red alder (*Alnus rubra*) with an understory of non-native invasive Himalayan blackberry (*Rubus armeniacus*) and trailing blackberry (*Rubus ursinus*). The northern portion of the site transitions to a deciduous forest community dominated by red alder with an understory of hardhack (*Spiraea douglasii*), non-native invasive Himalayan blackberry, trailing blackberry and areas of non-native invasive reed canarygrass (*Phalaris arundinacea*). In addition, vegetation in the area to the south of 132nd Street Southeast is dominated by grasses and forbs typical of disturbed upland areas.

4.4 Stream and Wetland Inventories

The USFWS NWI map (Appendix B1) and Snohomish County critical areas inventory (Attachment B2) identify a potential wetland located in the northwest portion of the subject property. The Snohomish County critical areas inventory also identifies a wetland extending from the center to the northeast portion of the subject property and extending offsite to the east. The DNR stream typing map (Appendix B5) does not identify any streams within 300 feet of the subject property. The FEMA Flood Insurance Rate Map (FIRM) (Appendix B8) does not identify any flood zones within 300 feet of the subject property. No other wetlands or streams are documented on or within 300 feet of the subject property.

4.5 Priority Habitats and Species

The WDFW PHS map (Appendix B7) identifies the same wetland feature as the USFWS NWI map as well as potential little brown bat (*Myotis lucifugus*) communal roost presence within the greater township, but not necessarily on the subject property. The WDFW SalmonScape map (Appendix B6) does not identify any salmonid presence in the vicinity of the subject property. No other priority habitats or species are documented on or within 300 feet of the subject property.

4.6 Precipitation

Precipitation data was acquired from the National Oceanic and Atmospheric Administration (NOAA) weather station at the Seattle-Tacoma International Airport in order to obtain 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 Prior (Observed/ Normal)	Year to Date[2] (Observed/Normal)	Percent of Normal[3]
06/06/18	0.00	0.00	0.01	0.01	0.12/1.92	18.54/17.52	6/106
09/05/18	0.00	0.00	0.00	0.12	0.17/0.99	19.41/20.79	17/93

Notes:
1. Precipitation levels provided in inches. Data obtained from the NOAA (http://w2.weather.gov/climate/xmacis.php?wfo=sew) for SeaTac Airport.
2. Year-to-date is for the calendar year from January 1st to the date of the site visits.
3. Percent of normal is shown for the prior 30 days and calendar year to date.

Precipitation levels during the June and September 2018 site visits were well below the statistical normal for the prior 30 days (6 and 17 percent of normal), which is typical for the time of year the site investigation was conducted. Precipitation levels were within the normal range for the 2018 calendar year (106 and 93 percent of normal). Such conditions were considered in making professional wetland boundary determinations.

4.7 Prior Documentation

In 1997, Snohomish County (County) approved a critical areas site plan (CASP) for a grading violation with the previous owner of the subject property, which identifies a Native Growth Protection Area (NGPA) on the northeast portion of the site in the general area of a potential wetland (Snohomish County, 1997b) (Appendix I). SVC also obtained a copy of a Critical Areas Study (CAS) and Best Management Practices Mitigation from the County; the study describes two wetlands that reportedly previously existed in the north and east-central portions of the subject property (Snohomish County, 1997a) (Appendix I). The 1997 CAS does not appear to be based on an actual delineation (no wetland flags or data plots are indicated), and SVC is unable to determine the methodology on how the wetland areas in the CAS were determined. The CAS is greater than 20 years old and generally inconsistent with current site conditions. It is important to note that the 1997 study would have utilized outdated wetland delineation methods (Environmental Laboratory, 1987; WSDOE, 1997) which in many instances yielded positive soil indicators that would not meet technical hydric soil criteria under current wetland delineation methodology (USACE, 2010). Nonetheless, these areas were designated as former "Category 3 Wetlands" under the past Snohomish County Code. As mitigation for the grading violation, a 3,850-square-foot NGPA was established in the northeastern corner of the subject property. Grading within the potential wetland area was not required to be restored; the establishment of the NGPA appears to be the only mitigation requirement for the violation. The prior-established NGPA is mapped on the Existing Conditions Map in Appendix D.

Chapter 5. Results

The site investigations in Spring and Summer of 2018 identified one wetland on the subject property (Wetland A). No other potentially regulated wetlands, waterbodies, fish and wildlife habitat, or priority species were identified on or within 300 feet of the subject property.

5.1 Wetlands

5.1.1 Overview

One wetland (Wetland A) was identified on the subject property. The identified onsite wetland contained indicators of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation according to current wetland delineation methodology. SVC conducted a supplementary site investigation with the City's third-party reviewer on May 14, 2019. During the site investigation, SVC agreed in collaboration with the City's reviewer to expand the boundary of Wetland A to include a small area to the south of the wetland in an area of fill that were observed to have hydrology during the early growing season by the reviewer. Wetland flag A2 was moved approximately 10 feet south and 2 feet east, and wetland flag A2A was added approximately 3 feet south and 2 feet west of original wetland flag A2. The revised wetland boundary is included in the updated site map (Appendix D). The data forms are provided in Appendix F; wetland rating forms are provided in Appendix G; and wetland rating maps are provided in Appendix H, respectively. Table 2 summarizes the wetland identified onsite during the site investigations.

Table 2. Wetlands on the Subject Property

Wetland	Predominant Wetland Classification / Rating				Wetland Size Onsite	Buffer Width (feet)[5]
	Cowardin[1]	HGM[2]	WSDOE[3]	Mill Creek [4]		
A	PSSB	Depressional	IV	IV	3,140 SF	50

Notes:
1. Cowardin et al. (1979) or NWI Class based on vegetation: PSS = Palustrine Scrub-Shrub; Modifiers for water regime: B = Seasonally Saturated.
2. Brinson, M. M. (1993).
3. Current WSDOE wetland rating system for Western Washington (Hruby, 2014).
4. MCMC 18.06.910.C wetland definitions.
5. MCMC 18.06.930.B wetland buffer standards.

Wetland A

Wetland A is approximately 3,140 square feet (0.07 acre) in size onsite and is located in the northeastern portion of the subject property, extending offsite to the east. Hydrology for Wetland A is provided by surface sheet flow from adjacent uplands, direct precipitation, and a seasonally high groundwater table. Wetland vegetation is dominated by redosier dogwood (*Cornus alba*) and hardhack. Wetland A is a Palustrine Scrub-Shrub, Seasonally Saturated wetland (PSSB). Per MCMC 18.06.910.C, Wetland A is a Category IV depressional wetland. Table 3 summarizes Wetland A.

Table 3. Wetland A Summary

WETLAND A – INFORMATION SUMMARY	
Location:	Wetland A is located on the northeastern portion of subject property, extending offsite to the east.

Local Jurisdiction	Mill Creek
WRIA	8 – Cedar/Sammamish
WSDOE Rating (Hruby, 2014)	IV
Mill Creek Rating	IV
Mill Creek Buffer Width	50
Wetland Size	3,140 SF onsite
Cowardin Classification	PSSB
HGM Classification	Depressional
Wetland Data Sheet(s)	DP-5
Upland Data Sheet (s)	DP-4
Boundary Flag color	Orange

Dominant Vegetation	Wetland vegetation is dominated by redosier dogwood and hardhack.
Soils	Hydric soil indicator F3 (Depleted Matrix) was observed.
Hydrology	Hydrology for Wetland A is provided by a seasonally high groundwater table, direct precipitation, and surface sheet flow from adjacent uplands.
Rationale for Delineation	Wetland boundaries were determined by topographic drop and a transition to a hydrophytic plant community.
Rationale for Local Rating	Local rating is based upon WSDOE's current rating system per MCMC 18.06.910.C.
Wetland Functions Summary	
Water Quality	Wetland A has a moderate potential to improve water quality functions with the minimal presence of persistent ungrazed plants that retain sediments and pollutants and the proximity to land uses that generate excess pollutants. Wetland A's score for Water Quality Functions using the 2014 method is moderate (5).
Hydrologic	Wetland A provides low hydrologic function due to the presence of a permanently flowing outlet and lack of seasonal ponding. Wetland A's score for Hydrologic Functions using the 2014 method is moderate (5).
Habitat	Wetland A has low habitat value due to the single Cowardin classification and interspersion as well as a single hydroperiod. Wetland A has limited species richness and lacks priority habitats. Wetland A's score for Habitat Functions using the 2014 method is low (3).
Buffer Condition	The buffer surrounding Wetland A is degraded due to the adjacent roadway (132nd Street Southeast) and presence of non-native invasive species including Himalayan blackberry and reed canarygrass.

5.1.2 Wetland Buffer

Wetland A is considered a Category IV wetland with an associated 50-foot buffer based on the proposed high-intensity land use per MCMC 18.06.930.B. An additional 10-foot building setback is required from the edge of the wetland buffer per MCMC 18.06.840.A.

5.2 Artificially Excavated Ditch

A linear, artificially excavated ditch was identified in a north-south orientation on the north-central portion of the subject property where parcel numbers -0800 and -1000 meet. The ditch is approximately 150-200 feet long and enters a concrete catch basin/box structure onsite, where it enters the City's stormwater system as depicted on the Drainage Exhibit in Appendix E. The drainage ditch was artificially excavated, does not meet wetland or stream criteria, and is likely a non-regulated feature as discussed in the following sections.

5.1.1 Discussion of Drainage Ditch History

SVC conducted a supplementary site inspection with ESA on May 14, 2019 to review the existing site conditions and historical land use of the subject property and surrounding area. The findings in this report were discussed with ESA during this site inspection; however, additional research was completed by SVC following the May 2019 site investigation.

The onsite ditch was intentionally created from uplands for the purpose of conveying stormwater from the onsite residences to a County roadside ditch, which has since been filled and piped. Discussions with the landowner and review of historic aerial imagery corroborates the findings that the identified non-wetland ditch was intentionally and artificially excavated from uplands. The ditch is located on the common line between Snohomish County parcel numbers -0800 and -1000 (Attachment D), which were originally owned by Tom Clemans (Homeowner). According to correspondence with the Homeowner on April 30,2019 (Clemans, 2019), the subject property (that eventually became 2318 132nd Street Southeast) was purchased by his grandfather, Russell Shaver, around 1959. At that time the four adjacent lots, one of which he purchased, were strawberry fields. During construction of the residences around 1960, the Homeowner's grandfather installed a 4-inch diameter concrete drainage pipe from the house crawlspace to a drainage ditch adjacent to the roadway (132nd Street Southeast) to prevent flooding in the crawlspace of the residence. The drainage ditch adjacent to the road at that time was approximately 4 feet lower than the County road. There was no hydrology or issues with water collecting in the area prior to when the Homeowner installed the drainage pipe, and the area was dry except during the winter where minor surface water drained to the northwest onto a neighboring lot. Around this same time the adjacent landowner raised his driveway which subsequently caused flooding issues on the Homeowner's property. At that time (around 1964) the Homeowner's grandfather discovered the drainage pipe was plugged, so he hand-dug a ditch the length of the pipe along the eastern boundary of his lot to the roadside ditch, to alleviate flooding issues in the crawlspace. An additional concrete pipe was installed on the property in 1965 at the request of the County which connected to the existing drainage pipes from the house crawlspace to a portion of the drainage ditch.

In the early 1990s, 132nd Street Southeast was improved from a two lane County road, to a five lane highway with additional bicycle lanes and sidewalks. During that time the County raised the road surface and associated drainage ditch by approximately 3 feet. The existing driveway originally sloped down approximately 1 foot to the drainage ditch along the street; however, following road construction and road improvements, the street surface was raised approximately 2 feet higher than the driveway. In addition, the existing roadside ditch was filled and a stormwater pipe was installed approximately 4 feet higher than the original ditch bottom. This action has caused flooding issues on the property as the site no longer drained properly. The Homeowner consistently maintain the drainage ditch and resorted to using a sump-pump system for several years to alleviate flooding issues. However, due to vandalism and theft of the pump, the Homeowner has not maintained the pump or

the drainage ditch for several years. In addition, the development to the west (Crestview Village I) had to be raised several feet in elevation to allow the site to drain into the County stormwater system, which confirms the Homeowners statement regarding the roadside stormwater pipe being elevated in comparison to the former roadside ditch.

A review of historic aerial imagery further documents the historical land use activities. The 1952 historic aerial photograph (Appendix C1) clearly shows the subject property and surrounding areas to the west as open fields with no signs of saturation or inundation that would imply the presence of a potential wetland in the drainage ditch area prior to its intentional excavation. Following the excavation of the drainage ditch in the mid-1960s, this linear artificial drainage ditch is apparent in the July 1990 Google Earth aerial photograph and 1998 King County iMap aerial photograph (Appendices C2 and C3) but is obscured by vegetation. The drainage ditch is then readily apparent in the 2000 King County iMap aerial photograph (Appendix C4), March 2005 and July 2005 Google Earth aerial photographs (Appendices C6 and C7), 2009 King County iMap aerial photograph (Appendix C9), and the May 2010 Google Earth aerial photograph (Appendix C10) with a few years of vegetation overgrowth in the 2002 King County iMap aerial photograph (Appendix C5) and the November 2007 Google Earth aerial photograph (Appendix C8). This orthophoto timeline demonstrates the continued maintenance of the drainage ditch over a period of 10 years. The drainage ditch is still somewhat visible in the August 2011 Google Earth aerial photograph (Appendix C11), 2012 King County iMap aerial photograph (Appendix C12), May 2013 Google Earth aerial photograph (Appendix C13), 2015 and 2017 King County iMap aerial photographs (Appendices C14 and C15), and May 2018 Google Earth aerial photograph (Appendix C16), but has not been maintained for several consistent years due to the overgrown vegetation, which corresponds with the Homeowner's statement. In addition, in review of this historic aerial imagery, the area surrounding the ditch is observed to be clearly upland which correspondence with SVC's data plots. The former residence in the northwestern portion of the parcel (formerly demolished), as well as surrounding infrastructure and improvements further demonstrates this area to be upland. Additional evidence that the drainage ditch was created in an upland area is the fact that the soil series mapped on the entire subject property and vicinity is Alderwood-Urban land complex, 2 to 8 percent slopes, which is considered a non-hydric soil (NRCS, 2005).

SVC performed a review of installed stormwater and drainage infrastructure as documented by the County. The onsite drainage ditch is artificial in nature as the entire system is recognized as stormwater infrastructure by Snohomish County's Drainage Inventory GIS web map (SVC's drainage exhibit provided in Appendix E). Photographs of the various piping and artificial nature of the drainage ditch are provided in Appendix J.

5.1.2 Discussion of Non-Wetland Conditions

The drainage ditch is an intentionally and artificially excavated ditch from uplands, and the area surrounding the ditch does not meet wetland criteria. None of the six data plots in the area surrounding the ditch (DP-1 to DP-4, DP-7 to DP-8) met for more than one of the three required wetland criteria (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) during the original site investigations on June 6, 2018 or September 5, 2018 at a time when precipitation levels were within the normal range for the 2018 calendar year (refer to Chapter 4, Section 4.6). No indicators for the presence of hydrology, including surface water, groundwater table, or saturation, were observed within any of the data plots to the maximum depth explored of 16 inches below ground surface. Five of these data plots did meet the technical hydrophytic vegetation criteria largely due to a dominance of typical Facultative-Wetland (FACW) field species such as hardhack and non-native invasive reed

canarygrass, both highly aggressive species common to many disturbed upland areas. The soils onsite generally consist of a sandy loam both with and without gravel and some redox concentrations. None of the six data plots collected in this area met hydric soil criteria; the soils were either too bright to be depleted (DP-1, DP-2, DP-4, DP-7, and DP-8) to meet for hydric soil indicators A11 (Depleted Below Dark Surface) or F3 (Depleted Matrix), or lacked the redox concentrations required (DP-3) to meet for hydric soil indicator F6 (Redox Dark Surface). However, data plots DP-3 and DP-4 encountered inverted and unconsolidated soil profiles with compacted fill material at 8 inches below ground surface, indicating prior soil disturbance in this area. Data plots DP-7 and DP-8 also exhibited highly disturbed soil profiles likely associated with the prior excavation of the identified drainage ditch. SVC excavated several additional test pits in areas surrounding the artificially excavated trench which all showed similar signs of disturbance and did not exhibit any indicators for hydric soils.

Following the initial onsite investigation in the very beginning of the growing season on March 25, 2019 by the City's reviewer, SVC conducted two supplementary site investigations to observe site conditions within the growing season on April 12, 2019, May 2, 2019 and May 14, 2019 with the third-party reviewer. The City's reviewer observed potential hydric soils during their initial site visit. However, several test plots were excavated surrounding the drainage ditch at the later site visits specifically to analyze soil and hydrologic conditions over a period of time under variable climatic conditions. Similar to SVC's original findings, no data plot met all three wetland criteria according to current wetland delineation methodology. None of the additional test plots in the area surrounding the ditch met hydric soil criteria as the soils were either too bright or lacked the required redox concentrations.

