

ATTACHMENT 6 - Critical Areas Report Revised, The Watershed Company

CRITICAL AREAS REPORT

Maple Valley Asphalt Facility

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CRITICAL AREAS REPORT

MAPLE VALLEY ASPHALT FACILITY

1 INTRODUCTION

1.1 Background and Purpose

The purpose of this report is to document potential critical area impacts associated with the proposed project to redevelop the former Sunset Materials retail landscape operation along SE Renton-Maple Valley Road (SR 169) (Parcel # 1923069026) into an asphalt manufacturing facility and to improve traffic flow in the immediate area of the site through the installation of acceleration and deceleration lanes along SR 169. This report is written to satisfy the requirements for critical areas report contents per King County Code (KCC) 21A.24.110.

This June 2020 revision to the Critical Areas Report documents updates to the mitigation plan in response to King County comments and associated site plan changes.

1.2 Setting

The subject parcel is located at 18825 SE Renton-Maple Valley Road in unincorporated King County (Figure 1). The parcel is located outside of a designated Urban Growth Area (UGA). The parcel is zoned Industrial.

The subject parcel is located within the Lower Cedar River Drainage Basin of Watershed Resource Inventory Area (WRIA) 8 Cedar-Sammamish; Section 19, Township 23N, Range 06E. The subject property is bordered to the north by SR 169; the east, south and west sides of the property are bordered by residential or undeveloped properties. The southern and eastern areas of the property are undeveloped, forested and are steeply sloped. At the time of our original site visit in 2017, the central part of the property included several sheds, workshops and concrete stalls that were used to store mulch, gravel and other materials. Those structures were later demolished or removed from the site by the former owner and operator. The site was in-use at the time of our original study but was vacant during our later visits.



Figure 1. Aerial view of subject parcel and vicinity map

1.3 Project Description

The applicant proposes to redevelop the Sunset Materials retail landscape operation into an asphalt manufacturing facility and to improve traffic flow in the immediate area of the site through the installation of acceleration and deceleration lanes along SR 169. Site preparation activities will involve remediation of historical petroleum handling operations leaking from underground storage tanks and general site grading. The project will include construction of an office, asphalt plant, materials storage areas, and stormwater control facilities within the parcel. In the right-of-way (ROW) along SR 169, the applicant will install acceleration and deceleration lanes, as well as stormwater drainage infrastructure. Stream and wetland buffer areas will be revegetated and enhanced as part of the proposed action.

2 METHODS

2.1 Review of existing documentation

Public-domain information was reviewed for this critical areas report. These sources include U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps, Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) and SalmonScape maps, Department of Natural Resources Forest Practices Application Mapping Tool (FPAMT) and Wetlands of High Conservation Value (WHCV) map, Natural Resource Conservation Service Web Soil Survey (WSS), and King County's GIS mapping website (iMAP).

2.2 Delineation and Classification

On January 10 and 12, 2017, ecologists Nell Lund, PWS, and Anna Hoenig visited the property located at 18825 SE Renton-Maple Valley Road in unincorporated King County (parcel number 1923069026) to screen for jurisdictional wetland and streams within a defined study area. Sarah Sandstrom, PWS, completed follow-up site visits to evaluate stream and wetland classifications on June 11 and July 23, 2018.

Encumbering boundaries of wetlands and streams within the developed area and the area within approximately 200 feet of the proposed site improvements in the subject parcel were delineated (Figure 2). Additionally, the adjacent ordinary high water mark (OHWM) of the Cedar River was delineated to identify the extent of shoreline jurisdiction (Figure 2). Wetlands adjacent to the Cedar River were noted; however, these wetlands were not delineated or rated because buffer functions are interrupted by SR 169 and more encumbering features are present on-site (see discussion in Section 4 below). The encumbering edge of on-site wetlands beyond 200 feet from the proposed site improvements, but adjacent to the SR 169 ROW were delineated and these wetlands were rated on July 23, 2018.

