



CRITICAL AREAS REPORT & BUFFER MODIFICATION PLAN

November 18, 2020



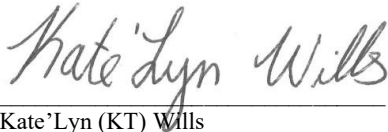
Leadbetter Road
Camas, Washington

Prepared for
CJ Dens Land Company
PO Box 2429
Vancouver, Washington 98668

Prepared by
Ecological Land Services
1157 3rd Avenue, Suite 220A • Longview, WA 98632
(360) 578-1371 • Project Number 1795.03

SIGNATURE PAGE

The information in this report was compiled and prepared under the supervision and direction of the undersigned.

A handwritten signature in cursive script that reads "Kate'Lyn Wills". The signature is written in dark ink and is positioned above a horizontal line.

Kate'Lyn (KT) Wills
Biologist/Environmental Scientist IV

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INTRODUCTION

Ecological Land Services, Inc. (ELS) has completed this critical areas report and buffer modification plan on behalf of CJ Dens Land Company for the development of a residential subdivision. The site consists of Clark County Tax Parcels 177905000, 178172000, 178236000, and 177906000 located off SE Leadbetter Road in Camas, Washington., within a portion of Sections 34 & 35, Township 2 North, and Range 3 East of the Willamette Meridian (Figure 1). This report summarizes the findings of critical areas onsite in accordance with the Camas Code of Ordinances (CCO) *Title 16.5 Critical Areas* (2020).

SITE DESCRIPTION

The approximately 82-acre site is zoned as Residential (R-7.5) and is currently vacant of structures. The adjacent property to the southeast consists of a residential subdivision. SE Leadbetter Road forms the southern property boundary with Lacamas Lake just to the south. The remaining adjacent properties to the north and east consist of undeveloped, forested hillslopes. The topography of the site varies, with gradual to steep slopes, deep ravines, and level plateaus (Figure 1). The site contains three small, non-fish bearing streams and a depressional, forested wetland (Wetland A). Stream 1 is a perennial stream (Type Np) that originates approximately 800 feet offsite to the north and flows south/southwest through Wetland A in the northeastern corner of the site. Once Stream 1 leaves Wetland A it flows southwest through a narrow ravine for approximately 1,200 feet before flowing through a culvert under SE Leadbetter Road and into Lacamas Lake. Stream 2 is a small seasonal stream (Type Ns) that originates in the northern central portion of the site and flows northeast for approximately 1,000 feet before converging with Stream 1. Stream 3 is also a small seasonal stream (Type Ns) that originates offsite and flows through the southeastern corner of the site and into a roadside ditch along the north side of SE Leadbetter Road (Figure 2). The area south of Stream 1 was logged in 2015 leaving herbaceous species with a few scattered shrubs. The area north of Stream 1 and the western portion of the site are forested with a mix of mature coniferous and deciduous trees with a dense understory of shrubs and herbaceous vegetation.

METHODOLOGY

ELS biologists originally delineated Wetland A and the three streams on the subject property in 2013. In order to update the expired critical areas delineation, ELS biologists conducted a redelineation of the property on August 10, 2020 to determine if the boundaries of mapped critical areas had changed. Prior to conducting the site visit, ELS reviewed current and historic aerial photographs dating back to 1990 and reviewed online database information regarding soils, topography, wetlands, and shoreline areas.

The wetland delineation followed the Routine Determination Method according to the U.S. Army Corps of Engineers, *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Engineer Research and Development Center 2010).

The Routine Determination Method examines three parameters—vegetation, soils, and hydrology—to determine if wetlands exist in a given area. Hydrology is critical in determining

what is wetland but is often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as “Waters of the United States” by the U.S. Army Corps of Engineers (Corps), as “Waters of the State” by the Washington Department of Ecology (Ecology), and locally by CCO 16.5.

During the site visit, vegetation, soils, and hydrology information was verified along the wetland boundary and two new test plots were taken along a small portion of the wetland boundary that ELS biologists determined had changed since the original delineation in 2013. The two new wetland determination data sheets from these additional two test plots can be found in Appendix A.

VEGETATION

The upland vegetation within the wetland buffer was dominated by big leaf maple (*Acer macrophyllum*, FACU), western brackenfern (*Pteridium aquilinum*, FACU), western swordfern (*Polystichum munitum*, FACU), trailing blackberry (*Rubus ursinus*, FACU), Himalayan blackberry (*Rubus armeniacus*, FAC), salmonberry (*Rubus spectabilis*, FAC), and reed canarygrass (*Phalaris arundinacea*, FACW). The vegetation within Wetland A was primarily hydrophytic consisting of Oregon ash (*Fraxinus latifolia*, FACW), red-osier dogwood (*Cornus sericea*, FACW), panicled bulrush (*Scirpus microcarpus*, OBL), Himalayan blackberry, and reed canarygrass.

The indicator status, following the scientific names, indicates the likelihood of the species to be found in wetlands. Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) - occur almost always under natural conditions in wetlands.
- **FACW** (facultative wetland) - usually occur in wetlands, but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands.
- **FACU** (facultative upland) - usually occur in non-wetlands, but occasionally found in wetlands.
- **UPL** (obligate upland) - occur almost always under natural conditions in non-wetlands.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

SOILS

As referenced on the U.S.D.A. Natural Resources Conservation Service (NRCS) website, the onsite soils are mapped as (OID) Olympic clay loam, 8 to 20 percent slopes, (OmE) Olympic stoney clay loam, 3 to 30 percent slopes, (ThA) Tisch silt loam, 0 to 3 percent slopes, (VaB) Vader silt loam, 3 to 8 percent slopes, and (VaC) Vader silt loam, 8 to 15 percent slopes (NRCS 2020) (Figure 4). Olympic clay loam and Olympic stoney clay loam are characterized as well-drained soils formed from residuum and colluvium from igneous rock on mountain terraces. Tisch silt

loam is characterized as poorly drained formed from volcanic ash, alluvium and diatomaceous earth in depressions. Vader silt loams are characterized as well-drained formed from residuum and colluvium from sandstone with a mixture of volcanic ash in the upper part. NRCS rates all soils onsite as non-hydric except for (ThA) Tisch silt loam which is rated as a hydric soil (NRCS 2019). Mapped hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic wetland vegetation, and hydric soils must all be present to classify an area as a wetland. Wetland soils onsite met hydric soil indicator (F6) Redox Dark Surface.

HYDROLOGY

Wetland A lies in a depressional valley that slopes from north to south with Stream 1 flowing through the center. Once Stream 1 leaves Wetland A it flows southwest through a narrow ravine for approximately 1,200 feet before flowing through a culvert under SE Ledbetter Road and into Lacamas Lake. Stream 2 also provides input to Wetland A as it originates in the north central portion of the site and flows northeast for approximately 1,000 feet before converging with Stream 1 (Figure 2). Although Wetland A slopes from north to south and drainage is unidirectional, there are depressions that total more than 10 percent of the wetland unit. Wetland hydrology likely comes from hillside runoff, input from both Streams 1 and 2, and precipitation. Hydroperiods of the wetland include seasonally flooded and saturated only. Due to the site visit occurring during the dry season, hydrology indicators present within Wetland A consisted of only secondary indicators; (B10) Drainage Patterns, (D2) Geomorphic Position, and (D5) FAC-Neutral Test. The two new wetland determination data sheets can be found in Appendix A.

NATIONAL AND LOCAL WETLAND INVENTORIES

The National Wetland Inventory (NWI) does not depict wetlands onsite however, Clark County GIS indicates the presence of wetlands in the vicinity of Wetland A (Figure 5). ELS agrees with the Clark County mapping. Wetland inventory maps are typically used to gather wetland information about a region and due to the large scale necessary for regional mapping are limited in accuracy for localized analyses.

CRITICAL AREAS SUMMARY

Wetland A

Wetland A is a Category III, sloped and depressional, forested wetland totaling approximately 2.46 acres in the northeastern portion of the site (Figure 2). The wetland was bordered by an obvious change in elevation and vegetation. The vegetation within Wetland A was primarily hydrophytic consisting of Oregon ash, red-osier dogwood, panicled bulrush, Himalayan blackberry, and reed canarygrass. Wetland hydrology likely comes from hillside runoff, input from both Streams 1 and 2, and precipitation. Hydroperiods of the wetland include seasonally flooded and saturated only. Stream 1 also forms an unconstricted, permanently flowing outlet to the wetland.