Primary indicators of wetland hydrology (surface water and saturation and/or water table within 12 inches of the soil surface) were observed in some areas within and surrounding the drainage ditch during the City reviewer's initial onsite investigation on March 25, 2019. The timing of the site visit by the third-party reviewer at the very end of the wet season and very beginning of the growing season, in conjunction with the historical land use and nature of the ditch likely influenced the observed areas of hydrology during the March site visit. SVC did observe minor areas of inundation in the ditch during the early April site visit; however, it should be noted that precipitation levels in the Puget Sound area were above statistical normal for the prior week leading up to SVC's additional site visit on April 12, 2019 (2.57 inches of precipitation; 329 percent of normal), and over 1 inch of total precipitation was observed that day and the prior day. With the exceedingly high precipitation levels recorded, this data indicates that the site likely would not have primary indicators of hydrology at this time of year under normal hydrologic conditions. During the site visit on May 2, 2019 well within the growing season, no primary indicators of hydrology were observed to a depth of approximately 18 inches below ground surface in the areas of concern surrounding the drainage ditch or in the ditch during a time of above-average precipitation levels for the 2018/2019 water year (129 percent of normal). As such, it appears that the site holds minor surface water during the wet season, which dries up relatively quickly during the growing season under normal hydrologic conditions. This indicates that the site likely would not maintain hydrology for a period of 14 consecutive days within the growing season at least 5 out of 10 years (USACE, 2010). Additionally, secondary, or indirect indicators of wetland hydrology should not be solely relied upon during the wet season or throughout the beginning months of the growing season when primary indicators would clearly be present. As such, the areas surrounding the drainage ditch likely do not meet wetland hydrology criteria. It should be noted that over 20 inches of snowfall was recorded in February 2019 and almost an inch of snowfall was recorded in early March 2019, prior to the site investigation by the reviewer. Precipitation in the form of snowfall can influence

hydrology for a prolonged period of time after the precipitation was recorded, which can show areas of inundation which would not normally be inundated.

Table 4. Additional Precipitation Summary[1]

Site Visit Date	Day Of	Day Before	1 Week Prior	2 Weeks Prior	30 Days Prior (Observed/Normal)	Year to Date (Observed/Normal)[3]	Percent of Normal[4]
3/25/2019[2]	0.16	0.00	0.17	0.94	1.39/3.79	25.06/27.53	37/91
4/12/2019	0.65	0.40	2.57	2.66	3.36/3.57	27.76/29.41	94/94
5/2/2019	0.00	0.00	0.14	0.56	3.53/2.73	28.63/31.03	129/92

1. Precipitation levels provided in inches. Data obtained from NOAA (http://w2.weather.gov/climate/xmacis.php?wfo=sew) for Sea-Tac Airport.
2. This site visit was conducted by the third-part reviewer.
3. Year-to-date precipitation is for the water year (beginning October 1) to the onsite date.
4. Percent of normal is shown for the 2019 water year to date.

In summary, the identified drainage ditch was intentionally and artificially excavated from uplands and does not meet wetland criteria. With the additional review of soil and hydrology conditions onsite with the City's reviewer and the preponderance of evidence regarding the artificial nature of the drainage ditch, the onsite ditch and area adjacent should not be considered a regulated critical area. Per MCMC 18.06.210, *wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscaping amenities*. As such, this artificial drainage ditch should not be considered a regulated critical area, and should therefore be exempt from any protective buffer.

Chapter 6. Regulatory Considerations and Buffer Averaging Plan

The proposed project attempts to strike a balance between achieving the project needs and protection of wetland functions within the confines of the site. The proposed wetland buffer averaging is minor and has been designed to best meet the standards set forth in MCMC 18.06.930.C. In addition, the proposed project is located entirely outside of Wetland A. The following discussion addresses the applicable regulatory considerations to fulfill the regulatory requirements regarding the indirect wetland impact.

6.1 City of Mill Creek Requirements

6.1.1 Buffer Standards

MCMC has adopted the current wetland rating system used by WSDOE. Category IV wetlands generally provide low levels of function; they are typically more disturbed, smaller, and/or more isolated in the landscape than Category I, II, or III wetlands. Category IV wetlands provide low levels of functions and score less than 16 out of 27 points on the *Revised Washington State Wetland Rating System for Western Washington* (Hruby, 2014).

Wetland A is considered a Category IV depressional wetland with an associated 50-foot buffer based on the proposed high-intensity land use per MCMC 18.06.930.B. An additional 10-foot building setback is required from the edge of the wetland buffer per MCMC 18.06.840.A. The proposed project has been carefully designed to avoid impacts to Wetland A and associated buffer to the greatest extent feasible, and the proposed frontage improvements will remain within the existing road prism; however, buffer averaging is proposed as allowed under MCMC 18.06.930.C in order to maintain reasonable site development and to accommodate the required stormwater infrastructure (Appendix D). As the identified wetland is already indirectly impacted from the adjacent roadway and the addition of stormwater infrastructure will improve water quality functions onsite, no net loss in ecological function will occur from the proposed buffer averaging. Per MCMC 18.06.930.B the standard buffer width presumes the existence of a relatively intact native vegetation community. The existing Wetland A buffer is dominated by non-native, invasive species and the Applicant proposes to enhance the buffer with native species to improve buffer functionality. The mitigation sequencing and buffer averaging plan in accordance with MCMC Chapter 18.06 is outlined in the following sections.

6.1.2 Mitigation Sequencing

Under MCMC 18.06.610.A, the applicant shall first demonstrate that all reasonable efforts have been taken to avoid or minimize impacts. The following discussion addresses specific actions taken to fulfill mitigation sequencing for this project.

1. *Avoiding an impact altogether by not taking a certain action or parts of actions;*

   The proposed project manages to completely avoid direct impacts to Wetland A; however, in order to provide the required stormwater infrastructure on a narrow site and match the existing access road, a small portion (641 square feet) of the buffer must be reduced and added to the wetland buffer on the west side of the wetland. As such, buffer averaging is necessary to

accommodate reasonable residential development and required stormwater improvement. The proposed impervious surfaces and other wet and dry utilities will avoid the modified buffer area and associated building setback area.

2. *Minimizing impacts by limiting the degree or magnitude of an action and its implementation;*

   Wetland buffer impacts have been minimized as the only proposed activity that will impact the standard buffer area is the required stormwater infrastructure. The required frontage improvements are anticipated to be accommodated within the existing road prism. All appropriate best management practices (BMPs) and temporary erosion and sediment control (TESC) measures, including construction fencing and silt fencing, will be implemented and maintained during construction on the site to minimize any potential temporary construction impacts to the identified wetland and buffer. A split-rail fence will also be placed between the residential development and averaged wetland buffer to minimize potential future disturbances such as unintended intrusion into the modified buffer area.

3. *Rectifying impacts by repairing, rehabilitating, or restoring the affected environment;*

   As the identified wetland is already indirectly impacted from the adjacent roadway (132nd Street Southeast) and the addition of stormwater infrastructure will improve water quality functions onsite, no net loss in ecological function will occur from the proposed buffer averaging. In addition, the buffer addition area is proposed between the access road and the wetland, which will better function and protect the wetland from the developed area.

4. *Reducing or eliminating an impact over time by preservation and maintenance operations during the life of the action;*

   The modified buffer area will be placed in a separate sensitive areas tract, separate from the prior-established NGPA area, on which development would be prohibited in perpetuity.

5. *Compensating for an impact by replacing or providing substitute resources or environments; and*

   The Applicant proposes enhancing the Wetland A buffer to provide a net gain in ecological functions and resource protection. The existing Wetland A buffer is degraded by dominating non-native, invasive species. The proposed enhancement actions will remove the non-native, invasive species and plant native species to improve buffer functions and pollutant filtration. Habitat conditions will be significantly improved through establishing diverse vertical and horizontal vegetation strata beneficial to wildlife, resulting in a lift to ecological function and protection.

6. *Monitoring the hazard or other required mitigation and taking remedial action when necessary.*

   A maintenance and monitoring plan for the proposed buffer enhancement area is presented in Section 7.7.

6.1.3 Proposed Buffer Averaging

To accommodate the Applicant's residential development objectives and required stormwater infrastructure, buffer averaging is proposed along the southern portion of Wetland A's buffer. Overall, 641 square feet of standard buffer area will be reduced along the northern extent of the

proposed stormwater improvements, which will be added along the southwest portion of the buffer adjacent to the proposed access road (Appendix D). No net loss in buffer area or function will occur from the proposed project; an increase in wetland protection and buffer function is anticipated due to the location of the additional buffer area. Averaging to allow reasonable use of a parcel may be permitted when all of the following criteria as outlined under MCMC 18.06.930.C are met:

1. *The total area contained in the buffer area after averaging is no less than that which would be contained within the standard buffer;*

   The total area of the buffer after averaging will be no less than the standard buffer area; only 641 square feet of buffer area will be relocated to accommodate the proposed stormwater improvements.

2. *The buffer averaging does not reduce the functions or values of the wetland;*

   No net loss in buffer area or function will occur from the proposed project; an increase in wetland protection and buffer function is anticipated due to the location of the additional buffer area, which is proposed to be located between the proposed development and the wetland.

3. *The portion of the buffer reduced through buffer averaging is less than 25 percent of the total buffer length on a project site;*

   The minimal portion of buffer reduced through buffer averaging will be less than 25 percent of the total buffer length onsite.

4. *The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation; and*

   The proposed buffer averaging will better protect Wetland A. The reduced buffer area will essentially still serves as buffer due to the location of the stormwater infrastructure. The increased buffer area is proposed between the development and the wetland, which will better protect the wetland. As such, the minor proposed buffer averaging will not degrade the functions of the wetland or buffer.

5. *The buffer width is not reduced to less than 50 percent of the standard width, except that no buffer dimension shall be less than 25 feet.*

   The minimal portion of buffer reduced through buffer averaging will at no point be reduced to less than 50 percent (25 feet) of the standard width.

6.2 State and Federal Considerations

Wetland A is located within 4,000 feet of Penny creek, a tributary of Sammamish River, and as such is potentially regulated under Section 404 of the Clean Water Act by the USACE. The WSDOE also regulates wetlands and natural surface waters under RCW 90.48. As there are no actions proposed to directly impact the onsite wetland, the proposed project will not require coordination with state or federal agencies.

Chapter 7. Buffer Averaging and Enhancement Plan

The following sections present the proposed buffer averaging and enhancement plan to ensure that the proposed project results in no net loss of wetland ecological function. The proposed buffer averaging and enhancement actions attempt to closely adhere to local Wetlands regulations specified in MCMC 18.06 and strike a balance between achieving project goals and creating a positive result for the watershed and critical area habitat functions within the confines of the site. The proposed project will result in approximately 641 square feet of impact to the Wetland A buffer that will be offset by buffer averaging. Approximately 9,800 square feet of wetland buffer enhancement will be provided to improve habitat and wetland protection functions onsite.

7.1 Purpose and Need

The purpose of the proposed project is to provide additional single-family residential opportunities within the City of Mill Creek to help alleviate the shortage of single-family residences within the greater Puget Sound region. The proposed project will provide 25 single-family residential lots located within with a mixed commercial and residential land use setting.

7.2 Description of Impacts

In order to maintain reasonable site development and accommodate the necessary stormwater infrastructure, buffer averaging is proposed for Wetland A. Approximately 487 square feet of buffer impact will be offset by 487 square feet of buffer addition through buffer averaging. No additional buffer impacts are proposed, and no activities are proposed that will directly impact the wetland.

7.3 Buffer Enhancement Strategy

The project has been designed to minimize impacts to critical areas to the greatest extent possible, and the proposed residential development will be located entirely outside of the Wetland A buffer. However, in order to maintain reasonable site development and accommodate the necessary stormwater infrastructure, buffer averaging is proposed. Buffer enhancement is proposed to further provide a net gain in ecological function for the wetland buffer. 9,800 square feet total of wetland buffer enhancement will be provided. Buffer enhancement actions will take place concurrently to project development and before any occupancy at the subject property.

The onsite wetland buffer is currently degraded by non-native, invasive plants, including Himalayan blackberry and reed canarygrass. Removing non-native, invasive vegetation and replacing with native plantings within the buffer will restore the habitat functions and critical area protection provided by the site and improve hydrology and quality of water leaving the project site. A diverse assortment of trees, shrubs, and groundcover will be established to provide browse, cover, and nesting for small mammals, which in turn provide prey for raptors and other mammals. The proposed enhancement plan will provide a net gain in function and improved protection to the wetland from the proposed development.

The proposed wetland buffer enhancement will include, but may not be limited to, the following recommendations:

- Enhance the onsite wetland buffer area as shown in Appendix C;
- Remove any trash and other debris within the wetland buffer enhancement area;
- Pre-treat invasive plants with a Washington Department of Agriculture approved herbicide for use near aquatic areas. After pre-treatment, grub to remove the invasive plants and replant all cleared areas with native trees, shrubs, and ground covers listed in Appendix C; pre-treatment of the invasive plants should occur a minimum of two weeks prior to removal;
- Replant all enhancement areas with native trees, shrubs, and groundcovers listed in Appendix C, or substitutes approved by the responsible Project Scientist, to help retain soils, filter stormwater, and increase biodiversity;
- An approved native seed mix will be used to seed the disturbed project and enhancement areas after planting;
- Maintain and control invasive plants annually, at a minimum, or more frequently if necessary. Maintenance to reduce the growth and spread of invasive plants is not restricted to chemical applications but may include hand removal, if warranted;
- Provide dry-season irrigation as necessary to ensure native plant survival;
- Direct exterior lights away from the wetlands wherever possible; and
- Place all activities that generate excessive noise (e.g., generators and air conditioning equipment) away from the wetlands where feasible.

7.4 Approach and Best Management Practices

The proposed enhancement plan is intended to provide increased wetland protection by maintenance or improvement of wetland buffer function. Impacts to the wetland buffers are being minimized through careful planning efforts and project design. Restoration of disturbed areas within the buffer should occur immediately after grading is complete. TESC measures will be implemented that consists of high-visibility fencing (HVF) installed around native vegetation along the modified perimeter of the buffer, silt fencing between the graded areas and undisturbed buffer, plastic sheeting on stockpiled materials, and seeding of disturbed soils. These TESC measures should be installed prior to the start of development or restoration actions and actively managed for the duration of the project.

All equipment staging and materials stockpiles should be kept out of the buffer, and the area will need to be kept free of spills and/or hazardous materials. All fill material and road surfacing should be sourced from upland areas onsite or from approved suppliers and will need to be free of pollutants and hazardous materials. Construction materials along with all construction waste and debris should be effectively managed and stockpiled on paved surfaces and kept free of the remaining wetland buffer area. Following completion of the development, the entire site should be cleaned and detail graded using hand tools wherever necessary, and TESC measures will need to be removed.

7.5 Goals, Objectives, and Performance Standards

The goals and objectives for the proposed buffer enhancement actions are based on providing additional habitat and protection for Wetland A and providing supplementary water quality and hydrological functions. The buffer enhancement actions are capable of improving habitat function for the wetland over time by establishment of a dense native vegetation barrier between the project and the critical areas. The goals and objectives of the enhancement actions are as follows:

Goal 1 – Improve and protect the wetland by enhancing approximately 9,800 square feet of Wetland A buffer area.

Objective 1 – Establish dense cover of native trees, shrubs, and grasses and forbs within the buffer to create diverse horizontal and vertical vegetation structure and improve wildlife habitat.

Performance Standard 1.1 – By the end of Year 5, the wetland buffer enhancement area will have at least 2 species of native trees, and 3 species of native shrubs; (native volunteer species can be included) present in all areas of the enhanced buffer. To be considered, the native species must make up at least five percent of the vegetation class.

Performance Standard 1.2 – Minimum plant survivorship will be at 100 percent of installed plants at the end of Year 1 (replacement of lost plants allowed), 85 percent at the end of Year 2, 80 percent at the end of Year 3, and 75 percent at the end of Year 5. Survivorship measurement will be based upon net stem density after year 1. Native recruits may be counted towards survivorship totals.

Performance Standard 1.3 – Minimum native woody species cover in the restoration area will be a minimum 30 percent total cover at the end of Year 3 and 50 percent at the end of Year 5.

Performance Standard 1.4 – Non-native invasive plants will not make up more than 20 percent total cover in any growing season during the monitoring period following Year 1.

7.6 Plant Materials and Installation for Enhancement Actions

7.6.1 Plant Materials

All plant materials to be used for enhancement actions will be nursery grown stock from a reputable, local source. Only native species are to be used; no hybrids or cultivars will be allowed. Plant material provided will be typical of their species or variety; if not cuttings they will exhibit normal, densely developed branches and vigorous, fibrous root systems. Plants will be sound, healthy, vigorous plants free from defects, and all forms of disease and infestation.

Container stock shall have been grown in its delivery container for not less than six months but not more than two years. Plants shall not exhibit rootbound conditions. Under no circumstances shall container stock be handled by their trunks, stems, or tops. Seed mixture used for hand or hydroseeding shall contain fresh, clean, and new crop seed mixed by an approved method. The mixture is specified in this plan set.

All plant material shall be inspected by the Wetland Scientist upon delivery. Plant material not conforming to the specifications below will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site.

Fertilizer will be in the form of Agroform plant tabs or an approved like form. Mulch will consist of sterile wheat straw or clean recycled wood chips approximately 1/2 inch to 1 inch in size and 1/2 inch

thick. If free of invasive plant species, the mulch material may be sourced from woody materials salvaged from the land clearing activities.