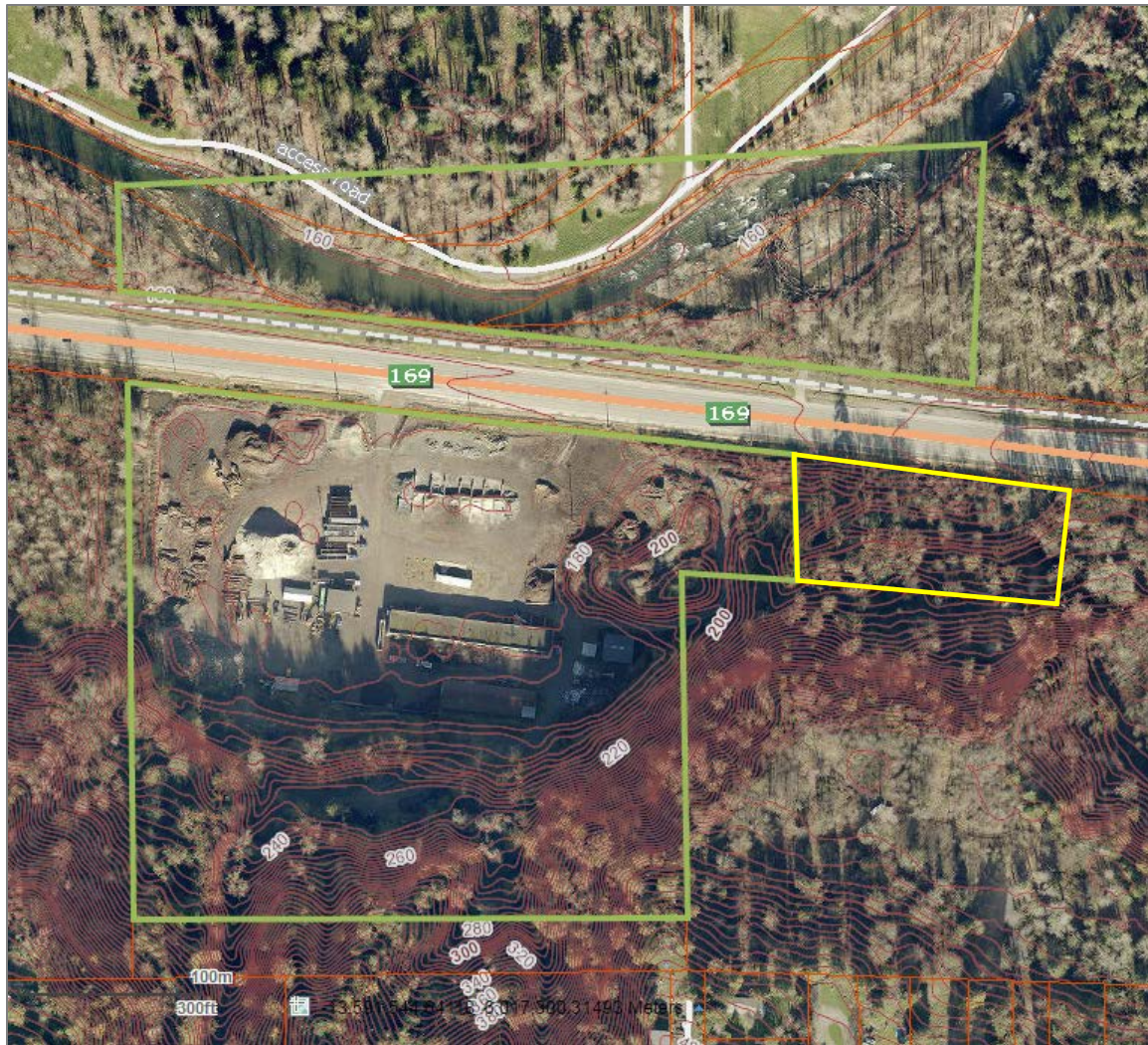


Figure 2. Study area outlined in green. Additional investigation area (July 23, 2018) outlined in yellow.

2.2.1 Wetlands

The study area was evaluated for wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement) (US Army Corps of Engineers [Corps] May 2010). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations along the wetland boundary to make the determination.

Identified wetlands within the property were classified using the *Washington State Wetland Rating System for Western Washington, Version 2* (Publication #04-06-025) (Rating System).

2.2.2 Streams

The study area was also evaluated for streams based on the presence or absence of an OHWM. Areas meeting the definition provided by the Washington Administrative Code (WAC) 220-16-030 and Revised Code of Washington (RCW) 90.58.030 were determined to be the OHWM edge. The OHWM edge was located by examining the bed and bank physical characteristics and vegetation to ascertain the water elevation for mean annual floods.

On-site streams were classified using the King County definition of aquatic areas (King County Code [KCC] 21A.24.355).

2.2.3 Wildlife Corridor

In addition to mapping resources, biologists evaluated the site for its potential to support priority wildlife species or habitats. This investigation included a visual survey of nests, species presence, and suitable habitat conditions.

3 EXISTING CONDITIONS

3.1 Site Description

Non-wetland areas within the study area consist mostly of developed/cleared and forested areas. The forested areas are located on steep slopes and contain vegetation commonly found in upland habitats, such as Douglas-fir, western red cedar, big-leaf maple, sword fern, salmonberry and trailing blackberry. Sampled soils were generally a chroma of 2 with no redoximorphic features. Non-wetland soils were dry at the time of our fieldwork. Wetland soils and hydrology were not present within these areas.

Immediately south of SR 169, on the northern side of the subject parcel, vegetation is primarily characterized by a strip of invasive, non-native plant species, dominated by Himalayan blackberry and reed canarygrass to the west and also including Scotch broom and other grasses to the east. A ditch runs along the site frontage with the highway. It drains into a 30-inch concrete culvert towards the west end, crossing under the highway to the river.