Wetland A had originally been rated by ELS in 2013 as a Category II, riverine wetland using the 2004 wetland rating system. The current rating of Wetland A based on the Department of Ecology's 2014 *Wetland Rating System for Western Washington* (Rating System), using the depressional hydrogeomorphic (HGM) classification, is a Category III scoring a total of 18 points; 7 points for water quality functions, 4 points for hydrologic functions, and 7 points for habitat

functions (Appendix B). According to the CCO *Table 16.53.040-3*, the designated buffer width for a proposed high land use intensity for a Category III wetland with a habitat score of 7 is 150 feet.

Streams

Stream 1 is an unnamed non fish-bearing perennial stream (Type Np) that originates in the offsite portion of the wetland to the north and runs in a southwesterly direction through the site to a culvert located under SE Leadbetter Road and into Lacamas Lake. The stream channel was approximately four inches wide and contained three inches of water at the time of the site visit. Stream 2 is an unnamed non fish-bearing seasonal stream (Type Ns) that originates at the central northern boundary of the site and flows northeast for approximately 1,000 feet before flowing into Stream 1. Stream 3 is an unnamed non fish-bearing seasonal stream (Type Ns) that originates offsite and flows through the southeastern corner of the property and into a roadside ditch along the northside of SE Leadbetter Road. According to CCO *16.61.040(D)*, Type Np streams have a 50-foot buffer, while Type Ns streams have a 25-foot buffer.

Lacamas Lake

Lacamas Lake is located just south of SE Leadbetter Road. Lacamas Lake is a Type S Water of the State and according to CCO *16.61.040(D)* the standard riparian habitat buffer width is 150 feet however, the buffer is entirely functionally isolated from the site by SE Leadbetter Road. As a Type S Water, Lacamas Lake is a shoreline of the state and is subject to the regulations of the *Camas Shoreline Master Program* (SMP 2015). Shoreline jurisdiction extends for 200 feet landward from the ordinary high water mark (OHWM) of Lacamas Lake (Figure 2). The shoreline area is designated as Urban Conservancy (UC). According to *Table 6-1* of the SMP, residential structures are permitted, and secondary or public access roads are permitted as a conditional use. The proposed project will require a Shoreline Substantial Development Permit (SSDP) to address development within shoreline jurisdiction.

Table 1. Summary of Critical Areas Onsite.

Critical Area	Designation	Buffer Width (feet)
Wetland A	Category III ¹ /Forested, Emergent ² /Depressional ³	150 ⁴
Wetland B	Category III ¹ /Forested, Emergent ² /Depressional ³	150 ⁴
Wetland C	Category III ¹ /Forested, Emergent ² /Depressional ³	150 ⁴
Wetland D	Category III ¹ /Forested, Emergent ² /Depressional ³	150 ⁴
Lacamas Lake	Type S (Shoreline) Water of the State	150 ⁵ Shoreline Jurisdiction – 200 ⁶

¹Hruby 2014

²Cowardin et al. 1979

³NRCS 2008

⁴CCO *Table 16.53.040-3*

⁵CCO *16.61.040(D)*

⁶SMP 2.1(1)

BUFFER MODIFICATIONS

Buffer Reduction

According to CCO *16.53.050(C)(1)(a)*, wetland buffers recommended for high intensity land uses can be reduced to those recommended for moderate intensity land uses if certain criteria are met.

The applicant is proposing to reduce the standard buffer width on the southern side of the wetland in the vicinity of the proposed subdivision from the high intensity land use width of 150 feet to the moderate intensity land use width of 110 feet as listed in CCO Table 16.53.040-3. The following is an excerpt from the code listing the criteria required to authorize buffer reduction in italics with a description of how the criteria will be met in regular font.

16.53.050(C)

1. Buffer Reduction Incentives. Standard buffer widths may be reduced under the following conditions, provided that functions of the post-project wetland are equal to or greater after use of these incentives.

Wetland functions will not be reduced by the proposed project; see below.

a. Lower Impact Land Uses. The buffer widths recommended for proposed land uses with high-intensity impacts to wetlands can be reduced to those recommended for moderate-intensity impacts if both of the following criteria are met:

i. A relatively undisturbed, vegetated corridor at least one hundred feet wide is protected between the wetland and any other priority habitats that are present as defined by the Washington State Department of Fish and Wildlife; and

Only the buffer on the southern and eastern sides of the wetland are proposed for reduction leaving the northwestern buffer untouched. Stream 1 flows through the center of Wetland A with its 50-foot designated riparian habitat buffer being entirely encompassed within the wetland. The remaining area of buffer to the south and east of the wetland, Wetland A, and the 150 foot buffer on the northwestern side of the wetland measure an average of approximately 400 feet across for the length of Wetland A (~750 feet). This area will remain vegetated and undisturbed which will protect the wetland functions that currently exist. The buffer boundary adjacent to the proposed subdivision will be protected by fencing that is a minimum of 42 inches in height and comprised of either vinyl-coated chain link or wooden split rail as approved by the City of Camas (City). Furthermore, signs measuring 12 by 18 inches reading, "Wetland and Buffer Area – Retain in a natural state." will be posted along the fencing on 6-foot high green steel posts at an interval of one per lot per CCO 16.53.040(C)(2). Additionally, the area between Wetland A and Stream 2 will be entirely avoided by this proposed project. This area is heavily forested by a mix of mature deciduous and coniferous trees with a dense understory of upland shrubs and extends for at least 750 feet from Wetland A to Stream 2 for at least 450 feet from the northern property boundary to Stream 1 (Figure 3). Due to the size of the remaining undisturbed, vegetated corridor comprised of Wetland A, Stream 1, and Stream 2, exceeding 100 feet in width in all directions, this criterion is met.

ii. Measures to minimize the impacts of the land use adjacent to the wetlands are applied, such as infiltration of stormwater, retention of as much native vegetation and soils as possible, direction of noise and light away from the wetland, and other measures that may be suggested by a qualified wetland professional.

The majority of the stormwater that is created by residential lots will be directed to the proposed stormwater pond for detention and treatment before being discharged to a dispersion trench along the outer edge of the wetland buffer. Lots directly adjacent to the wetland buffer will infiltrate directly to the dispersion trenches. All stormwater will be

discharged at pre-development rates so that the wetland does not lose hydrology. The area proposed for buffer reduction was previously logged in 2015 so the native vegetation that remains consists primarily of herbaceous species with a few scattered shrubs. All remaining mature trees that do not pose hazards to the residential dwellings will be retained. No foreign soils will be brought in during site prep. Additionally, street and house lights and any outdoor speakers will be directed away from the wetland to the greatest extent practicable. Due to the application of these measures, this criterion is met.

Buffer Averaging

According to CCO 16.53.050(C)(2), wetland buffers can be averaged as well as reduced to further avoid impacts. The applicant is proposing buffer averaging to further reduce the 110-foot buffer width on the southern side of the wetland in the vicinity of the proposed subdivision and increase the buffer width at the westernmost portion of the wetland. The following is an excerpt from the code listing the criteria required to authorize buffer averaging in italics with a description of how the criteria will be met in regular font.

16.53.050(C)

2. Buffer Averaging. Averaging buffers is allowed in conjunction with any of the other provisions for reductions in buffer width (listed in subsection (C)(1) of this section) provided that minimum buffer widths listed in subsection (C)(1)(c) of this section are adhered to. The community development department shall have the authority to average buffer widths on a case-by-case basis, where a qualified wetlands professional demonstrates, as part of a critical area report, that all of the following criteria are met:

a. The total area contained in the buffer after averaging is no less than that contained within the buffer prior to averaging;

The area of buffer to be decreased on the southeastern side of Wetland A totals 0.262 acres (11,417 square feet). The area of buffer to be increased on the westernmost portion of Wetland A totals the same amount, 0.262 acres (11,417 square feet) (Figure 3). Since the total area contained in the buffer after averaging is no less than that within the buffer prior to averaging, this criterion is met.

b. Decreases in width are generally located where wetland functions may be less sensitive to adjacent land uses, and increases are generally located where wetland functions may be more sensitive to adjacent land uses, to achieve no net loss or a net gain in functions; and

The area proposed for buffer decrease was previously logged in 2015 so the native vegetation that remains consists primarily of herbaceous species with a few scattered shrubs. Due to the lack of vegetation in this area, it is less sensitive to adjacent residential lands uses. The area proposed for buffer increase is relatively undisturbed consisting of mature trees. The location of this increased buffer area will also protect the riparian functions of Stream 1 by creating a wider vegetated corridor between Wetland A and Stream 1 (Figure 3). This area would be much more sensitive to functional loss if residential development were to encroach. The decreased and increased buffer areas were located to achieve a net gain in habitat function; therefore, this criterion is met.

c. The averaged buffer, at its narrowest point, shall not result in a width less than seventy-five percent of the required width, provided that minimum buffer widths shall never be less than fifty feet for all Category I, Category II, and Category III wetlands, and twenty-five feet for all Category IV wetlands.