7.6.2 Plant Scheduling, Species, Size, and Spacing

Plant installation should occur as close to conclusion of clearing and grading activities as possible to limit erosion and limit the temporal loss of function provided by the wetland and buffer. All planting should occur between September 1 and May 1 to ensure plants do not dry out after installation, or temporary irrigation measures may be necessary. All planting will be installed according to the procedures detailed in the following subsections using the species and densities outlined in the buffer enhancement plan set.

7.6.3 Quality Control for Planting Plan

All plant material shall be inspected by the Wetland Scientist upon delivery. Plant material not conforming to the specifications above will be rejected and replaced by the planting contractor. Rejected plant materials shall be immediately removed from the site. Under no circumstances shall container stock be handled by their trunks, stems, or tops.

The landscape contractor shall provide the Wetland Scientist with documentation of plant material that includes the supplying nursery contact information, plant species, plant quantities, and plant sizes.

7.6.4 Product Handling, Delivery, and Storage

All seed and fertilizer should be delivered in original, unopened, and undamaged containers showing weight, analysis, and name of manufacturer. This material should be stored in a manner to prevent wetting and deterioration. All precautions customary in good trade practice shall be taken in preparing plants for moving. Workmanship that fails to meet industry standards will be rejected. Plants will be packed, transported, and handled with care to ensure protection against injury and from drying out. If plants cannot be planted immediately upon delivery they should be protected with soil, wet peat moss, or in a manner acceptable to the Wetland Scientist. Plants, fertilizer, and mulch not installed immediately upon delivery shall be secured on the site to prevent theft or tampering. No plant shall be bound with rope or wire in a manner that could damage or break the branches. Plants transported on open vehicles should be secured with a protective covering to prevent windburn.

7.6.5 Preparation and Installation of Plant Materials

The planting contractor shall verify the location of all elements of the mitigation plan with the Wetland Scientist prior to installation. The responsible Wetland Scientist reserves the right to adjust the locations of landscape elements during the installation period as appropriate. If obstructions are encountered that are not shown on the drawings, planting operations will cease until alternate plant locations have been selected by and/or approved by the Wetland Scientist.

Circular plant pits with vertical sides will be excavated for all container stock. The pits should be at least 12 inches in diameter, and the depth of the pit should accommodate the entire root system. The bottom of each pit will be scarified to a depth of 4 inches.

Broken roots should be pruned with a sharp instrument and rootballs should be thoroughly soaked prior to installation. Set plant material upright in the planting pit to proper grade and alignment. Water plants thoroughly midway through backfilling and add Agroform tablets. Water pits again upon completion of backfilling. No filling should occur around trunks or stems. Do not use frozen or

muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water and install a 4- to 6-inch layer of mulch around the base of each container plant.

7.6.6 Temporary Irrigation Specifications

While the native species selected for mitigation are hardy and typically thrive in northwest conditions and the proposed actions are planned in areas with sufficient hydroperiods for the species selected, some individual plants might perish due to dry conditions. Therefore, irrigation or regular watering may be provided as necessary for the duration of the first two growing seasons while the native plantings become established.

7.7 Maintenance & Monitoring Plan

Maintenance and Monitoring Plans are described below in accordance with MCMC 18.06.630. The Applicant is committed to compliance with the restoration plan and overall success of the project. As such, the Applicant will continue to maintain the project, keeping the site free from of non-native invasive vegetation, trash, and waste.

The wetland buffer enhancement plan will require continued monitoring and maintenance to ensure the actions are successful. Therefore, the project site will be monitored for a period of five years with formal inspections by a qualified Wetland Scientist. Monitoring events will be scheduled at the time of construction, 30 days after planting, early in the growing season and the end of the growing season for Year 1, twice during Year 2, and annually in Years 3 and 5. Closeout assessment will also be conducted in Year 5 to ensure the adequate enhancement area was established.

Monitoring will consist of percent cover measurements at permanent monitoring stations, walk-through surveys to identify invasive species presence and dead or dying restoration plantings, photographs taken at fixed photo points, wildlife observations, and general qualitative habitat and wetland function observations.

To determine percent cover, observed vegetation will be identified and recorded by species and an estimate of areal cover of dominant species within each sampling plots. Circular sample plots, approximately 30 feet in diameter (706 square feet), are centered at each monitoring station. The sample plots encompass the specified wetland areas and terminate at the observed wetland boundary. Trees and shrubs within each 30-foot diameter monitoring plot are then recorded to species and areal cover. Herbaceous vegetation is sampled from a 10-foot diameter (78.5 square feet) within each monitoring plot, established at the same location as the center of each tree and shrub sample plot. Herbaceous vegetation within each monitoring plot is then recorded to species and includes an estimate of percent areal cover. A list of observed tree, shrub, and herbaceous species including percent areal cover of each species and wetland status is included within the monitoring report.

7.8 Reporting

Following each monitoring event, a brief monitoring report detailing the current ecological status of the enhancement actions, measurement of performance standards, and management recommendations will be prepared and submitted to the City of Mill Creek by December 31st each year to ensure full compliance with the enhancement plan.

7.9 Contingency Plan

If monitoring results indicate that performance standards are not being met, it may be necessary to implement all or part of the contingency plan. Careful attention to maintenance is essential in ensuring that problems do not arise. Should any portion of the site fail to meet the success criteria, a contingency plan will be developed and implemented with regulatory approval. Such plans are adaptive and should be prepared on a case-by-case basis to reflect the failed enhancement characteristics. Contingency plans can include additional plant installation, erosion control, and plant substitutions including type, size, and location. The Contingency measures outlined below can also be utilized in perpetuity to maintain the wetland and buffers associated with the proposed project site.

Contingency/maintenance activities may include, but are not limited to:

- Replacing plants lost to vandalism, drought, or disease, as necessary;
- Replacing any plant species with a 20 percent or greater mortality rate after two growing seasons with the same species or native species of similar form and function;
- Irrigating the restoration areas only as necessary during dry weather if plants appear to be too dry, with a minimal quantity of water;
- Reseeding and/or repair of wetland and buffer areas as necessary if erosion or sedimentation occurs;
- Spot treat non-native invasive plant species; and

Removing all trash or undesirable debris from the wetland and buffer areas as necessary.

7.10 Performance Surety

Pursuant to MCMC 18.06.650, a performance surety (bond) in accordance with MCMC 18.06.650.B is required to assure that all actions approved under this Plan are satisfactorily and completed in accordance with the enhancement plan, performance standards, and regulatory conditions of approval. The required performance surety which shall be obtained in an amount equal to 125 percent of the total fair market cost of the construction/installation labor and material.

Chapter 8. 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 project 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 cannot 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 may require revision of the wetland delineation. In addition, changes in government codes, regulations, or laws may occur. Due of such changes, our observations and conclusions applicable to this site may need to be revised wholly or in part.

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Appendix A — Methods and Tools

Table A-1. Methods and Tools Used to Prepare the Report.

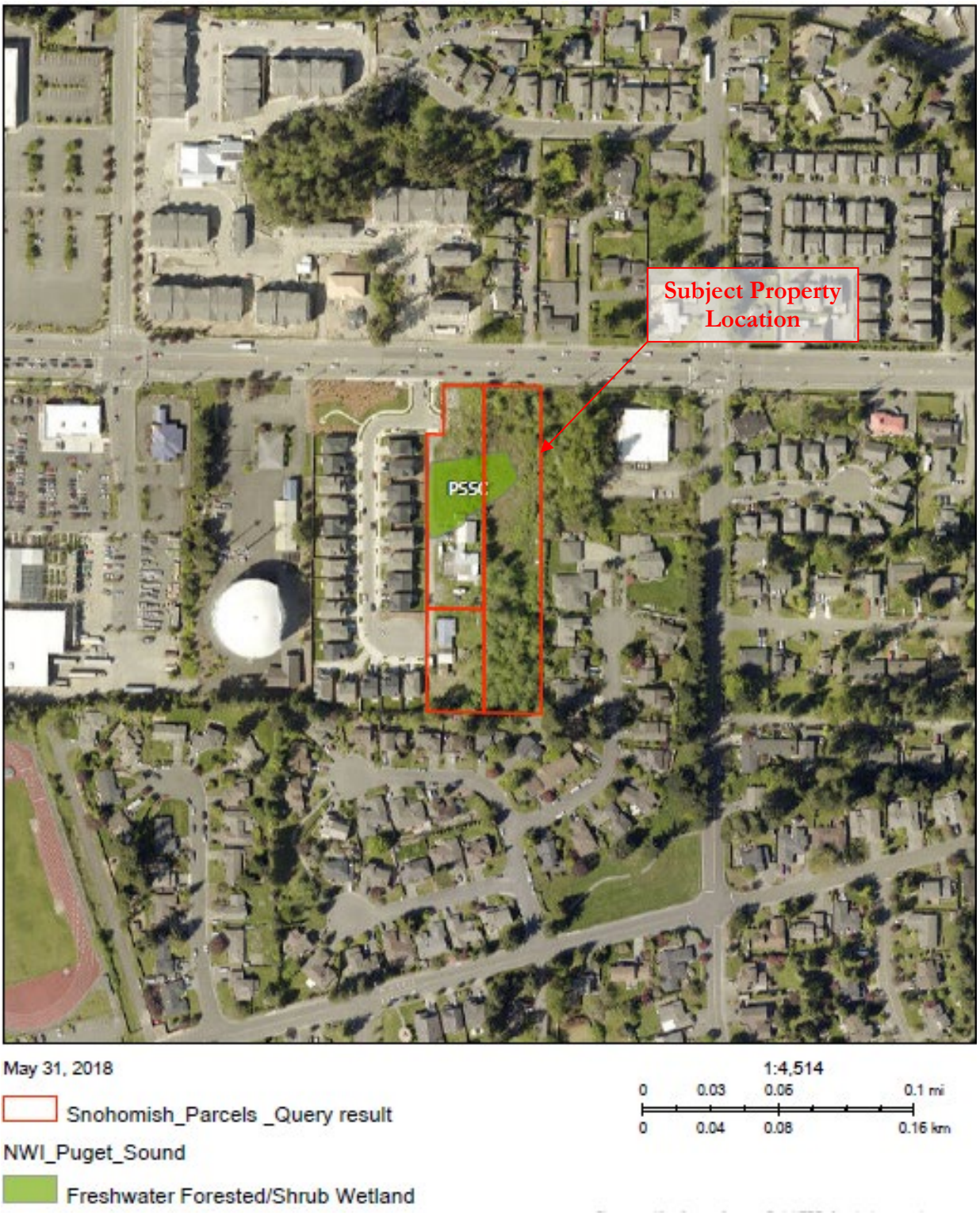
Parameter	Method or Tool	Website	Reference
Wetland Delineation	USACE 1987 Wetland Delineation Manual	http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf	**Environmental Laboratory.** 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region	http://www.usace.army.mil/cw/cecwo/reg/inte_aridwest_sup.pdf	U. S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Ver2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-3. Vicksburg, MSS: U.S. Army Engineer Research and Development Center.
Wetland Classification	USFWS / Cowardin Classification System	http://www.fws.gov/nwi/Pubs_Reports/Class_Manual/class_titlepg.htm https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013	**Cowardin**, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Government Printing Office, Washington, D.C. **Federal Geographic Data Committee**. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
	Hydrogeomorphic Classification (HGM) System	http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf	**Brinson**, M. M. 1993. "A hydrogeomorphic classification for wetlands," Technical Report WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
Wetland Rating	Washington State Wetland Rating System	https://fortress.wa.gov/ecy/publications/documents/1406029.pdf	**Hruby**. 2014. Washington State wetland rating system for western Washington: 2014 Update Publication # 14-06-029.
Wetland Indicator Status	2016 National Wetland Plant List	http://wetland_plants.usace.army.mil/	**Lichvar**, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
Plant Names	USDA Plant Database	http://plants.usda.gov/	Website
Soils Data	NRCS Soil Survey	http://websoilsurvey.nrcs.usda.gov/app/	Website GIS data based upon: **Natural Resources Conservation Service**, 1983. Soil Survey of Snohomish County Area, Washington. By Alfonso Debose, Washington State Department of Natural Resources.
	USDA/NRCS Field Indicators of Hydric Soils	https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053171.pdf	**United States Department of Agriculture, Natural Resources Conservation Service**. 2018. Field Indictors of Hydric Soils in the United States, Version 8.2. L.M. Vasialas, G.W.

Parameter	Method or Tool	Website	Reference
			Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
Threatened and Endangered Species	Washington Natural Heritage Program	http://www.dnr.wa.gov/NHPlists html	**Washington Natural Heritage Program**. Species Lists. Washington State Department of Natural Resources, Washington Natural Heritage Program, Olympia, WA
	Washington Priority Habitats and Species	http://wdfw.wa.gov/hab/phspage.htm	**Priority Habitats and Species (PHS) Program**. Map of priority habitats and species in project vicinity. Washington Department of Fish and Wildlife (WDFW).
	USFWS species lists by County	http://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=53035	Website
Species of Local Importance	WDFW GIS Data	http://wdfw.wa.gov/mapping/salmonscape/	Website
Report Preparation	Mill Creek Municipal Code	https://www.codepublishing.com/WA/MillCreek/#!/MillCreek18/MillCreek1806.html#18.06	MCMC Chapter 18.06 – Environmentally Critical Areas

Appendix B — Background Information

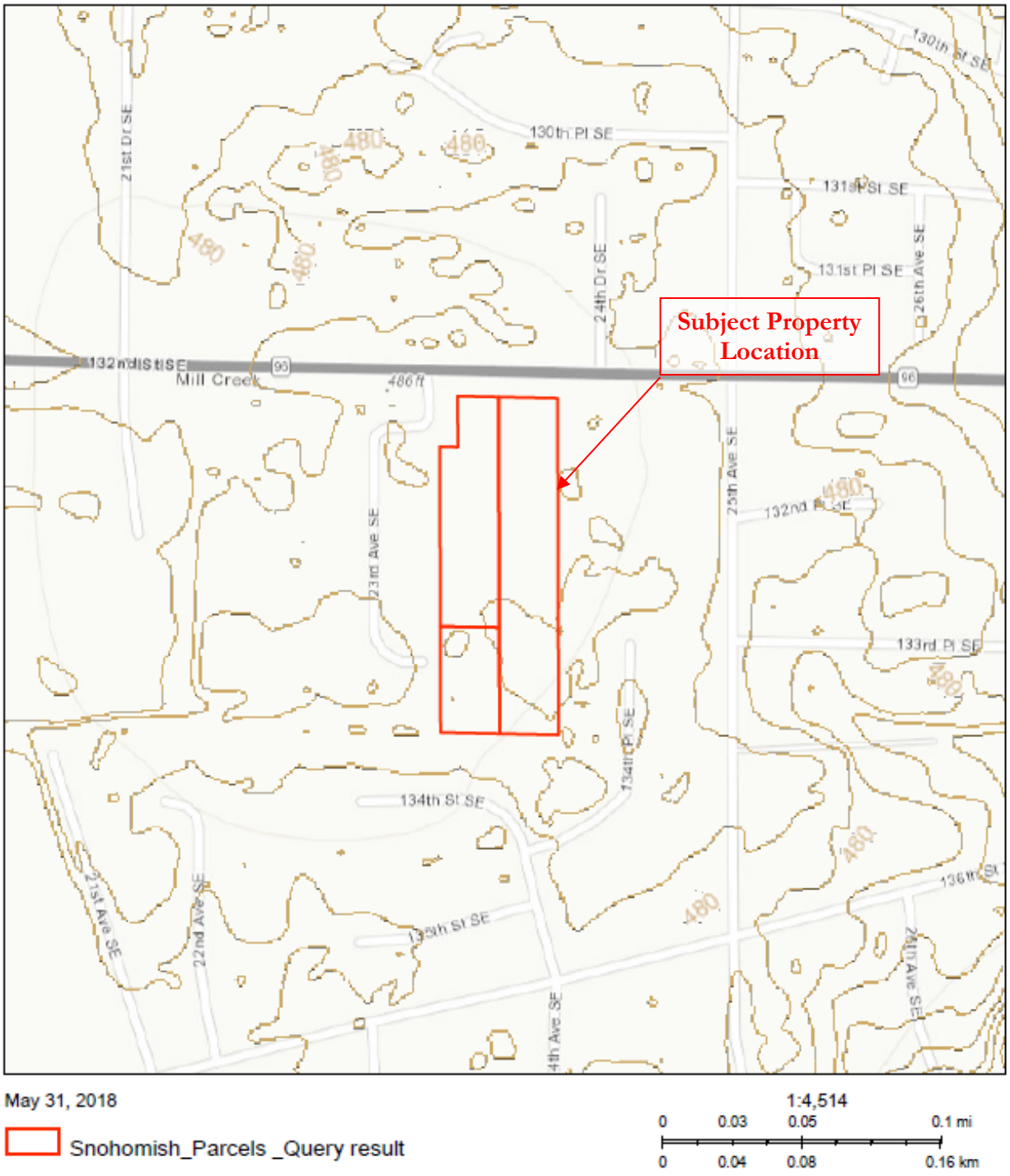
This appendix includes a USFWS NWI map (B1); Snohomish County Critical Areas inventory (B2); USGS Contours map (B3); NRCS soil survey map (B4); DNR Stream Typing map (B5); WDFW SalmonScape map (B6); WDFW PHS map (B7); and a FEMA Flood Hazard Areas Map (B8).

Appendix B1. USFWS NWI Map



Appendix B2. Snohomish County Critical Areas Inventory

Appendix B3. USGS Contours Map



Appendix B4. NRCS Soil Survey Map

Appendix B5. DNR Stream Typing Map

May 31, 2018

1:4,514

0 0.03 0.05 0.1 mi

0 0.04 0.08 0.16 km

Snohomish_Parcels _Query result

Streams

Type S

Type F

Type N, Np, Ns

U, unknown

X, non-typed per WAC 222-16

Appendix B6. WDFW SalmonScape Map

May 31, 2018

Snohomish_Parcels _Query result

1:4,514

0 0.03 0.05 0.1 mi

0 0.04 0.08 0.16 km

Appendix B7. WDFW PHS Map

Appendix B8. FEMA Flood Hazard Areas Map

May 31, 2018

1:4,514

0 0.03 0.05 0.1 mi

0 0.04 0.08 0.16 km

Snohomish_Parcels _Query result

0.2% Annual Chance Flood Hazard

Flood Hazard Zones

1% Annual Chance Flood Hazard

Regulatory Floodway

Special Floodway

Area of Undetermined Flood Hazard

Pictometry, King County, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

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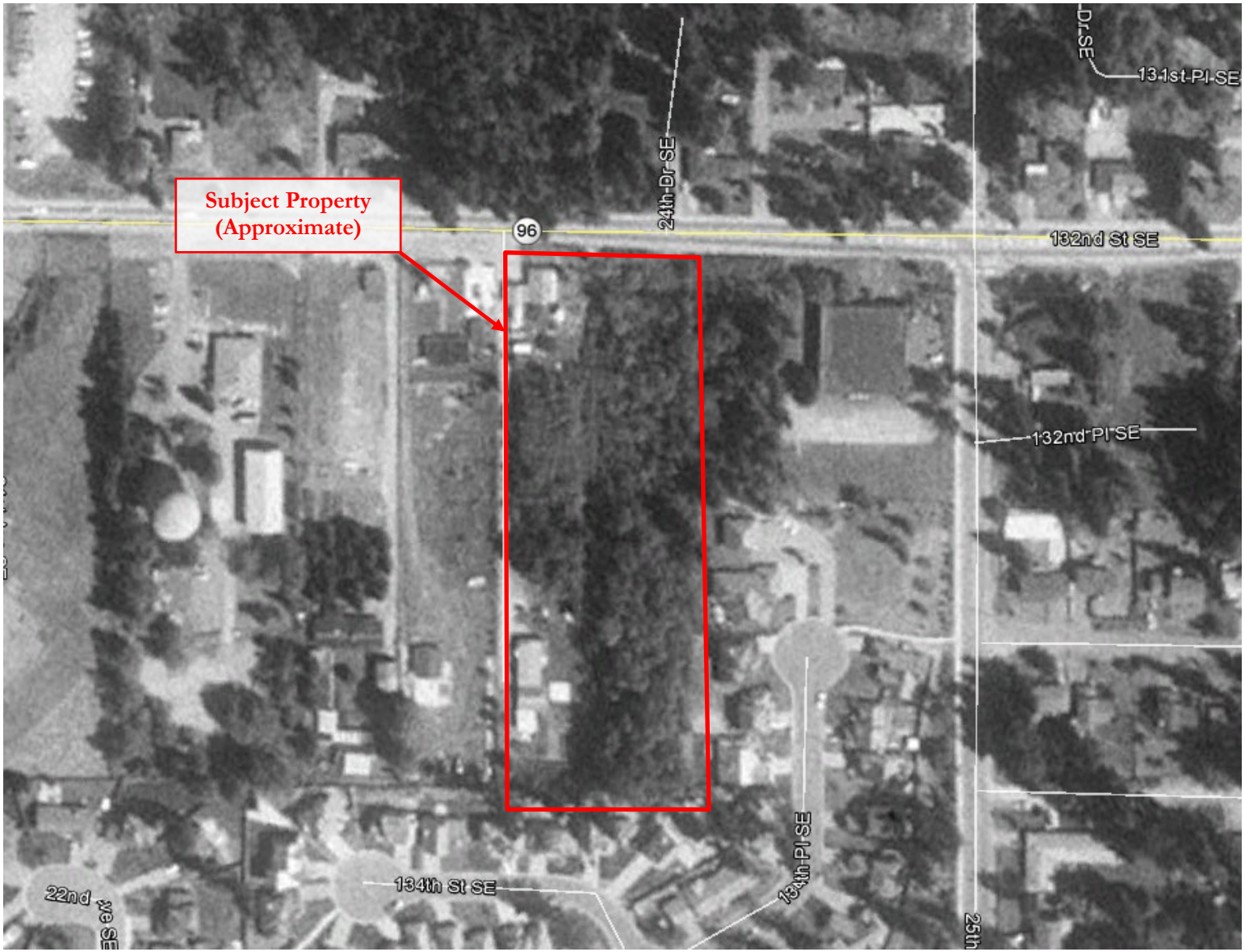
Appendix C — Orthophoto Timeline

This attachment includes a 1952 Historical Aerial Photograph (C1); Google Earth July 1990 Aerial Photograph (C2); King County iMap 1998 Aerial Photograph (C3); King County iMap 2000 Aerial Photograph (C4); King County iMap 2002 Aerial Photograph (C5); Google Earth March 2005 Aerial Photograph (C6); Google Earth July 2005 Aerial Photograph (C7); Google Earth November 2007 Aerial Photograph (C8); King County iMap 2009 Aerial Photograph (C9); Google Earth May 2010 Aerial Photograph (C10); Google Earth August 2011 Aerial Photograph (C11); King County iMap 2012 Aerial Photograph (C12); Google Earth May 2013 Aerial Photograph (C13); King County iMap 2015 Aerial Photograph (C14); King County iMap 2017 Aerial Photograph (C15); and Google Earth May 2018 Aerial Photograph (C16).

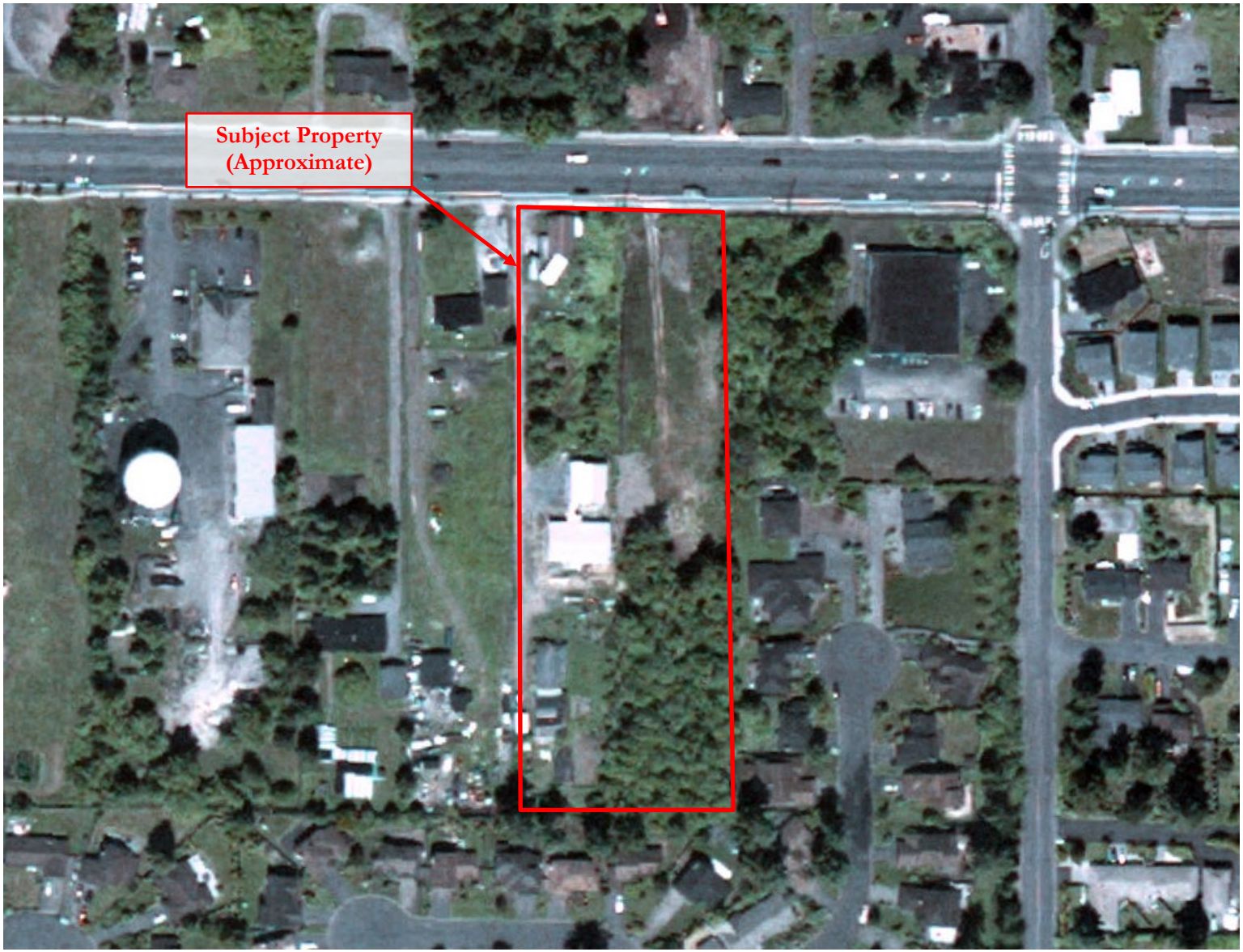
Attachment C1 – 1952 Historic Aerial Photograph

Attachment C2 – Google Earth July 1990 Aerial Photograph



Attachment C3 – King County iMap 1998 Aerial Photograph

Attachment C4 – King County iMap 2000 Aerial Photograph



Attachment C5 – King County iMap 2002 Aerial Photograph

Attachment C6 – Google Earth March 2005 Aerial Photograph

Attachment C7 – Google Earth July 2005 Aerial Photograph

Attachment C8 – Google Earth November 2007 Aerial Photograph

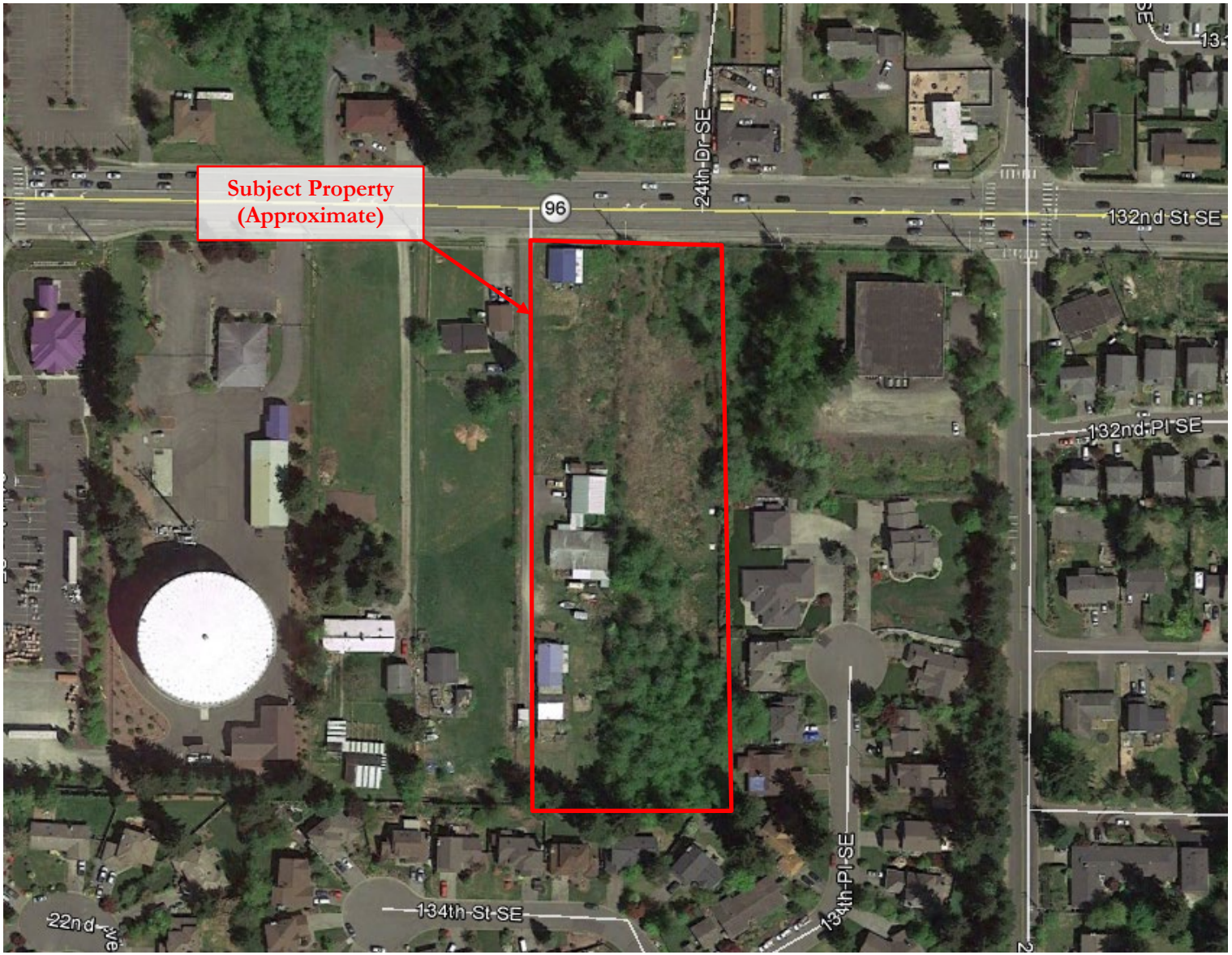
Attachment C9 – King County iMap 2009 Aerial Photograph

Attachment C10 – Google Earth May 2010 Aerial Photograph

Attachment C11 – Google Earth August 2011 Aerial Photograph

Attachment C12 – King County iMap 2012 Aerial Photograph

Attachment C13 – Google Earth May 2013 Aerial Photograph



Attachment C14 – King County iMap 2015 Aerial Photograph

Attachment C15 – King County iMap 2017 Aerial Photograph

Attachment C16 – Google Earth May 2018 Aerial Photograph

Appendix D — Existing Conditions and Proposed Maps

CRESTVIEW II - EXISTING CONDITIONS

PROPERTY BOUNDARY

EXISTING STRUCTURES

DP1U

DP2U

DP3U

DP4U

DP5W

DP6U

PROPERTY BOUNDARY

50' STANDARD WETLAND BUFFER

APPROX. EXISTING NGPA BOUNDARY

WETLAND A
CATEGORY IV
~2,995 SF (ON-SITE)

APPROXIMATE LOCATION OF POTENTIAL OFFSITE WETLAND

132nd STREET SE

0 30 60 120

GRAPHIC SCALE
1" = 60'

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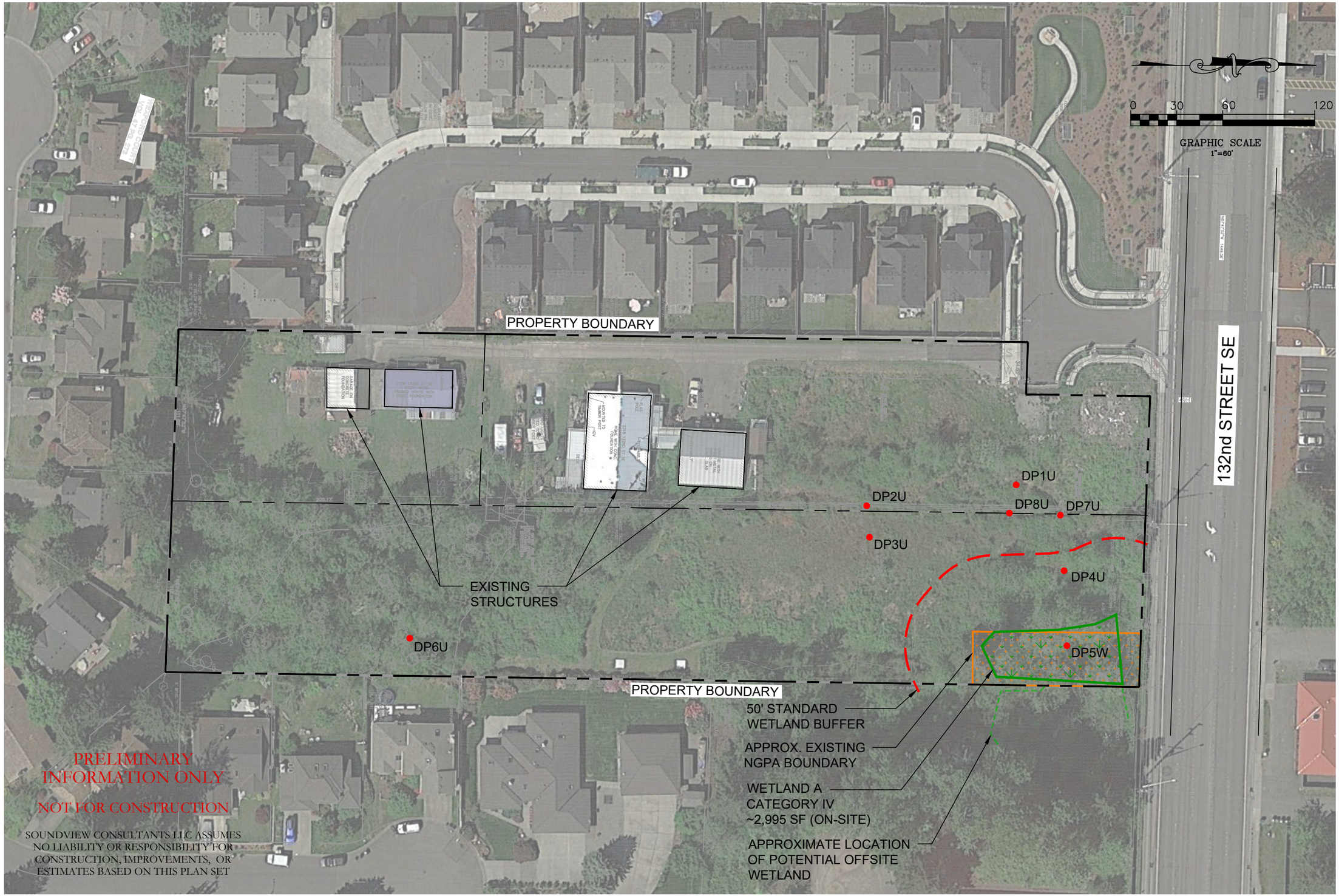
CRESTVIEW II
2318, 2316 132ND STREET SE
MILL CREEK, WASHINGTON 98012

THE NW ¼ OF SECTION 32, TOWNSHIP 28N, RANGE 05E, W.M.