The required buffer width after reduction is 110 feet. 75 percent of 110 feet would be 82.5 feet. The averaged buffer at its narrowest point is 82.5 feet (Figure 3). Due to the averaged buffer not resulting in a width less than 75 percent required width, this criterion is met.

LIMITATIONS

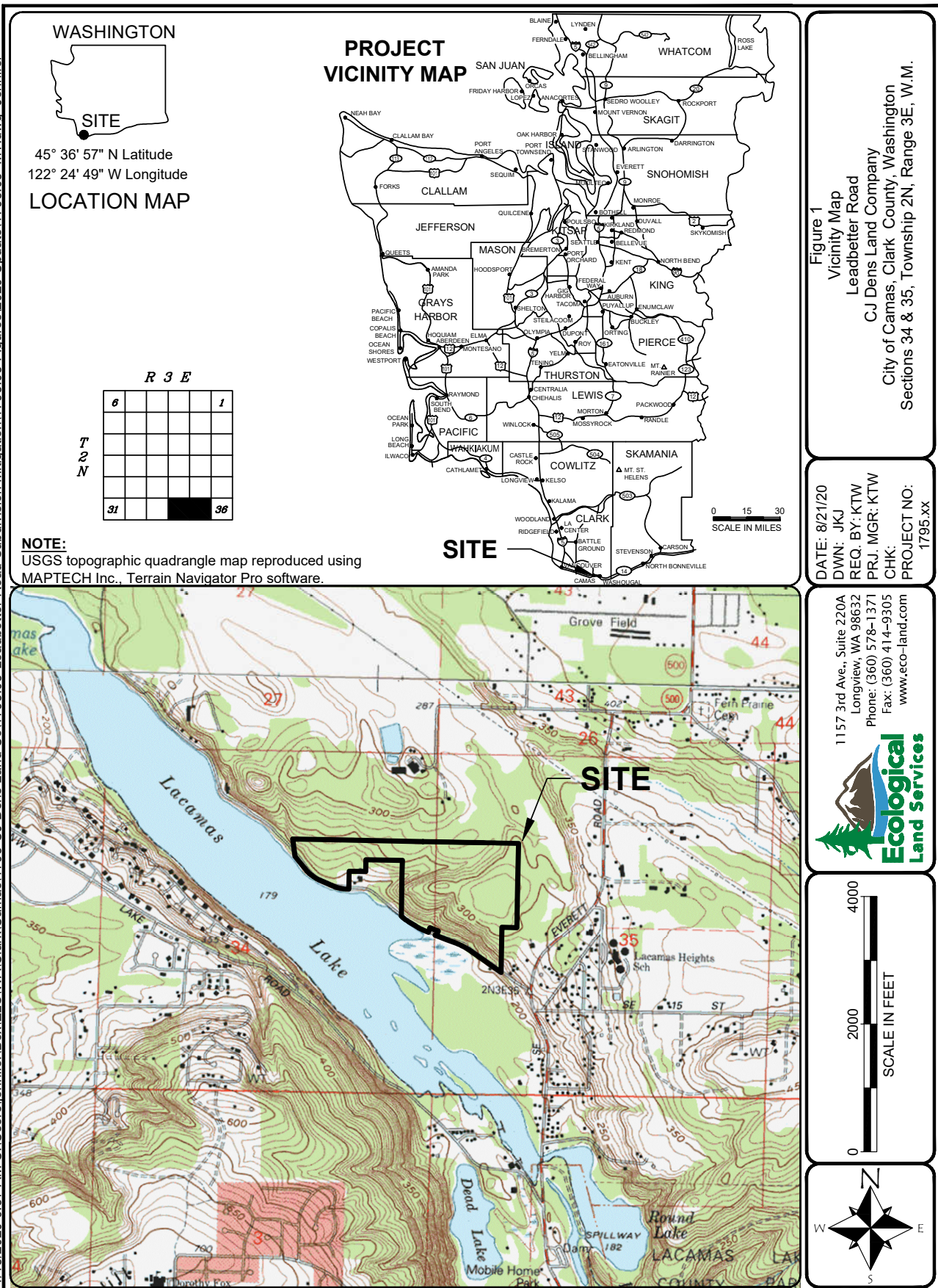
ELS bases the above listed determinations and conclusions on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with the conclusions of this report. However, this should be considered a preliminary report and should be used at your own risk until it has been reviewed and approved in writing by the appropriate regulatory agencies.

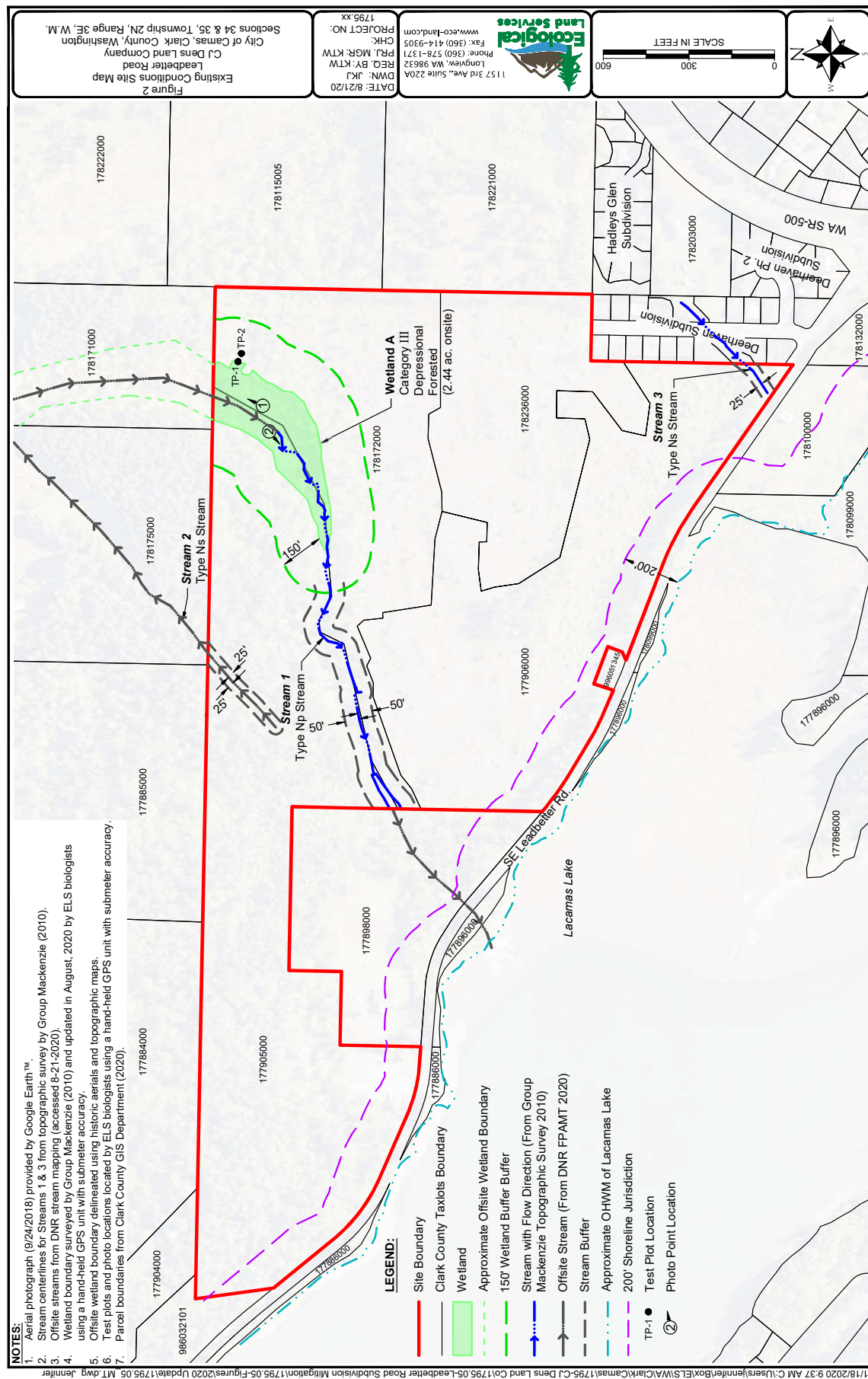
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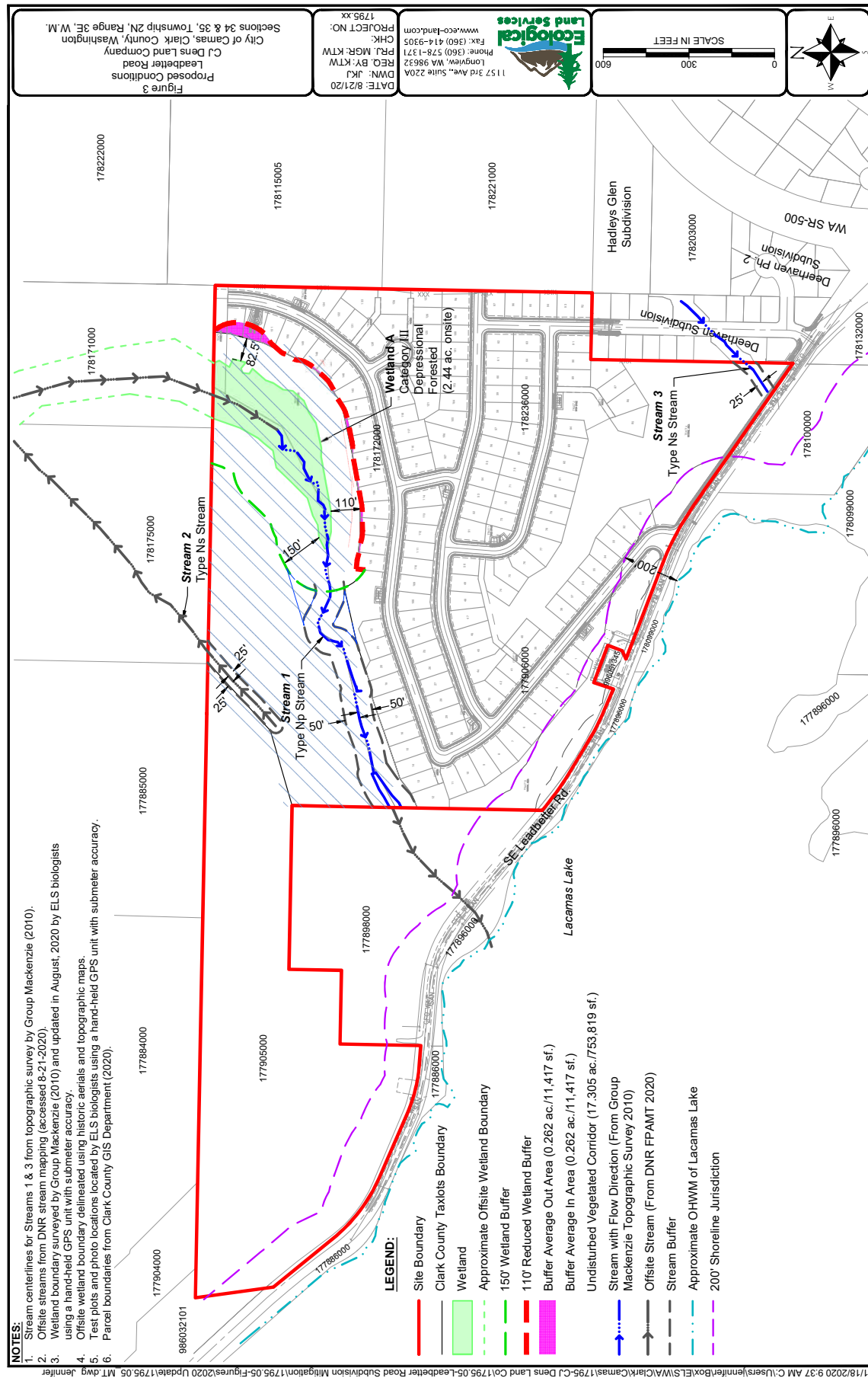
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- U.S. Fish and Wildlife Service (USFWS). 1988. *National Wetlands Inventory*. Accessed online November 2020. <https://www.fws.gov/wetlands/data/mapper.html>.