DATE:	10/02/2019
JOB:	1752.0001
BY:	DS
SCALE:	SEE GRAPHIC
SHEET	1 OF 5

CRESTVIEW II - EXISTING CONDITIONS with AERIAL PHOTO



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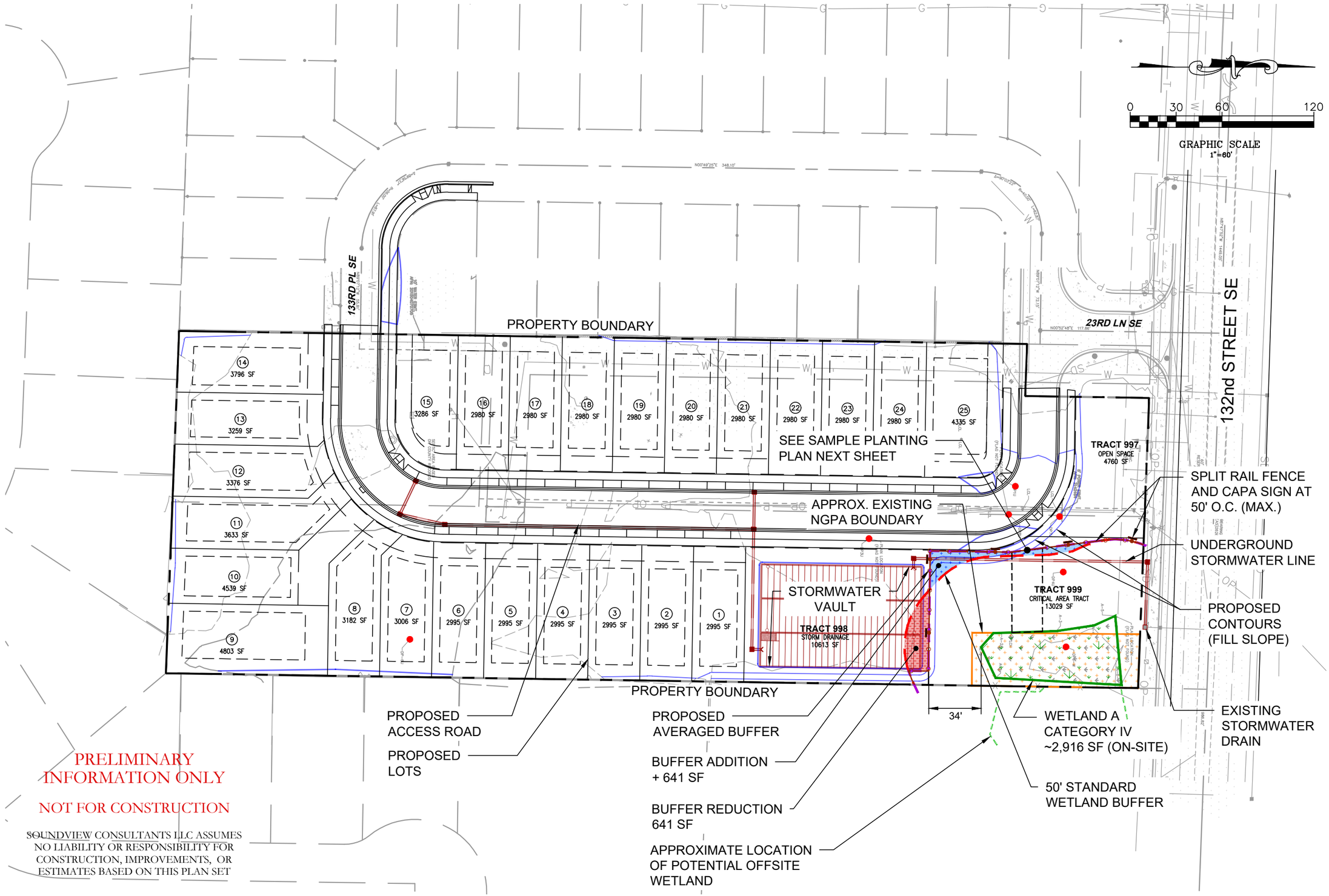
JOB:	1752.0001
BY:	DS
SCALE:	SEE GRAPHIC
SHEET	2 OF 5

CRESTVIEW II - PROPOSED PROJECT and BUFFER AVERAGING PLAN



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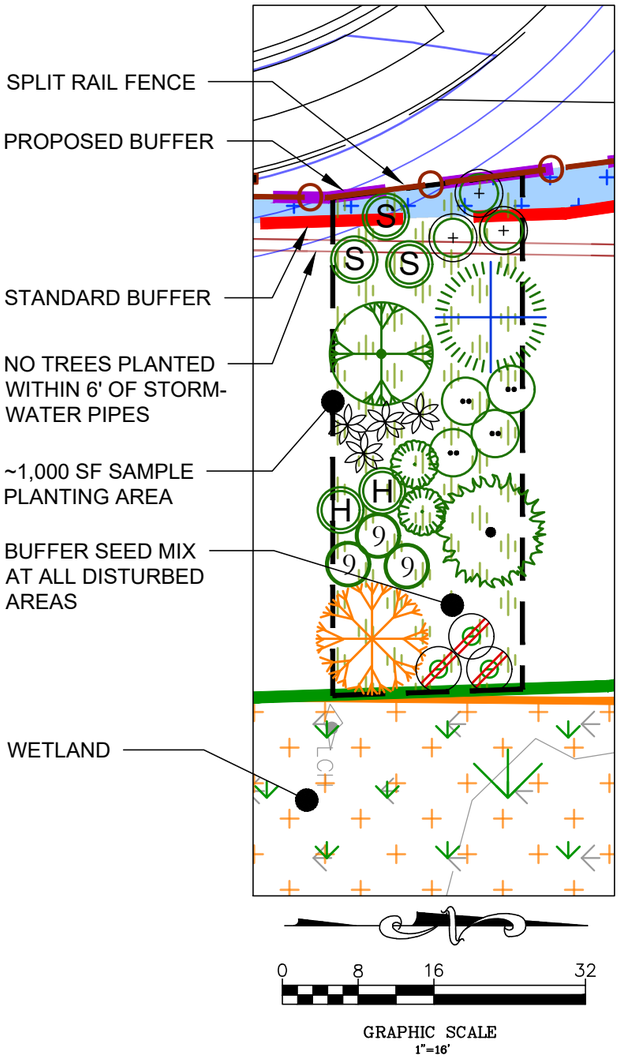
BY:	DS
SCALE:	SEE GRAPHIC
SHEET	3 OF 5

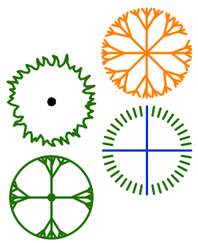
CRESTVIEW II - MITIGATION SAMPLE PLANTING PLAN AND NATIVE PLANT SCHEDULE

SAMPLE WETLAND BUFFER PLANTING PLAN

1" = 16'



NATIVE PLANT SYMBOL KEY



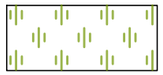
TREES

BETULA PAPYRIFERA
PAPERBARK BIRCH
PICEA SITCHENSIS /
SITKA SPRUCE
PSEUDOTSUGA MENZIESII /
DOUGLAS FIR
THUJA PLICATA /
WESTERN RED CEDAR

SHRUBS

ACER CIRCINATUM /
VINE MAPLE
ATHYRIUMFILIX-FEMINA /
LADY FERN
CORNUS SERICEA /
RED-OSIER DOGWOOD
LONICERA INVOLUCRATA /
BLACK TWINBERRY
PHYSOCARPUS CAPITATUS /
PACIFIC NINEBARK
ROSA NUTKANA /
NOOTKA ROSE
RUBUS SPECTABILIS
SALMONBERRY
SALIX HOOKERIANA /
HOOKER'S WILLOW

SEED MIXES



BUFFER / DRY SOIL SEED MIX THROUGHOUT BUFFER AT ALL DISTURBED AREAS

NOTE: PLANTING DENSITY AND LOCATIONS MAY REQUIRE ADJUSTMENT IN THE FIELD TO ACCOMMODATE EXISTING NATIVE VEGETATION TO REMAIN.

NATIVE PLANT SCHEDULE

			50% trees, 50% shrubs@ 100% cov'g					
Plant Name			**Planting Area**					
Scientific	**Common**	**Plant Status**	**Wetland Buffer Enhancement**	**Total**	**Spacing**	**Size**	**Condition**	**Planting Area**
		Sq. Feet:	9,766	**9,766**				
Trees		Acres:	0.22	**0**				
Picea sitchensis	Sitka spruce	FAC	12	**12**	**10 - 12 ft**	**3 - 4 ft**	**Bare root**	**Moist - near wetland**
Pinus contorta	Shore pine	FAC	12	**12**	**10 - 12 ft**	**3 - 4 ft**	**Bare Root**	**Dry/Moist**
Pseudotsuga menziesii	Douglas fir	FACU	6	**6**	**10 - 12 ft**	**3 - 4 ft**	**Bare root**	**Dry**
Thuja plicata	Western red cedar	FAC	10	**10**	**10 - 12 ft**	**3 - 4 ft**	**Bare root**	**Dry/Moist**
		Total:	**40**	**40**				
Shrubs								
Acer circinatum	Vine maple	FAC	25	**25**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Dry/Moist**
Athyrium filix-femina	Lady fern	FAC	40	**40**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Moist/Wet**
Cornus sericea	Red-twig dogwood	FACW	30	**30**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Moist/Wet - near wetland**
Lonicera involucrata	Black twinberry	FAC	35	**35**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Moist/Wet - near wetland**
Physocarpus capitatus	Pacific ninebark	FACW	25	**25**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Moist/Wet**
Rosa nutkana	Nootka rose	FAC	20	**20**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Dry**
Rubus spectabilis	Salmonberry	FAC	30	**30**	**4 - 5 ft**	**2 - 4 ft**	**Bare root**	**Moist**
Salix hookeriana	Hooker's willow	FACW	20	**20**	**4 - 5 ft**	**2 - 4 ft**	**Stakes**	**Moist/Wet**
		Total:	**225**	**225**				
Buffer Seed Mix 30 lbs/acre			**% by wt.**					
Agrostis exerata	Spike bentgrass	FACW	10					
Deschampsia cespitosa	Tufted hairgrass	FACW	10					
Deschampsia danthonioides	Annual hairgrass	FACW	10					
Deschampsia elongata	Slender hairgrass	FAC	10					
Elymus glaucus	Blue wildrye	FACU	25					
Hordeum brachyantherum	Meadow barley	FACW	25					
Lupinus polyphyllus	Streamside lupine	FAC	10					
		Total:	**100**					

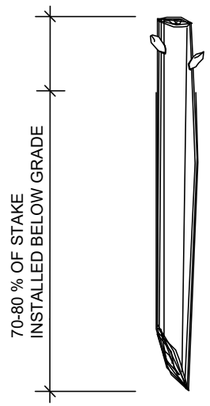
1 - Scientific names and species identification taken from *Flora of the Pacific Northwest (Hitchcock and Cronquist, 1973).*
2 - Over-sized or container plants are suitable for replacement pending project biologist's approval.
3 - All plans and schedules are conceptual for regulatory review and impact analysis.
Final plans may be needed for construction, and be subject to regulatory approval.
5 - Planting density and locations may require adjustment in the field, as directed by project biologist.
6 - All disturbed and bare soil areas, including reinforced earth slope areas, to be seeded with buffer seed mix.

LIVE STAKE PLANTING DETAIL

NOT TO SCALE

NOTES:

1. LIVE STAKES TO BE 1 TO 2 INCH DIAMETER 24 TO 32 INCHES LENGTH.
2. USE 1/2 INCH DIAMETER REBAR OR ROCK BAR TO MAKE PILOT HOLE.
3. INSTALL LIVE STAKES TAPER END DOWN WITH BUDS POINTED UP.
4. MINUMUM TWO BUDS ABOVE GRADE.
5. SET LIVE STAKES WITH DEAD-BLOW HAMMER.
6. WATER IMMEDIATELY AFTER INSTALLATION.



STORAGE OF LIVE STAKES

ALL WOODY PLANT CUTTINGS COLLECTED MORE THAN 12 HR PRIOR TO INSTALLATION, MUST BE CAREFULLY BOUND, SECURED, AND STORED OUT OF DIRECT SUNLIGHT AND SUBMERGED IN CLEAN FRESH WATER FOR A PERIOD OF UP TO TWO WEEKS.

OUTDOOR TEMPERATURES MUST BE LESS THAN 50 DEGREES F AND TEMPERATURE INDOORS AND IN STORAGE CONTAINERS MUST BE BETWEEN 34 AND 50 DEGREES F.

IF THE LIVE STAKES CANNOT BE INSTALLED DURING THE DORMANT SEASON, CUT DURING THE DORMANT SEASON AND HOLD IN COLD STORAGE AT TEMPERATURES BETWEEN 33 AND 39 DEGREES F FOR UP TO 2 MONTHS.

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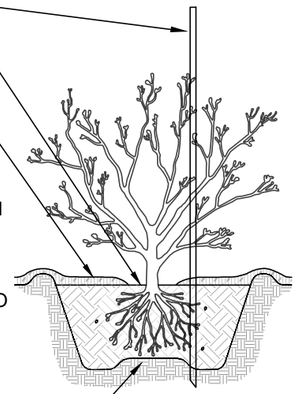
DATE: 10/02/2019
JOB: 1752.0001
BY: DS
SCALE: SEE GRAPHIC
SHEET 4 OF 5

SHRUB PLANTING DETAIL

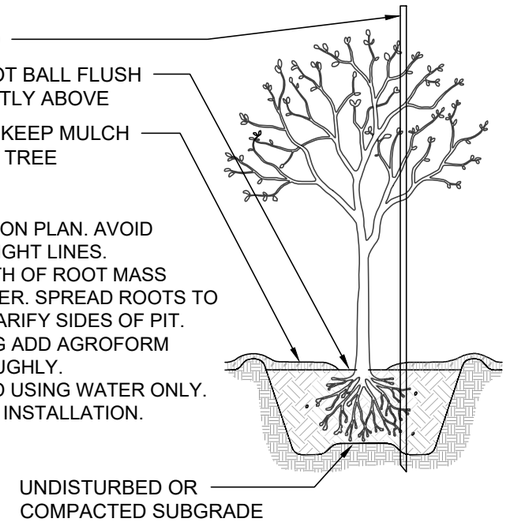
NOT TO SCALE



NOTES:
1. PLANT SHRUBS OF THE SAME SPECIES IN GROUPS OF 3 to 9 AS APPROPRIATE, OR AS SHOWN ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES TO ACHIEVE A NATURAL-LOOKING LAYOUT.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. MIDWAY THROUGH PLANTING ADD AGROFORM TABLET AND WATER THOROUGHLY.
4. BACKFILL TO BE COMPACTED USING WATER ONLY.
5. WATER IMMEDIATELY AFTER INSTALLATION.

TREE PLANTING DETAIL

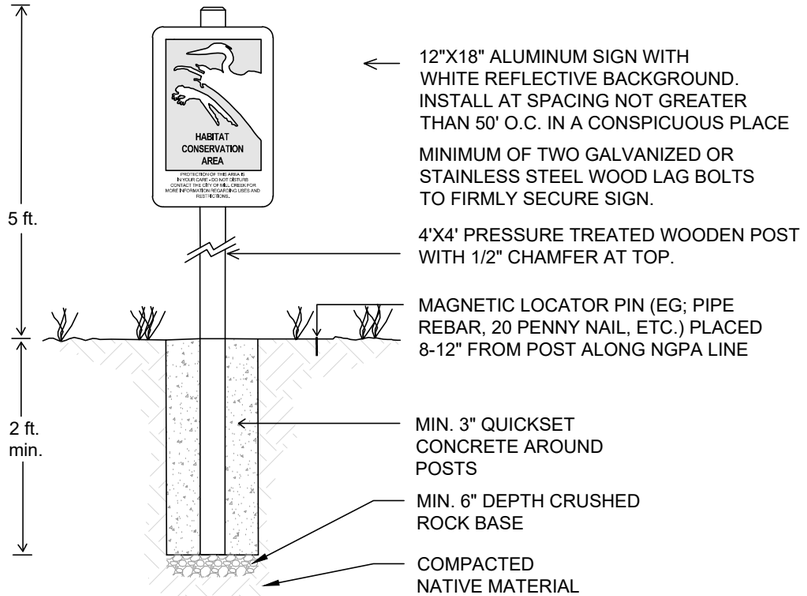
NOT TO SCALE



NOTES:
1. PLANT TREES AS INDICATED ON PLAN. AVOID INSTALLING PLANTS IN STRAIGHT LINES.
2. EXCAVATE PIT TO FULL DEPTH OF ROOT MASS AND 2 X ROOT MASS DIAMETER. SPREAD ROOTS TO FULL WIDTH OF CANOPY. SCARIFY SIDES OF PIT.
3. MIDWAY THROUGH PLANTING ADD AGROFORM TABLET AND WATER THOROUGHLY.
4. BACKFILL TO BE COMPACTED USING WATER ONLY.
5. WATER IMMEDIATELY AFTER INSTALLATION.

CRITICAL AREA BOUNDARY SIGN DETAIL

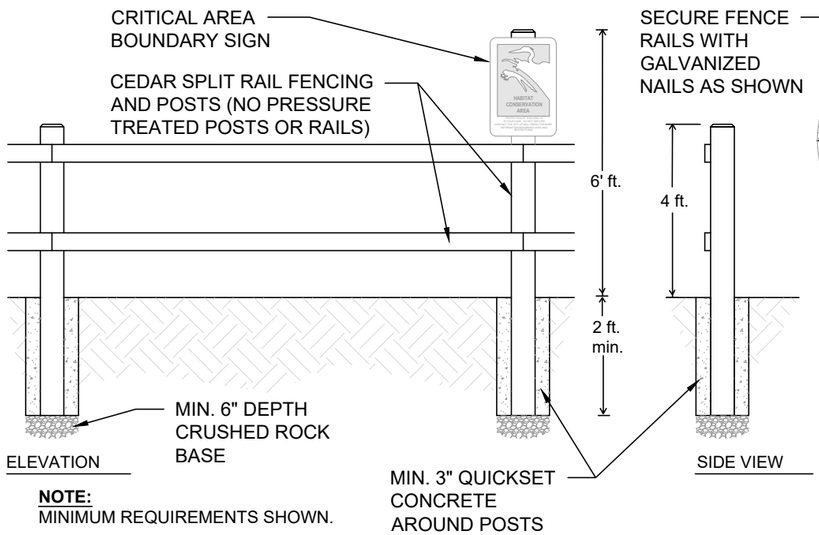
NOT TO SCALE



CRITICAL AREA BOUNDARY SIGN NOTES:
1. CRITICAL AREA BOUNDARY SIGNS SHALL BE PLACED NO GREATER THAN 50 FEET APART AROUND THE PERIMETER OF THE WETLAND BUFFERS RESTORATION AREA, UNLESS OTHERWISE APPROVED BY THE PROJECT BIOLOGIST.
2. SIGN PLACEMENT SHALL BE SUBJECT TO THE APPROVAL OF CITY STAFF. ALTERNATIVE SIGN DESIGNS MAY BE SUBMITTED TO CITY STAFF FOR APPROVAL.
3. ALL SIGNS MUST BE SECURE AND PERMANENT.

SPLIT RAIL FENCE DETAIL

NOT TO SCALE



NOTE:
MINIMUM REQUIREMENTS SHOWN.

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2318, 2316 132ND STREET SE
MILL CREEK, WASHINGTON 98012
THE NW ¼ OF SECTION 32, TOWNSHIP 28N, RANGE 05E, W.M.

DATE:	10/02/2019
JOB:	1752.0001
BY:	DS
SCALE:	SEE GRAPHIC
SHEET	5 OF 5

Appendix E — Drainage Exhibit

TD HOLDINGS LLC - DRAINAGE EXHIBIT

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

TD HOLDINGS LLC
XXXX, 2318, & 2316 132ND STREET SE
MILL CREEK, WA 98012-5616

SNOHOMISH COUNTY PARCEL NUMBERS:
2805320020-0800, 2805320020-1000,
& 2805320020-2300

DATE:	5/30/2019
JOB:	1752.0001
BY:	DLS
SCALE:	1 " = 100 '
FIGURE NO.	1

Appendix F — Data Forms

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 09/05/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-1U

Investigator(s): Erin Harker Section, Township, Range: 32, 28N, 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 47.87769627 Long: -122.20074706 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed; only hydrophytic vegetation present. Data collected in area adjacent to artificially excavated trench.

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: 15 ft)			
1. Spiraea douglasii	30	Yes	FACW
2. Alnus rubra	20	Yes	FAC
3. Rubus armeniacus	5	No	FAC
4. Cornus alba	5	No	FACW
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Phalaris arundinacea	50	Yes	FACW
2. Juncus effusus	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 45

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 due to a dominance of primarily aggressive FACW species typical of disturbed upland areas.

SOIL

Sampling Point: DP-1U

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 - 5	10YR 3/2	100	-	-	-	-	SaLo	Fine sandy loam
5 - 16	7.5YR 3/4	98	7.5YR 4/6	2	C	M	SaLo	Sandy 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:

No hydric soil indicators observed.

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 hydrologic indicators observed.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 09/05/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-2U

Investigator(s): Erin Harker, Matthew Murphy Section, Township, Range: 32, 28N, 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A-2 Lat: 47.877470 Long: -122.20067507 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed; only hydrophytic vegetation present. Data collected in artificially excavated trench. Soils highly disturbed due to historic ditching activities.

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: 15 ft)			
1. Spiraea douglasii	95	Yes	FACW
2. Salix lasiandra	5	No	FACW
3.			
4.			
5.			
	100	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 100

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 due to a dominance of primarily aggressive FACW species typical of disturbed upland areas.

SOIL

Sampling Point: DP-2U

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
0-16	10YR 3/4	80	-	-	-	-	SaLo	Sandy loam
	2.5YR 6/3	18	10YR 5/8	2	C	M	SaLo	Sandy 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:

No hydric soil indicators observed.

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 hydrologic indicators observed.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 09/05/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-3U

Investigator(s): Erin Harker, Matthew Murphy Section, Township, Range: 32, 28N, 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 47.877478 Long: -122.20058693 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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:
No wetland criteria observed. Data collected in historic disturbed area adjacent to artificially excavated trench.

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: 15 ft)			
1. Rubus armeniacus	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Rubus ursinus	99	Yes	FACU
2. Epilobium ciliatum	1	No	FACW
3.			
4.			
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: 2 (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 indicators observed; did not meet the dominance test. The prevalence index is not warranted as no hydric soils or hydrology were observed.

SOIL

Sampling Point: DP-3U

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	10 YR 3/2	100	-	-	-	-	GrSaLo	Gravely sandy 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:

No hydric soil indicators observed. Soils highly disturbed; compacted fill observed at 8 inches below ground 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 hydrologic indicators observed.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 09/05/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-4U

Investigator(s): Erin Harker Section, Township, Range: 32, 28N, 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 47.87780471 Long: -122.20052007 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed; only hydrophytic vegetation present. Upland plot to Wetland A. Data collected in historic disturbed area adjacent to artificially excavated trench.

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: 15 ft)			
1. Spiraea douglasii	60	Yes	FACW
2. Alnus rubra	15	No	FAC
3. Rubus armeniacus	5	No	FAC
4. Salix hookeriana	5	No	FACW
5.			
	85	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Phalaris arundinacea	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 90

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 due to a dominance of primarily aggressive FACW species typical of disturbed upland areas.

SOIL

Sampling Point: DP-4U

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 - 13	10YR 3/3	100	-	-	-	-	GrSaLo	Gravely sandy 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:

No hydric soil indicators observed. Soils highly disturbed; compacted fill observed at 8 inches below ground 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 hydrologic indicators observed.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 09/05/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-5W

Investigator(s): Erin Harker Section, Township, Range: 32, 28N, 05E

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

Subregion (LRR): A2 Lat: 47.87784534 Long: -122.20031581 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed. Data collected within Wetland A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	20	Yes	FACW
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Salix hookeriana	70	Yes	FACW
2. Spiraea douglasii	20	Yes	FACW
3.			
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 100

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-5W

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
+1 - 0	-	-	-	-	-	-	-	Duff - leaf litter
0 - 6	10YR 3/3	93	10YR 6/6	7	C	PL,M	SaLo	Fine sandy loam
6 - 16	10YR 4/2	90	7.5YR 3/4	10	C	M	ClLo	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 observed through indicator F3.

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:

Hydrologic criteria met through primary indicator B1.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 09/05/18

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-6U

Investigator(s): Erin Harker, Matthew Murphy Section, Township, Range: 32, 28N, 05E

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): A2 Lat: 47.876599 Long: -122.20036707 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed; only hydrophytic vegetation present. Data collected in forested area in southeast portion of site.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	45	Yes	FAC
2.			
3.			
4.			
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Rubus armeniacus	80	Yes	FAC
2. Oemlaria cerasiformis	5	No	FACU
3. Rubus ursinus	5	No	FACU
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Pteridium aquilinum	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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 due to a dominance of aggressive FAC species typical of disturbed upland areas.

SOIL

Sampling Point: DP-6U

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 - 7	10 YR 2/2	100	-	-	-	-	MeLo	Medium loam
7 - 10	10YR 3/4	100	-	-	-	-	SaLo	Sandy loam
10 - 16+	10YR 3/3	100	-	-	-	-	SaLo	Sandy 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:

No hydric soil indicators observed.

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 hydrologic indicators observed.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 9/11/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-7U

Investigator(s): Jon Pickett Section, Township, Range: 32, 28N, 05E

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

Subregion (LRR): A2 Lat: 47.877806 Long: -122.20065235 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed; only hydrophytic vegetation present. Data collected in artificially excavated trench. Soils highly disturbed due to historic ditching activities.

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: 15 ft)			
1. Spiraea douglasii	60	Yes	FACW
2. Rubus armeniacus	40	No	FAC
3. Alnus rubra	5	No	FAC
4.			
5.			
	105	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Phalaris arundinacea	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 60

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 due to a dominance of primarily aggressive FACW species typical of disturbed upland areas.

SOIL

Sampling Point: DP-7U

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 3/2	-	-	-	-	-	SaLo	Sandy loam
8 - 10	10YR 4/4	-	-	-	-	-	SaLo	Sandy loam
10 - 14	7.5YR 4/6	98	5YR 5/6	2	C	M	GrSalo	Gravelly sandy 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:

No hydric soil indicators observed. Soils are highly disturbed and appear inverted through historic ditching activities.

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 hydrologic indicators observed.

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

Project/Site: 1752.0001 - Crestview Village II City/County: Mill Creek / Snohomish Sampling Date: 9/11/2018

Applicant/Owner: TD Holdings LLC State: WA Sampling Point: DP-8U

Investigator(s): Jon Pickett Section, Township, Range: 32, 28N, 05E

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

Subregion (LRR): A2 Lat: 47.877708 Long: -122.20065436 Datum: WGS 84

Soil Map Unit Name: Alderwood - Urban Land Complex NWI classification: N/A

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 observed; only hydrophytic vegetation present. Data collected in artificially excavated trench. Soils highly disturbed due to historic ditching activities.

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: 15 ft)			
1. Spiraea douglasii	90	Yes	FACW
2.			
3.			
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 100

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 observed through dominance test due to a dominance of an aggressive FACW species typical of disturbed upland areas.

SOIL

Sampling Point: DP-8U

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 3/4	-	-	-	-	-	SaLo	Sandy loam
8 - 14	7.5YR 4/6	-	-	-	-	-	SaLo	Sandy 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:

No hydric soil indicators observed. Soils are highly disturbed and appear inverted through historic ditching activities.

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 hydrologic indicators observed.

Appendix G — Wetland Rating Form

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): A Date of site visit: 9/5/18

Rated by Erin Harker & Jon Pickett Trained by Ecology? ✔ Yes ___No Date of training 9/14/17

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 IV (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

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

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the appropriate ratings		
Site Potential	L	L	L	
Landscape Potential	M	M	L	
Value	M	M	L	**TOTAL**
Score Based on Ratings	5	5	3	13

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 A

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 A

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 A

☒ 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 A

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	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > 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	1
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	0
Total for D 1 Add the points in the boxes above	2

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 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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1

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

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	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	0
Total for D 3 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*

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

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 or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
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	3

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

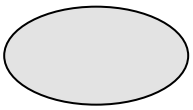
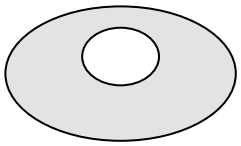
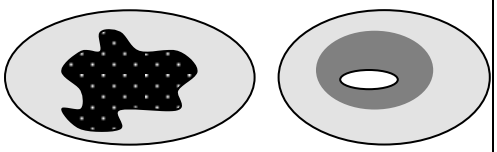
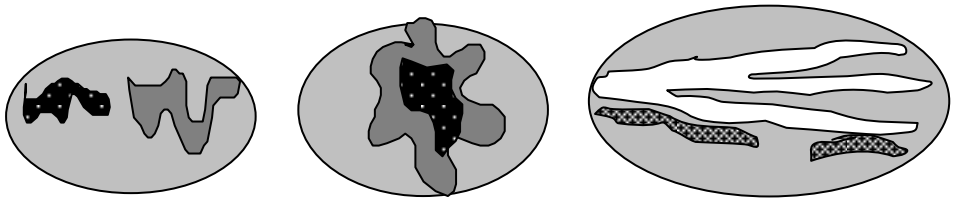
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% 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	2

Rating of Landscape Potential If score is: ___ **3 = H** X **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 A

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 ____Emergent — 3 structures: points = 2 _×_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	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 ____Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 _×_Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	0
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 	0

Wetland name or number A

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____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*)	1
Total for H 1 Add the points in the boxes above	2

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] % undisturbed habitat **+** [(% moderate and low intensity land uses) [0.36] /2] **=** 0.18 % 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. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* [10.58] % undisturbed habitat **+** [(% moderate and low intensity land uses) [9.35] /2] **=** 15.254999999999 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	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 A

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

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

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

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

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

— **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number A

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 page 25) ☐ 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. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes **– Go to SC 2.2** ☒ No **– Go to SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes **= Category I** ☒ No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes **– Contact WNHP/WDNR and go to SC 2.4** ☒ No **= Not a WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ 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 = **Is a 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 = **Is a Category I bog** ☐ No **= Is not a bog**	

Wetland name or number A

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)*

☐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 on p. 100).
- 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

☐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

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Appendix H — Wetland Rating Maps

TD HOLDINGS LLC - COWARDIN MAP

Soundview Consultants LLC
Environmental Assessment • Planning • Land Use Solutions
2907 Harborview Dr., Suite D, Gig Harbor, WA 98335
Phone: (253) 514-8952 Fax: (253) 514-8954
www.soundviewconsultants.com