FIGURES & PHOTOPLATES

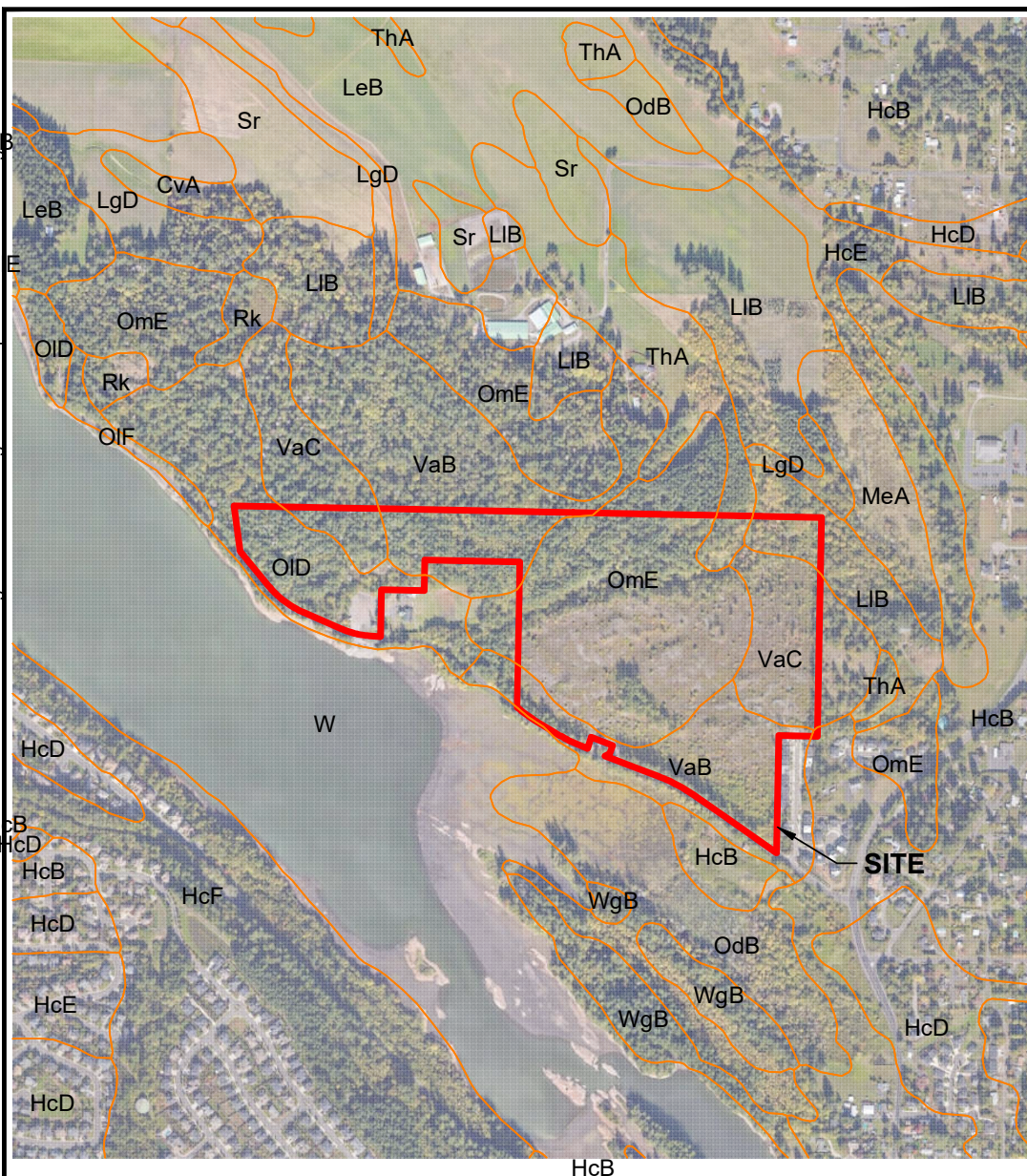
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LEGEND:

- Site Boundary
- OID** Olympic clay loam, 8 to 20 percent slopes. Not hydric.
- OmE** Olympic stoney clay loam, 3 to 30 percent slopes. Not hydric.
- ThA** Tisch silt loam, 0 to 3 percent slopes. Hydric.
- VaB** Vader silt loam, 3 to 8 percent slopes. Not hydric.
- VaC** Vader silt loam, 8 to 15 percent slopes. Not hydric.

NOTE(S):

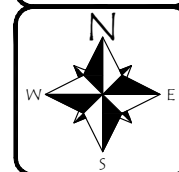
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Figure 4

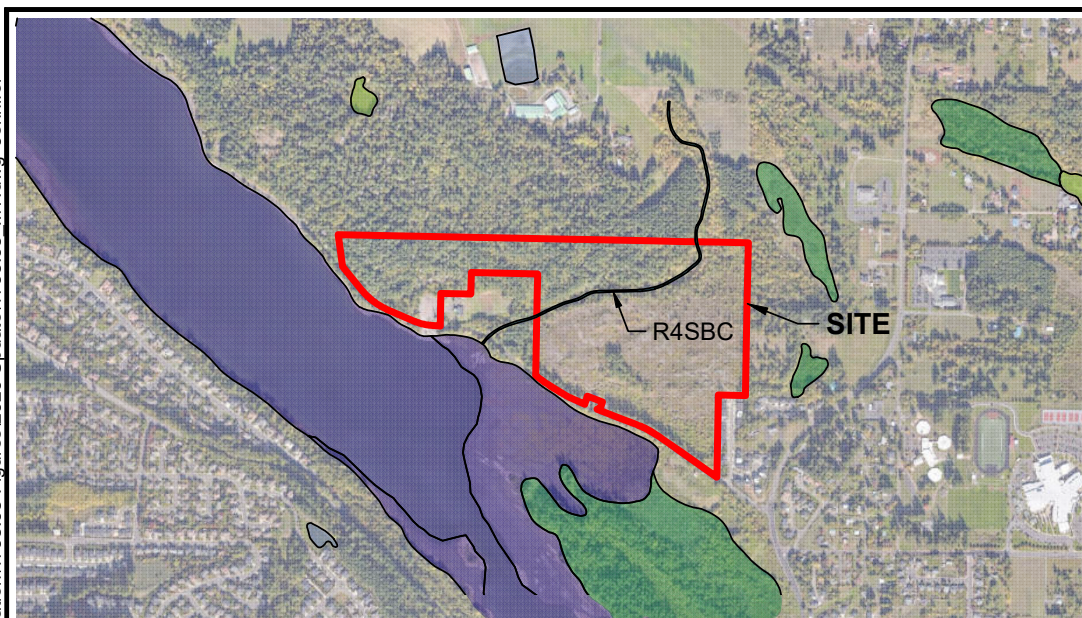
NRCS Soil Survey Map
 Leadbetter Road
 CJ Dens Land Company
 City of Camas, Clark County, Washington
 Sections 34 & 35, Township 2N, Range 3E, W.M.

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Mapped wetlands indicated onsite by US Fish & Wildlife Service.

LEGEND:		R4SBC	Riverine, intermittent, streambed, seasonally flooded.
	Site Boundary		
	Riverine		
	Freshwater Emergent Wetland		Freshwater Pond
	Freshwater Forested/Shrub Wetland		Lake

NOTE(S):

- Map provided online by US Fish & Wildlife Service at web address: <https://www.fws.gov/wetlands/data/Mapper.html>



Mapped wetlands indicated onsite by Clark County.

LEGEND:	
	Site Boundary
	Wetlands Presence

NOTE: Map provided online by Clark County, Washington at web address: <https://gis.clark.wa.gov/mapsonline/>

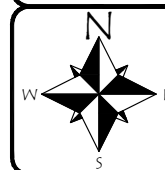
Figure 5

National & Clark County Wetlands Inventories
Leadbetter Road
CJ Dens Land Company
City of Camas, Clark County, Washington
Sections 34 & 35, Township 2N, Range 3E, W.M.