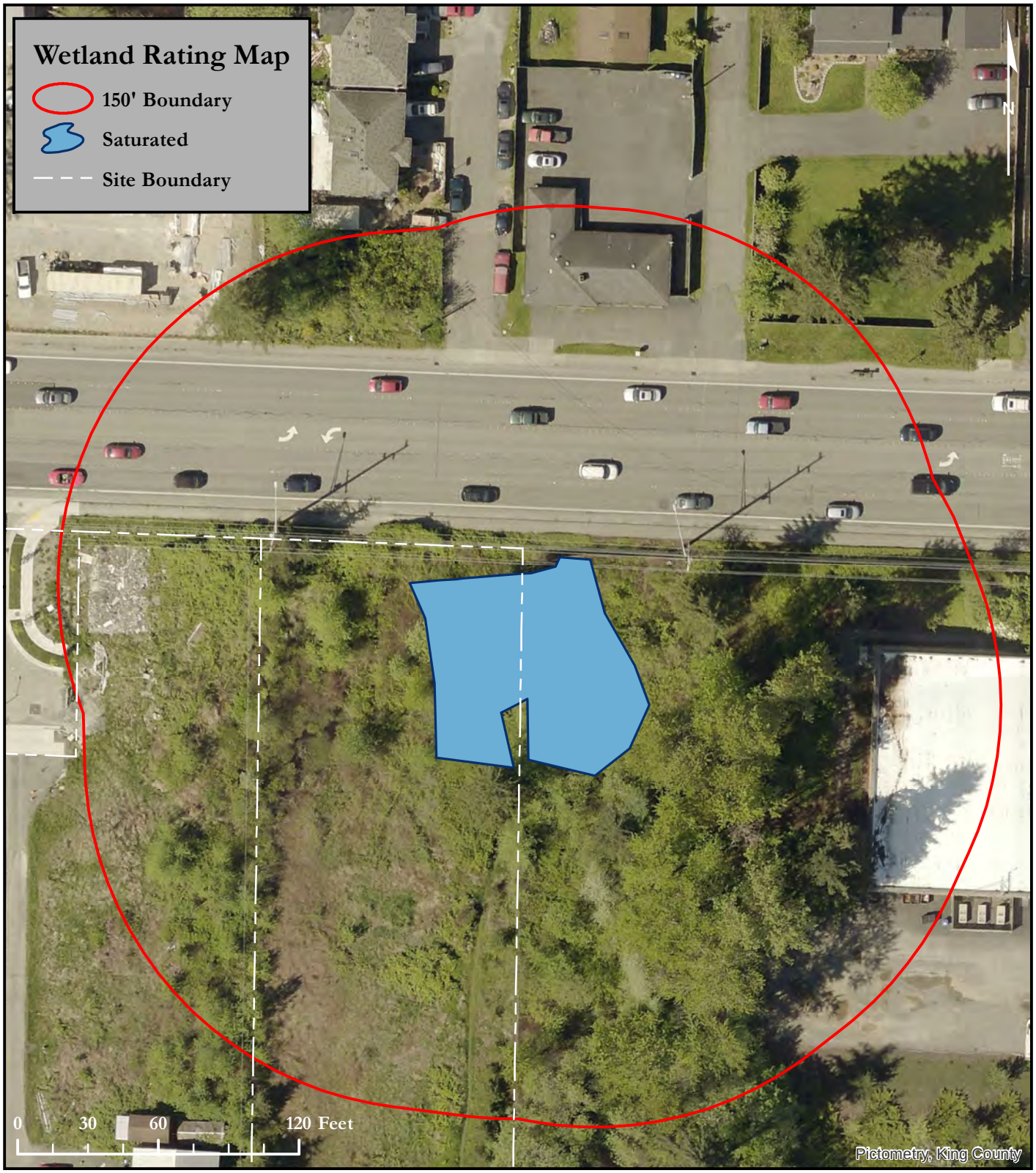
TD HOLDINGS LLC

XXXX, 2318, & 2316 132ND STREET SE
MILL CREEK, WA 98012-5616

SNOHOMISH COUNTY PARCEL NUMBERS:
2805320020-0800, 2805320020-1000,
& 2805320020-2300

DATE:	2/20/2019
JOB:	1752.0001
BY:	DLS
SCALE:	1 " = 120 '
FIGURE NO.	1 of 5

TD HOLDINGS LLC - HYDROPERIOD MAP



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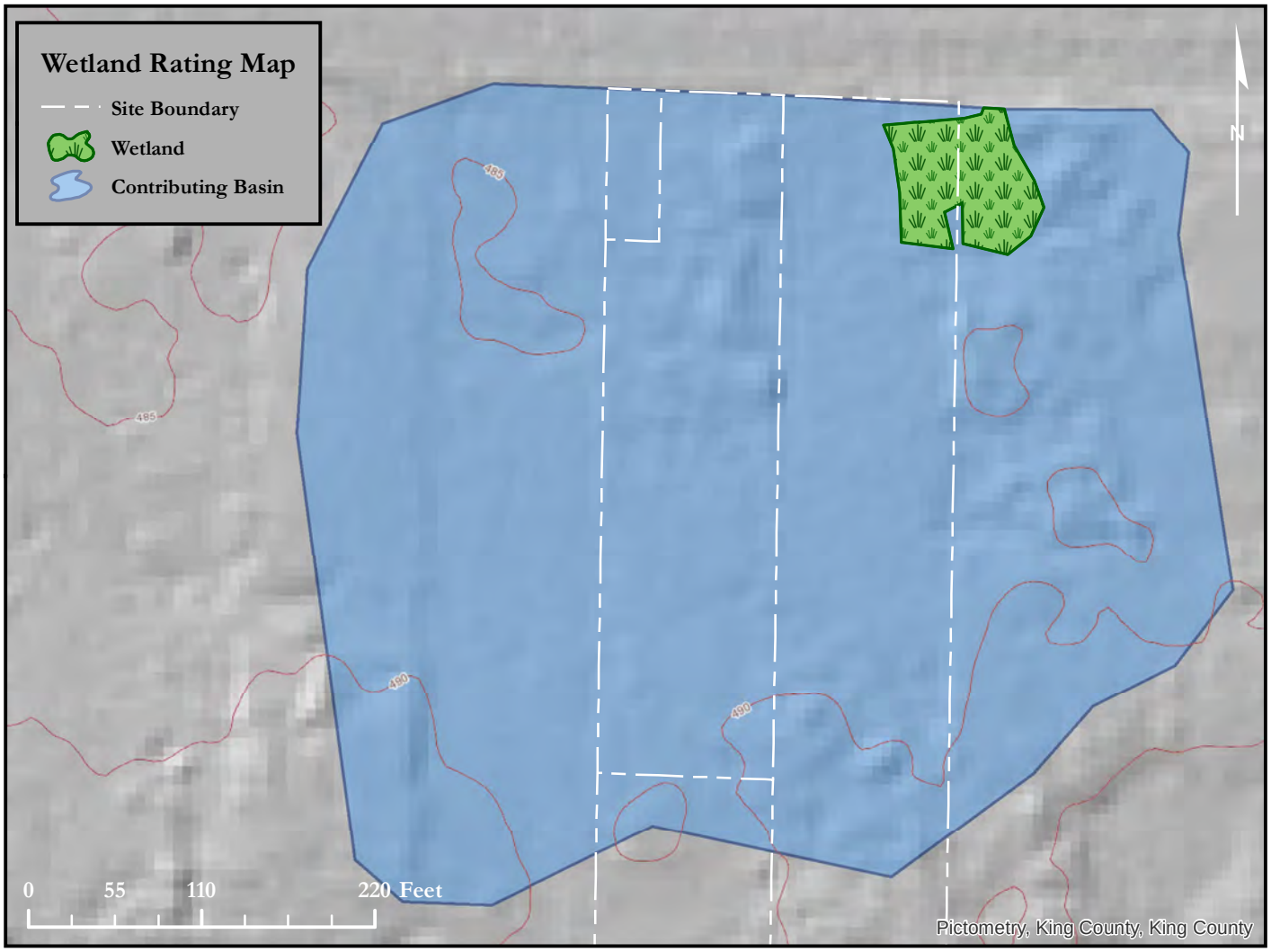
MILL CREEK, WA 98012-5616

SNOHOMISH COUNTY PARCEL NUMBERS:
2805320020-0800, 2805320020-1000,
& 2805320020-2300

DATE:	2/20/2019
JOB:	1752.0001
BY:	DLS
SCALE:	1 " = 60 '
FIGURE NO.	2 of 5

TD HOLDINGS LLC - CONTRIBUTING BASIN MAP



D.4.0		
D.4.3		
	Area of Contributing Basin (SF)	256,814
	Area of Wetland A (SF)	6,624
	Percent of Wetland A within Contributing Basin	**2.579%**
D.5.0		
D.5.3		
	Area of Contributing Basin	256,814
	Area of Intensive Human Land Uses	148,464
	Percent of Intensive Human Land Use within Contributing Basin	**58%**

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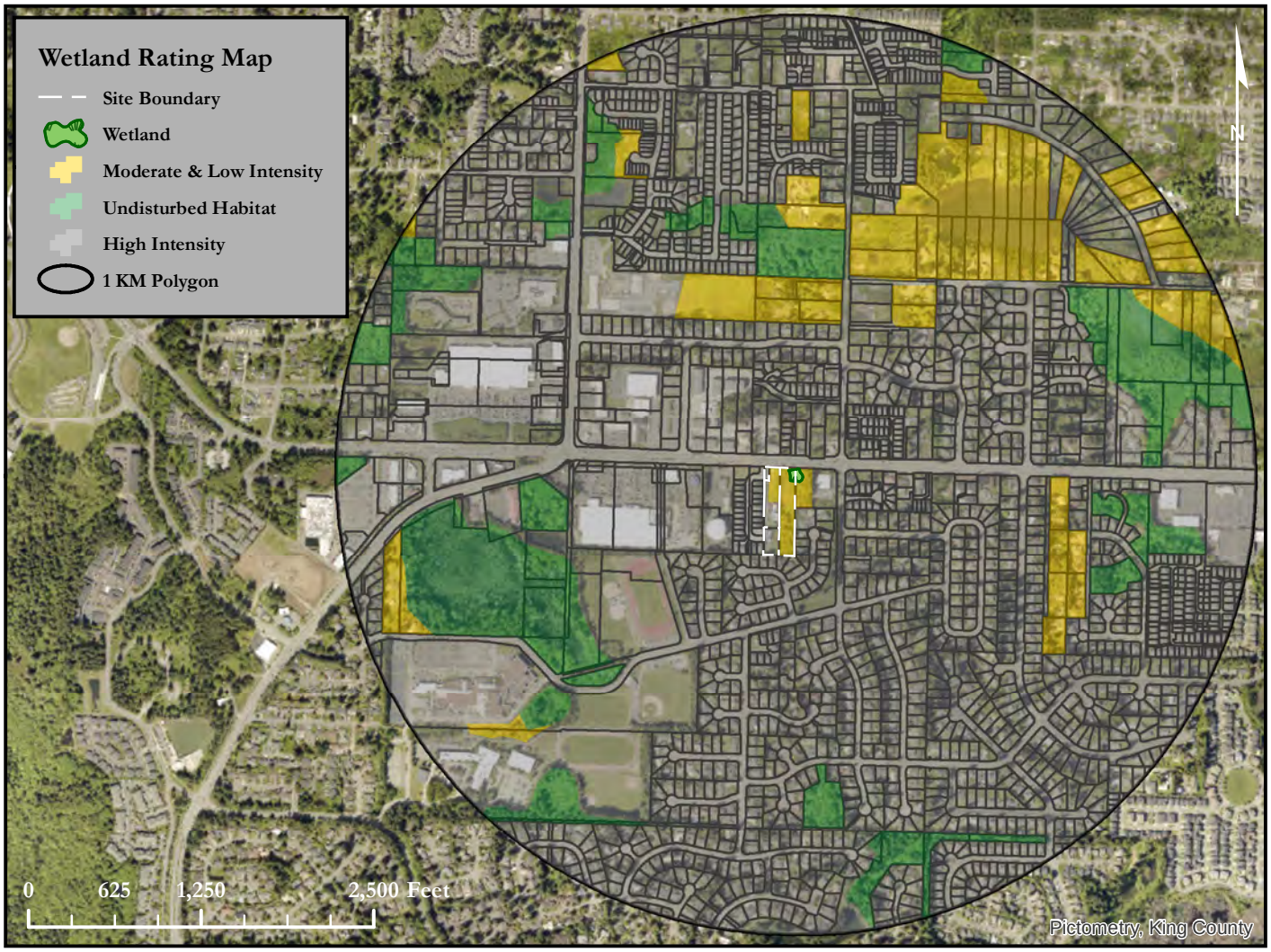
MILL CREEK, WA 98012-5616

SNOHOMISH COUNTY PARCEL NUMBERS:
2805320020-0800, 2805320020-1000,
& 2805320020-2300

DATE: 2/20/2019
JOB: 1752.0001
BY: DLS
SCALE: 1 " = 110 '
FIGURE NO. 3 of 5

TD HOLDINGS LLC - HABITAT MAP



H.2.0 Wetland A		
H.2.1		
	Abutting Undisturbed Habitat	0.00%
	Abutting Moderate & Low Intensity Land Uses	0.36%
	Accessible Habitat	**0.18%**
H.2.2		
	Undisturbed Habitat	10.58%
	Moderate & Low Intensity Land Uses	9.35%
	Undisturbed Habitat in 1 KM Polygon	**15.25%**
H.2.3		
	High Intensity Land Use in 1 KM Polygon	**80.07%**

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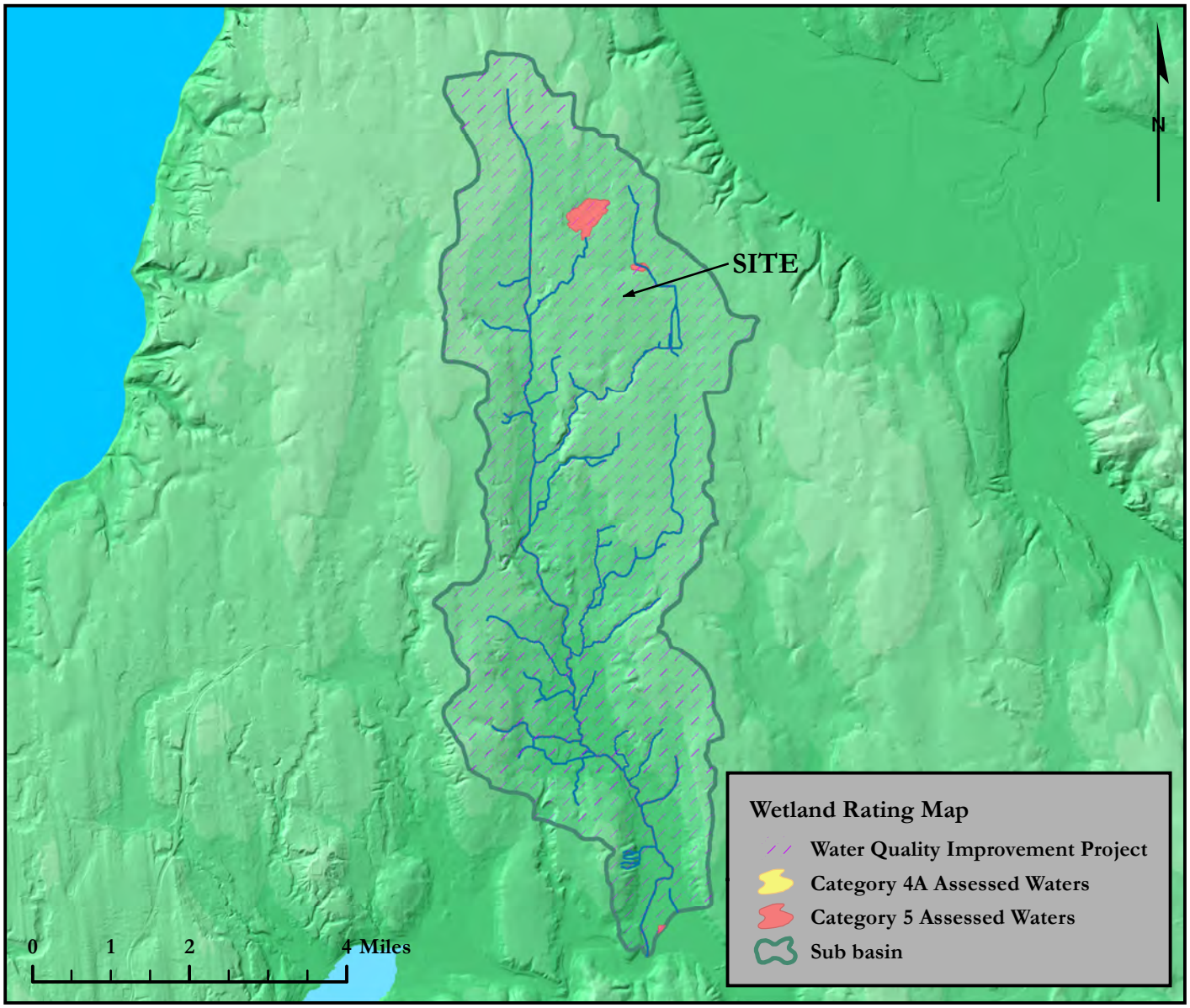
SNOHOMISH COUNTY PARCEL NUMBERS:
2805320020-0800, 2805320020-1000,
& 2805320020-2300

DATE: 2/20/2019
JOB: 1752.0001
BY: DLS
SCALE: 1 " = 1,250 '
FIGURE NO. 4 of 5

TD HOLDINGS LLC - 303d & TMDL MAP



LISTING ID	CATEGORY	PARAMETER	MEDIA	WATERBODY	WATERBODY TYPE
7458	4A	Bacteria	Water	NORTH CREEK	Rivers/Streams
45735	4A	Bacteria	Water	CRYSTAL CREEK	Rivers/Streams
45743	4A	Bacteria	Water	NORTH CREEK	Rivers/Streams
45736	4A	Bacteria	Water	FILBERT CREEK	Rivers/Streams
72247	4A	Bacteria	Water	PENNY CREEK	Rivers/Streams
45734	4A	Bacteria	Water	WOOD CREEK	Rivers/Streams
45729	4A	Bacteria	Water	UNNAMED CREEK (TRIB TO NORTH CREEK)	Rivers/Streams
7459	4A	Bacteria	Water	NORTH CREEK	Rivers/Streams
72258	4A	Bacteria	Water	SILVER CREEK	Rivers/Streams
74432	4A	Bacteria	Water	SULPHUR SPRINGS CREEK	Rivers/Streams
45742	4A	Bacteria	Water	PALM CREEK	Rivers/Streams

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MILL CREEK, WA 98012-5616

SNOHOMISH COUNTY PARCEL NUMBERS:
2805320020-0800, 2805320020-1000,
& 2805320020-2300

DATE: 2/20/2019
JOB: 1752.0001
BY: DLS
SCALE: 1 " = 2 mi
FIGURE NO. 5 of 5

Appendix I — Prior CASP and CAS (1997)

Return Address:

Court Sheehan
2433 - 134th Pl. SE
Bothell, WA. 9801 2

9710060487
10/06/97 15:09
p.0002 Recorded
Snohomish County

COPY
ORIGINAL ON FILE IN THE
COUNTY AUDITOR'S OFFICE

CRITICAL AREAS SITE PLAN

Reference number(s) of related documents

97 - 103780 GP

Grantor(s):

Sheehan	Court	F.
Last Name	First Name	MI

Grantee(s):

Legal Description:

A PORTION OF THE NORTHWEST QUARTER OF SECTION 32, TOWNSHIP 28 NORTH, RANGE 5 EAST, W.M., LYING NORTHERLY OF BLOCK 2, THE PLAT OF HEATHERWOOD GARDEN TRACTS #3 AS PER PLAT RECORDED IN VOLUME 10 OF PLATS, PAGE 23A, RECORDS OF SNOHOMISH COUNTY, WASHINGTON AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION 32, 30.00 FEET SOUTH OF THE NORTHWEST CORNER THEREOF;
THENCE SOUTH 89 DEGREES 30'30" EAST ALONG THE SOUTH MARGIN OF THE COUNTY ROAD FOR 1527.14 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUE SOUTH 89 DEGREES 30'30" EAST FOR 111.67 FEET;
THENCE SOUTH 0 DEGREES 49'50" EAST FOR 650.00 FEET TO THE NORTHERLY OF SAID BLOCK 2, HEATHERWOOD GARDEN TRACTS #3;
THENCE NORTH 89 DEGREES 30'30" WEST ALONG THE NORTH LINE OF SAID BLOCK 2 FOR 111.67 FEET;
THENCE NORTH 0 DEGREES 49'50" WEST FOR 650.00 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THE NORTH 15 FEET THEREOF CONVEYED TO COUNTY OF SNOHOMISH BY DEED RECORDED UNDER AUDITOR'S FILE NO. 8401110248.

SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

___ Additional legal description is on page ____ of document

Assessor s Property Tax Number(s)

Tax Acct. # 322805-2-008-0003

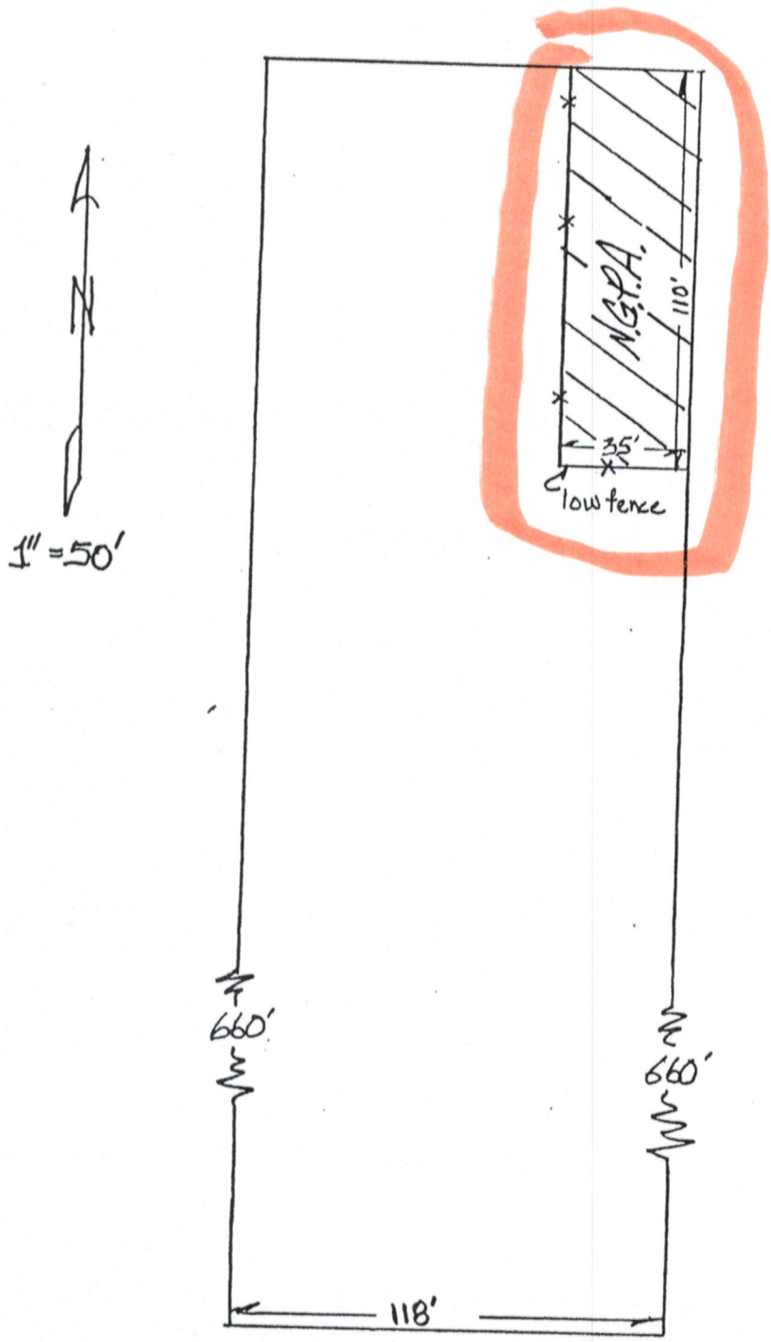
CRITICAL AREAS SITE PLAN

PROJECT#: **97 - 103780 GP** APPLICANT: **COURT SHEEHAN**

SITE ADDRESS: 23XX - 132ND ST. SE, EVERETT, WA. 98208

TAX ACCT.#: **322805-2-008-0003**

CRITICAL AREA SQ. FT.: **3,500 (exempt with BMP Mitigation)** Buffer sq. ft.: **0**



Approved by R. Hoffman Date 9/22/95
Snohomish County Planning & Development Services

NATIVE GROWTH PROTECTION AREA (NGPA) is to be left undisturbed in a substantially natural state. No clearing, grading, filling, building construction or placement, or road construction of any kind shall occur in this area. The activities as set forth in SCC 32.10.110(29) a, c, d, are allowed when approved by the County.

Representations on this site plan may be approximations only and should not be used for purposes other than for determining general locations of critical areas. Development activities beyond the scope of this plan may require additional studies and approvals.

Wetland Resources, Inc.

Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance

9505 19th Avenue S.E.
Suite 106
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Critical Area Study
and
Best Management Practices Mitigation

September 4, 1997

Mr. Court Sheehan
2433 - 134th Pl. S.E.
Bothell, WA 98012

Re: Critical Area Study and Mitigation For Impacts
Application No. 97-103708 GP
Tax No. 322805-2-008-0003

Situation Description

In the summer of 1996 Mr. Sheehan cleared blackberry, sapling alder and spirea from approximately 1/2 of the 1.8 acres of property described as Tax N. 322805-2-008-0003. Mr. Sheehan used a small Kabota wheel tractor with a bucket to clear the brush. In areas where the blackberry was thickest Mr. Sheehan excavated below the ground surface from 1/2 to 1 foot. He did this to remove root material in preparation for planting Christmas trees. Mr. Sheehan then hauled several loads of brush and soil off of the lot. In September of 1996 Wetland Resources investigated the property for wetland conditions. We concluded that two small isolated Category 3 areas of wetland, 3600 square in size, existed on the property.

The areas where blackberry had been dug out were slightly concaved. These areas were not underlain with hydric soils and were not considered to meet definitions for jurisdictional wetlands. An older existing gravel entrance was in place at that time. An older existing drainage ditch was in place along the west side of the property at that time. Mr. Sheehan applied for a grading permit on the property in the spring of 1997. His intent was to fill the slight depressions he had created six months earlier, with clean top soil. While the grading permit was being processed, additional gravel was added to the existing entrance. The entrance was extended approximately 20 feet onto the property. The drainage ditch was cleaned and the spoils were stacked next to the ditch. An additional 70 feet of side ditch was constructed at that time. Two loads of dirt were hauled into the site and dumped at the end of the access driveway.

On inspection of the site by Snohomish County in relation to the grading permit the County determined that a grading violation had occurred. A memo from Jane Erickson, dated May 5, 1997, was received by Mr. Sheehan indicating that further information was needed. The memo indicated that a SEPA Checklist, Critical Area Study and Restoration Plan was required in addition to further grading and site plan changes. Wetland Resources met with Randy Middaugh on the site to discuss wetland conditions on June 25, 1997 and on August 25, 1997. It was agreed at these meetings that there were two small wetlands

which were pre existing on the site prior to the clearing activity. It was agreed that most of the gravel drive entrance was pre existing. It was agreed that the ditch excavation was over an old existing ditch and that the outlet elevation had not been changed as a result of the ditch cleaning. It was agreed that the enlarged depressions were not jurisdictional wetlands areas based on lack of hydric soils. Evidence of recent ponding in these silght depressions was caused by unusual precipitation during the spring of 1997.

Mitigation Under Best Management Practices

Mr. Sheehan offers to preserve 3850 square feet of area in the north east corner of the property as NGPA (Native Growth Protection Area). This area lies adjacent to an off-site forested wetland immediately to the east of the subject property. The approximate 1:1 area replacement for isolated wetland will mitigate for the lost functions of the isolated wetlands on site. The protection of additional buffer adjacent to an off site wetland area, will replace the limited benefits associated with the loss of isolated wetlands less than 4,000 square feet in size, on the Sheehan property.

CRITICAL AREA STUDY

Project Site Description

The northern half of the property is generally flat and vegetated with native grass and forb species. The northeast corner of the property is dominated by native shrubs (spirea and willow). The southern half of the property is dominated by alder, Douglas-fir and maple. The property generally slopes from the south to the north. The underlying soils are similar to the Alderwood series description.

Wetland Description

Wetland Area - North (3500 square feet)
The northern wetland area is dominated by spirea and scoulers willow on the north 2/3 and by bare ground on the south 1/3. The area of bare ground was used for parking during the expansion of 132nd. St. in 1995. Soils underlying this area were gravelly loam in texture, colored 10YR 2/2 at the surface and 2.5Y 4/2 with mottles below six inches.
Wetland Area - East Central (150 square feet)
This wetland is dominated by bare ground and slough sedge. Underlying soils are similar tothe northern wetland.

Snohomish County Critical Area Wetland Categories
All of these wetland areas are rated as category 3, isolated and less than 5,000 square feet. These wetland areas, under Snohomish County Critical Area Regulation, may be altered if mitigation is provided under Best Management Practices.

Area of Concern

The area of concern was slightly depressed during the recent clearing operation. The underlying soils are gravelly loam in texture and colored in the 10YR 3/3 range below six inches. The vegetation in this recently cleared area is dominated by marsh cudweed and toad rush, both wetland plants which tend to invade recently disturbed areas. The surface shows signs of recent ponding. The recent ponding is not normal and is apparently a

condition caused by the above normal rainfall in the spring and winter of 1997. This area does not meet definitions of wetland criteria.

Wildlife and Function and Value Analysis

These wetland receive very limited use by wildlife. Passerine birds and small mammals are predicted to use the site on a limited bases. The wetlands are very small and isolated by urban development. Wetland A has some very limited habitat comprised of alder, willow and spirea. It is a very small closed basin with limited storm water detention functions. Wetland B is of much less value to wildlife as the only vegetation in the vicinity is spirea. The potential for detaining storm water is very limited as an exiting ditch runs through the area. Wetland I is less than 150 square feet in size and is not measurable as to function and value for the use of this report.

Use of This Report

This wetland determination was conducted as a means of assessing sensitive area development under the current Snohomish County Critical Area Regulation. The laws applicable to wetlands are subject varying interpretations, and may be changed at anytime by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.

If you require any further information on this project, please contact me directly at (425) 337-3174.

Sincerely,

William Railton
Certified Professional Wetland Scientist

Appendix J — Site Photographs

Piping and Box Structure within Artificial Drainage Ditch

Piping Associated with Artificial Drainage Ditch

Soils Profile Near DP-1

Soil Profile Near DP-8

Test Hole South of DP-1

Increased Wetland Boundary Area

Appendix K — Qualifications

All field inspections, jurisdictional wetland boundary delineations, fish and wildlife habitat assessments, and supporting documentation, including this ***Wetland and Fish and Wildlife Habitat Assessment Report*** prepared for TD Holdings LLC, were prepared by, or under the direction of Jon Pickett of SVC. In addition, site inspections were performed by Jon Pickett and Erin Harker, and report preparation was completed by Ben Wright and Kyla Caddey.

Jon Pickett

Senior Environmental Planner
Professional Experience: +10 years

Jon Pickett is a Senior Scientist/Environmental Planner with diverse professional experience in habitat development as a Regional Biologist and Environmental Project Manager, with an emphasis in wetland restoration and enhancement. Jon has extensive experience successfully planning, developing, securing funding, managing and implementing numerous large-scale wetland habitat projects aimed at restoring the biological and physical functions of wetlands throughout California's Central Valley and Southern California. During this time, he managed a 2,200-acre private wetland and upland habitat complex as a public trust resource for conservation and consumptive use. He worked to ensure projects were designed and implemented to achieve habitat restoration goals, including reclamation of wetland and floodplain habitats, reintroduction of aquatic complexity and habitat, and reestablishment of riparian corridor.

Jon has worked with Federal and State agencies and private entities on land acquisitions for conservational habitat and public use, including prioritizing acquisitions relative to value and opportunity and funding. In addition, Jon has experience in regulatory coordination to ensure projects operated in compliance with Federal, State and local environmental regulations, preparing permit documentation, coordinating with all pertinent agencies and stakeholders, and developing and maintaining appropriate permitting timelines to ensure timely approvals. He also oversaw earthwork construction components and revegetation efforts, as well as post-project monitoring, with an emphasis in native vegetation establishment and natural channel morphology.

Jon earned a Bachelor of Science degree in Natural Resource Sciences from Washington State University and Bachelor of Science Minor in Forestry from Washington State University. Jon has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement) and has been formally trained in the use of the Washington State Wetland Rating System, How to Determine the Ordinary High Water Mark, Using Field Indicators for Hydric Soils, and the Using the Credit-Debit Method for Estimating Mitigation Needs.

Kyla Caddey

Environmental Scientist
Professional Experience: 5 years

Kyla Caddey is an Environmental Scientist with a diverse background in riparian habitat restoration, stream and wetland ecology, wildlife ecology and conservation, and wildlife and natural resource assessments and monitoring. Kyla has advanced expertise in report preparation, grant writing, environmental education, data compilation and statistical analysis. Kyla has field experience

performing in-depth studies in both the Pacific Northwest and Central American ecosystems. She currently performs 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.

Kyla earned a Bachelor of Science degree in Environmental Science and Resource Management from the University of Washington, Seattle with a focus in Wildlife Conservation and a minor in Quantitative Science. She has received 40-hour wetland delineation training (Western Mtns, Valleys, & Coast and Arid West Regional Supplement), and is a Pierce County Qualified Wetland Specialist and Wildlife Biologist. Kyla has been formally trained through the Washington State Department of Ecology, Coastal Training Program, and the Washington Native Plant Society in winter twig and grass, sedge, and rush identification for Western WA; Using the Credit-Debit Method in Estimating Wetland Mitigation Needs; How to Determine the Ordinary High Water Mark; Using Field Indicators for Hydric Soils; How to Administer Development Permits in Washington Shorelines; Puget Sound Coastal Processes; and Forage Fish Survey Techniques.

Erin Harker

Staff Wetland Scientist
Professional Experience: 4 years

Erin Harker is a Staff Wetland Scientist with diverse ecological experience in both field and laboratory settings in the Pacific Northwest. She has gained hands-on experience involving research on water quality, salmon runs, amphibian surveys, restoration project performance, and marine mammal hydro-acoustics. Erin is proficient in collecting and analyzing environmental data; riparian restoration and wetland mitigation monitoring principles and techniques; analyzing local, state, and federal environmental code and regulations; and technical writing. Erin has additional experience engaging students and volunteers in a suite of environmental curriculums. She currently performs wetland, ordinary high water, and forensic delineations, in addition to assisting clients through the various stages of land use planning by conducting environmental code analysis; preparing environmental assessments, mitigation reports, and biological evaluations; and completing permit applications.

Erin graduated from Western Washington University with a Bachelor of Science degree in Environmental Science with a Marine Ecology focus. She has received 40-hour Wetland Delineation Training through the USACE and formal training through the WSDOE and Coastal Training Program in conducting forage fish surveys; using the credit-debit system for estimating wetland mitigation needs, determining the ordinary high water mark; Puget Sound coastal processes; conducting eelgrass delineations; using the 2014 wetland rating system; using field indicators for hydric soils; and administering permits in the shoreline jurisdiction.

Ben Wright

Environmental Scientist
Professional Experience: 18 years

Ben Wright is an Environmental Scientist with a varied background in lake ecology, stream ecology, fisheries biology, water quality and climate science. Ben has 13 years of experience at the federal level providing technical assistance for both the development of infrastructure projects and management

of aquatic resources. He has experience developing biological assessments, water quality monitoring plans, and fisheries management plans. Ben has an additional 10 years of experience working on long-term ecological monitoring programs related to lakes, streams, water quality and climate.

Ben earned a Bachelor of Science degree in Genetics and Cell Biology with an emphasis in aquatic ecology from Washington State University and has a graduate certificate in Fisheries Management from Oregon State University. Ben's expertise includes endangered species monitoring, assessments and permitting, and NEPA documentation across disciplines gained during his work on federal highway projects. Ben also has experience in fish population assessments, utilizing genetic analysis, spawning escapement and movement studies.