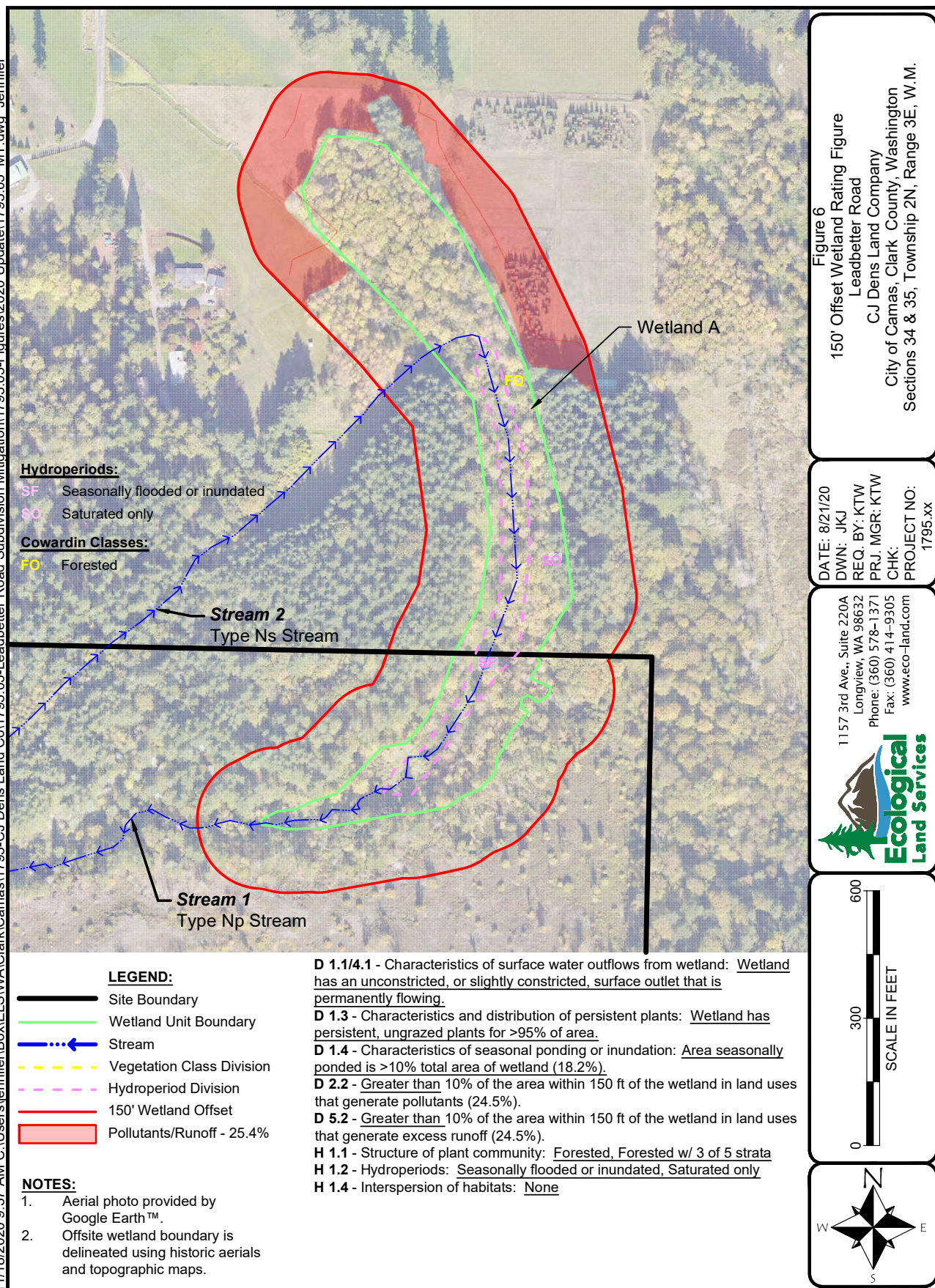
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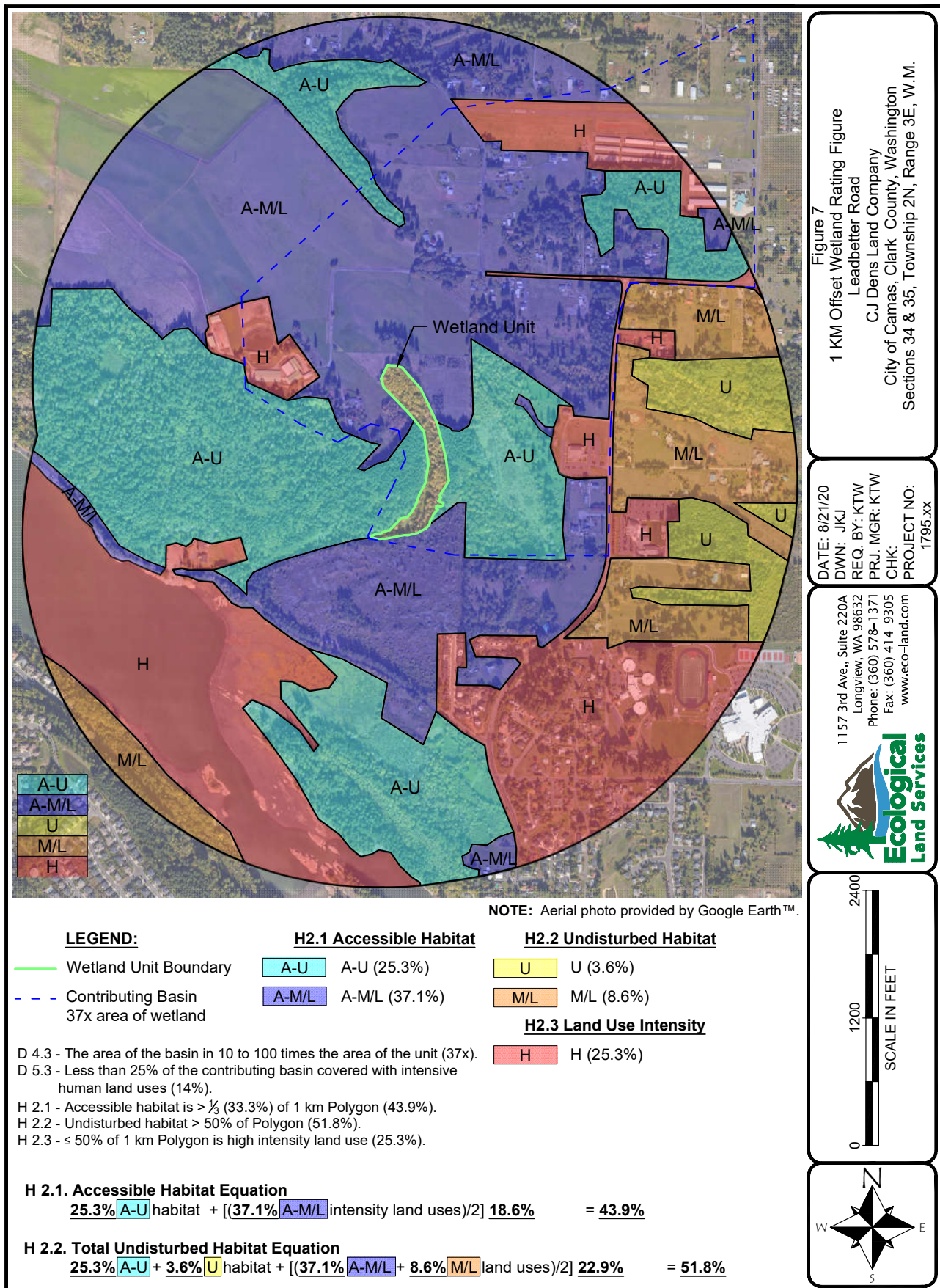
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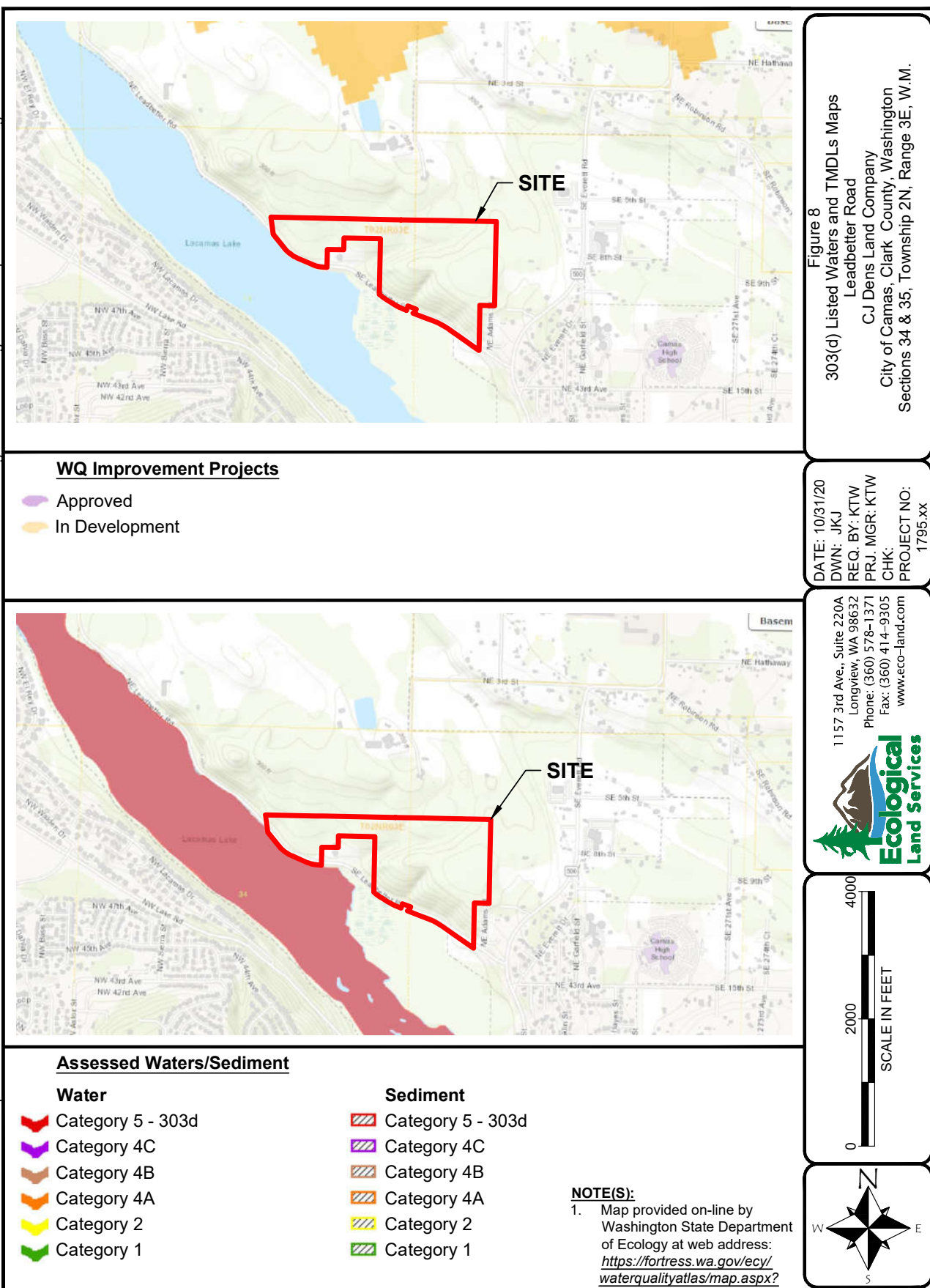


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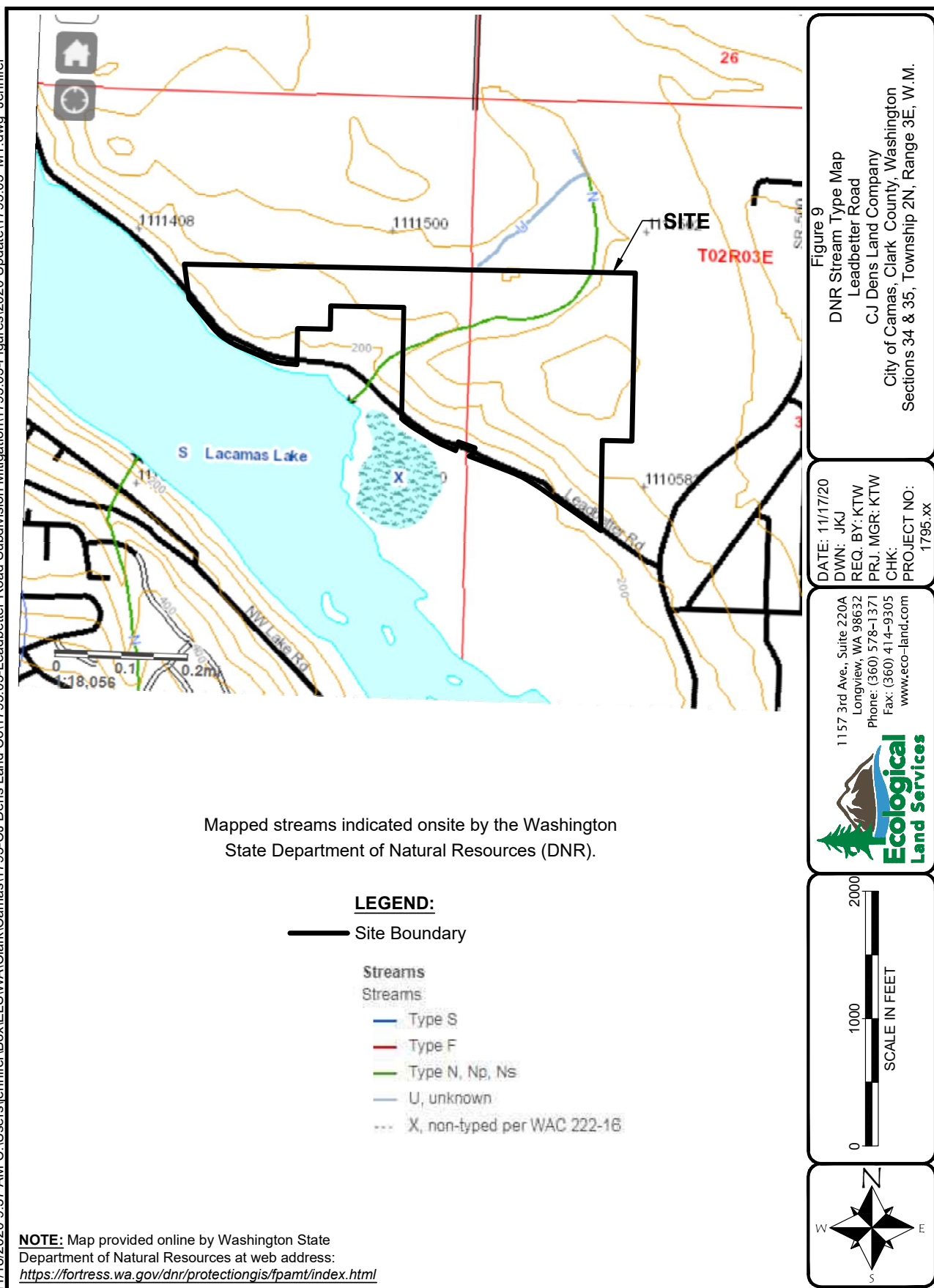




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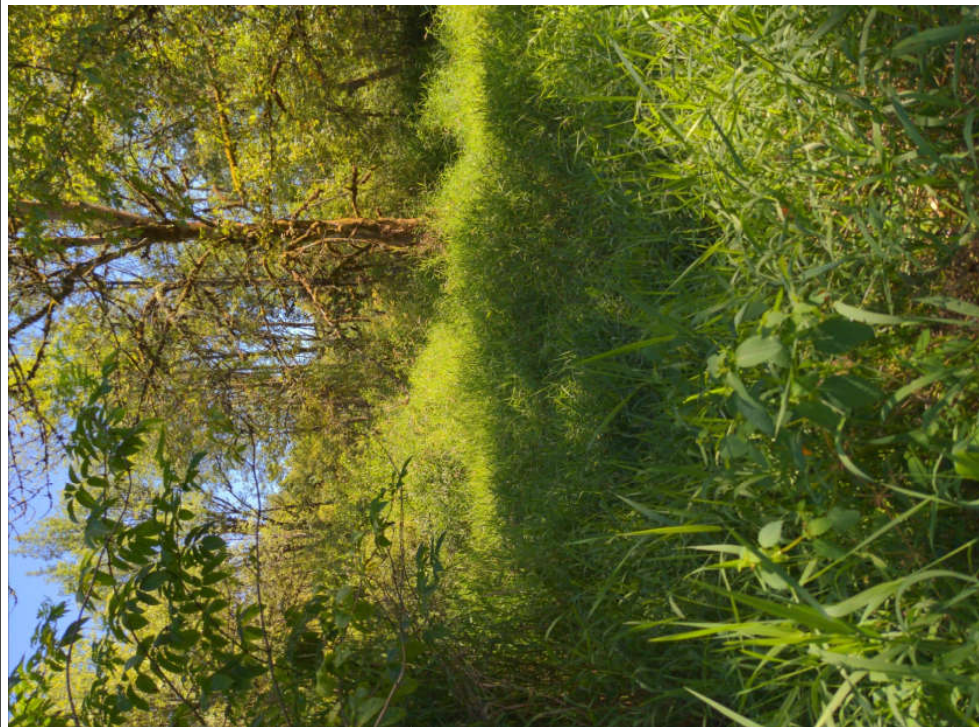


Photo 1. This photo depicts the portion of Wetland A that was added during the 2020 delineation. Facing east from the centerline of Stream 1.



Photo 2. Taken from near Stream 1 facing upstream to the northwest. The red arrows represent the stream with flow direction.



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DATE: 9/30/20
DWN: KT
PRJ. MGR: KT
PROJ.#: 1795.03

Photoplate 1
Site Photos
Leadbetter Road
Camas, Washington

APPENDIX A: WETLAND DETERMINATION DATA FORMS

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

Project/Site: Leadbetter Road City/County: _____ Sampling Date: _____
Lawson State: WA Sampling Point: TP-1
Investigator(s): _____ Section, Township, Range: 35, 2N, 3E
Terraces Local relief: Concave _____ %
Subregion (LRR): _____ Lat: 45.618 -122.411 Datum: NAD83
Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
year? Yes ☒ No ☐ (If no, explain Remarks.)

☐ Soil ☐ or Hydrology ☐ ☒ No ☐
☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) ☒ No ☐

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: This test plot was located in the northeastern portion of the site within Parcel #17817200. This wetland test plot was located along the northeastern boundary of Wetland A onsite. The vegetation in this test plot consisted of trees, scrub/shrub, herbaceous, and woody vine species. This test plot met all three wetland indicators with 100% hydrophytic vegetation, soils with a Redox Dark Surface (F6), and the presence of secondary hydrologic indicators; Drainage Patterns (B10), Geomorphic Position (D2), and a positive FAC-Neutral Test (D5).	

VEGETATION (Use scientific names)

(Plot size: <u>30</u> ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
1. <u>Fraxinus latifolia</u>	40%	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	%			
3. _____	%			
4. _____	%			
Total Cover: <u>40%</u>				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>5</u> ft. radius)				Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ FACW species _____ FAC species _____ = _____ FACU species _____ UPL species _____ Column Totals: _____ (B) Prevalence Index = B/A = _____
1. <u>Cornus sericea</u>	25%	yes	FACW	
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
Total Cover: <u>25%</u>				
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is 3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	90%	yes	FACW	
2. _____	%			
3. _____	%			
4. _____	%			
5. _____	%			
6. _____	%			
7. _____	%			
8. _____	%			
Total Cover: <u>90%</u>				
<u>(Plot size: <u>30</u> ft radius)</u>				
1. <u>Rubus armeniacus</u>	15%	yes	FAC	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	%			
Total Cover: <u>15%</u>				
% Bare Ground in Herb Stratum % _____				
Remarks: The hydrophytic vegetation criterion is met due to 100% of the dominant vegetation within the test plot having either OBL, FACW, or FAC indicator statuses.				

Sampling Point: TP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-6	10YR 3/2	98%	10YR 4/6	2%	C	PL	silt loam	
6-15	10YR 3/1	93%	10YR 4/6	7%	C	PL	clay loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
----------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------

Remarks: The hydric soil indicator Redox Dark Surface (F6) was met due to a matrix value of 3 and a chroma of 1 with more than 2 percent redox concentrations found as soft masses.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (one or more required)
Primary Indicators (min. of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water Stained Leaves (B9) (except MLRA 1, 2, 4A, & 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	
		<input type="checkbox"/> (MLRA 1, 2, 4A, and 4B) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D4)
<input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
aerial photos, previous inspections), if available:		
The following secondary indicators were present within the t utual Test (D5).		

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

Project/Site: Leadbetter Road City/County: _____ Sampling Date: _____
Lawson State: WA Sampling Point: TP-2
Investigator(s): _____ Section, Township, Range: 35, 2N, 3E
Terraces Local relief: Convex _____ %
Subregion (LRR): _____ Lat: 45.618 -122.410 Datum: NAD83
Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: None
year? Yes ☒ No ☐ (If no, explain Remarks.)

☐ Soil ☐ or Hydrology ☐ ☒ No ☐
☐ 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: This test plot was located in the northeastern portion of the site within Parcel #17817200. This upland test plot was located along the northeastern boundary of Wetland A onsite. The vegetation in this test plot consisted of trees, scrub/shrub, herbaceous, and woody vine species. This test plot did not meet any of the wetland indicators, therefore it does not meet the criteria of being wetland.	

VEGETATION (Use scientific names)

_____ (Plot size: <u>30</u> ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
1. _____	25%	yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. _____	%			
3. _____	%			
4. _____	%			
Total Cover: <u>25%</u>				
Sapling/Shrub Stratum (Plot size: <u>5</u> ft. radius)				
1. <u>Acer macrophyllum</u>	20%	yes	FACU	Prevalence Index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ FACW species _____ FAC species _____ = _____ FACU species _____ UPL species _____ Column Totals: _____ (B) Prevalence Index = B/A = _____
2. <u>Rubus spectabilis</u>	10%	yes	FAC	
3. _____	%			
4. _____	%			
5. _____	%			
Total Cover: <u>30%</u>				
Herb Stratum (Plot size: <u>5</u> ft radius)				
1. <u>Rubus ursinus</u>	30%	yes	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is <u>3.0</u> <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants <input type="checkbox"/> Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology Must be present, unless disturbed or problematic.
2. <u>Polystichum munitum</u>	20%	yes	FACU	
3. <u>Phalaris arundinacea</u>	15%	no	FACW	
4. <u>Scirpus microcarpus</u>	10%	no	OBL	
5. <u>Pteridium aquilinum</u>	10%	no	FACU	
6. _____	%			
7. _____	%			
8. _____	%			
Total Cover: <u>85%</u>				
_____ (Plot size: <u>30</u> ft radius)				
1. <u>Rubus armeniacus</u>	15%	yes	FAC	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	%			
Total Cover: <u>15%</u>				
% Bare Ground in Herb Stratum _____ %				
Remarks: The hydrophytic vegetation criterion is NOT met due to only 33% of the dominant vegetation within the test plot having either OBL, FACW, or FAC indicator statuses.				

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc		
0-6	10YR 3/3	100%		%			loam	
6-15	10YR 3/3	50%		%			loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

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

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

Indicators of hydrophytic vegetation and Wetland hydrology must be present

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
----------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------

Remarks: There was no evidence of hydric soils within this test plot.

HYDROLOGY

Wetland Hydrology Indicators:		condary Indicators or more required)
Primary Indicators (min. of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, & 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D4)
<input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches):	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

APPENDIX B: WETLAND RATING FORM

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: August 10, 2020
 Rated by KT Wills Trained by Ecology? Yes Date of training 9/2016
 HGM Class used for rating Depressional Wetland has multiple HGM classes? X Y N

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

Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <u>M</u> L	H M <u>L</u>	H M <u>L</u>	
Landscape Potential	H <u>M</u> L	H <u>M</u> L	<u>H</u> M L	
Value	<u>H</u> M L	H M <u>L</u>	<u>H</u> M L	TOTAL
Score Based on Ratings	7	4	7	18

**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	<u>N/A</u>

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

1 km Polygon: Area that extends 1 km from entire wetland edge - including	I 2.1, H 2.2, H 2.3	4

Riverine Wetlands

Banded depressions	.1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	.2.4	
Plant cover of trees, shrubs, and herbaceous plants	1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	.4.1	
Map of the contributing basin	.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	I 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	.3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	.3.2, R 3.3	

Lake Fringe Wetlands

map of:	to answer questions:	fig #
Lowland plant classes	.1.1, 1.2.1, 1.1.1.1, 1.1.1.2	
Wetland boundary, stream, and riparian zone	.1.1	
polygons for accessible habitat and undisturbed habitat		

Slope Wetlands

<i>can be added to figure above)</i>		

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.

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
riverine	riverine
depression	depression
within boundary of depression	
class of freshwater wetland	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.*

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. <u>Characteristics of surface water outflows from the wetland:</u> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). <div style="text-align: right;">points = 3</div> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. <div style="text-align: right;">points = 2</div> <u>Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing</u> <div style="text-align: right;">points = 1</div>	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		
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> <u>Wetland has persistent, ungrazed, plants > 95% of area</u> <div style="text-align: right;">points = 5</div> Wetland has persistent, ungrazed, plants > 1/2 of area <div style="text-align: right;">points = 3</div> Wetland has persistent, ungrazed plants > 1/10 of area <div style="text-align: right;">points = 1</div> Wetland has persistent, ungrazed plants < 1/10 of area <div style="text-align: right;">points = 0</div>	5	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> Area seasonally ponded is > 1/2 total area of wetland <div style="text-align: right;">points = 4</div> Area seasonally ponded is > 1/4 total area of wetland <div style="text-align: right;">points = 2</div> <u>Area seasonally ponded is < 1/4 total area of wetland</u> <div style="text-align: right;">points = 0</div>	0	
Total for D 1		Add the points in the boxes above

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


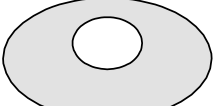

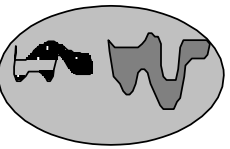
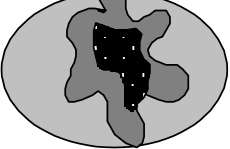
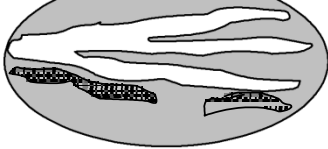
D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 <u>No = 0</u>	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<u>Yes = 1</u> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 <u>No = 0</u>	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?	Yes = 1 <u>No = 0</u>	0
Source		
Total for D 2		Add the points in the boxes above

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 3.1. 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?	<u>Yes = 1</u> No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	<u>Yes = 1</u> No = 0	
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	Yes = 2 <u>No = 0</u>	0
Total for D 3		Add the points in the boxes above

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

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
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 <u>Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0</u>		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 <u>Marks of ponding less than 0.5 ft (6 in) points = 0</u>		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 <u>The area of the basin is 10 to 100 times the area of the unit points = 3</u> 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		1
Rating of Site Potential If score is: <u>12-16</u> = H <u>6-11</u> = M <u>X</u> <u>0-5</u> = 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 <u>No = 0</u>		0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? <u>Yes = 1</u> 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 <u>No = 0</u>		0
Total for D 5		1
Rating of Landscape Potential If score is: <u>3</u> = H <u>X</u> <u>1 or 2</u> = M <u>0</u> = L Record the rating on the first page		
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 <u>There are no problems with flooding downstream of the wetland. points = 0</u>		
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		0
Total for D 6		0
Rating of Value If score is: <u>2-4</u> = H <u>1</u> = M <u>X</u> <u>0</u> = L Record the rating on the first page		

- Indicators that site functions to provide important habitat	
<p>H 1.1. Structure of plant community: <i>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.</i></p> <p> <input type="checkbox"/> Aquatic bed 4 structures or more: points = 4 <input type="checkbox"/> Emergent 3 structures: points = 2 <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) 1 structure: points = 0 <i>If the unit has a Forested class, check if:</i> <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon </p>	1
<p>H 1.2. Hydroperiods</p> <p>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 (<i>see text for descriptions of hydroperiods</i>).</p> <p> <input type="checkbox"/> Permanently flooded or inundated 4 or more types present: points = 3 <input checked="" type="checkbox"/> Seasonally flooded or inundated 3 types present: points = 2 <input type="checkbox"/> Occasionally flooded or inundated 2 types present: points = 1 <input checked="" type="checkbox"/> Saturated only 1 type present: points = 0 <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake Fringe wetland 2 points <input type="checkbox"/> Freshwater tidal wetland 2 points </p>	1
<p>H 1.3. Richness of plant species</p> <p>Count the number of plant species in the wetland that cover at least 10 ft². <i>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</i></p> <p> <input checked="" type="checkbox"/> If you counted: > 19 species points = 2 <input type="checkbox"/> 5 - 19 species points = 1 <input type="checkbox"/> < 5 species points = 0 </p>	2
<p>H 1.4. Interspersion of habitats</p> <p>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. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  None = 0 points </div> <div style="text-align: center;">  Low = 1 point </div> <div style="text-align: center;">  Moderate = 2 points </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  All three diagrams in this row are HIGH = 3points </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>	0

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		2
Total for H 1	Add the points in the boxes above	6

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). <i>Calculate:</i> % undisturbed habitat $25.3 + [(\% \text{ moderate and low intensity land uses}) 37.1 / 2] 18.55 = 43.85\%$ 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		3
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. <i>Calculate:</i> % undisturbed habitat $28.9 + [(\% \text{ moderate and low intensity land uses}) 45.7 / 2] 22.85 = 51.75\%$ 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		3
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		0
-		

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

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 <input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page) <input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) <input type="checkbox"/> It is mapped as a location for an individual WDFW priority species <input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources <input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan 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		2

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

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	AGNRV
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
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	Cat. I
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 <i>Spartina</i> , see page 25) — At least ¼ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed 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	Cat. I Cat. 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/datasetsearch/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	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> 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	Cat. I

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1</u> contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — 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). <p>Yes = Category I No = Not a forested wetland for this section</p>	<p>Cat. I</p>
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — 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 (<i>needs to be measured near the bottom</i>) <p>Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> — 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 ft²) <p>Yes = Category I No = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> — 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 <p>Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Cat. III</p> <p>Cat. IV</p>
<p>If you answered No for all types, enter "Not Applicable" on summary form.</p>	<p>N/A</p>

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