South of the SR 169 ditches, the weed-dominated area is patchy, irregular and transitions to a gravel and compacted dirt driving surface historically used for

construction equipment, staging, maneuvering, loading and short term parking. Weedy vegetation advantageously emerges and persists in infrequently-travelled portions of this area.

The mapped channel migration zone and floodplain of the Cedar River are limited to areas on the north side of SR 169. The subject property is located entirely outside of the mapped channel migration zone and 100-year floodplain.

3.2 Wetlands

Three streams and five wetlands were identified within the subject parcel. The Cedar River was also delineated to the north of the property with one associated wetland noted.

Wetland rating forms are available in Appendix B, and wetland determination data forms are available in Appendix C. Laura Casey, King County KCDLS-Permit Environmental Scientist, concurred with our wetland mapping and classifications under King County Code (King County comment letter, KC File COMM18-0014 & SHOR18-0032, November 18, 2019).

3.2.1 Wetland A

Wetland A is located within the southern side of the developed area. At the time of the visit, ecology blocks abutted a portion of the northern edge, and the eastern section has been ditched. Wetland A is a slope/depressional wetland with emergent and scrub-shrub Cowardin vegetation classes. Common vegetation within scrub-shrub dominated areas include red alder, willow species, and black cottonwood saplings in addition to the scrubs, Himalayan blackberry and salmonberry. Wetland areas dominated by emergent species include watercress, water purslane, creeping buttercup, grasses, piggyback, soft rush and small-fruited bulrush. Hydric soil determination is supported by the presence of Hydrogen Sulfide (hydric soil indicator A4) in addition to black soils (chroma 1) in which Redox Dark Surface (F6) is presumed due to organic matter masking redoximorphic features (RMF). Wetland hydrology was evident within Wetland A through a High Water Table (hydrology indicator A2), Saturation (A2) and Hydrogen Sulfide Odor (C1). Wetland A receives water from groundwater seeps and precipitation, resulting in the hydroperiods, permanent flooding and saturation. Wetland A is the headwater of Stream B.

3.2.2 Wetland B

Wetland B is a small slope/depressional wetland, located east of Wetland A at the base of the hillside. It contains emergent and forested Cowardin vegetation classes; common vegetation includes red alder, Himalayan blackberry, salmonberry, creeping buttercup, giant horsetail, sedge species and grasses.

Hydric soils are black and presumed to meet Redox Dark Surface (F6), as organic material masks RMF. Wetland hydrology meets indicators High Water Table (A2) and Saturation (A3). Wetland B contains the seasonal flooding and saturation hydroperiods, receiving water the groundwater seeps and precipitation. Wetland B does not have an outlet.

3.2.3 Wetland C

Wetland C is a large wetland located at the base of a steep slope at the western edge of the subject property. Only a small portion of the wetland is located on-site; Stream B forms much of its eastern border. As such, the wetland rating was completed from areas observable from the subject parcel and publicly available aeriels and online information. Wetland C is a slope/depressional/riverine wetland with scrub-shrub and forested Cowardin vegetation classes. Common vegetation includes black cottonwood, Pacific willow, and red alder in the canopy with red-osier dogwood, rose species, salmonberry, snowberry and Himalayan blackberry within the shrub understory layer, and water purslane, wooly sedge, giant horsetail and grasses within the emergent understory layer. Hydric soil indicators were met with presence of Hydrogen Sulfide (A4) and presumed Redox Dark Surface (F6). Wetland hydrology is supported by a Hydrogen Sulfide Odor (C1), High Water Table (A2) and Saturation (A3). Water inputs into Wetland C are likely from groundwater seeps, precipitation and overbank flooding from the stream channel. Hydroperiods observed include saturation, permanently flowing streams and seasonal flooding.

3.2.4 Wetland D

Wetland D is a large wetland that originates from a steep stream channel entering the wetland from the south at its western edge. The wetland occurs within a long, linear depression, which gently slopes toward the east. At its eastern edge, the wetland becomes a slope wetland along the shoulder of SR 169, which drains into a catch basin that carries water through a culvert under SR 169. Wetland D includes depressional, riverine, and slope wetland HGM characteristics with emergent and scrub-shrub Cowardin classes. Common vegetation includes salmonberry within the shrub understory layer, and water giant horsetail, lady fern, and reed canarygrass within the emergent layer. Much of the wetland is permanently ponded, with water inputs likely originating from groundwater seeps, a high-groundwater table, precipitation, and contributions from the stream channel. Hydroperiods observed include saturation, permanent flooding and occasional flooding.

3.2.5 Wetland DD

Wetland DD is located within a deep enclosed depression. Although it is in close proximity to Wetland D, there do not appear to be any surface water connections between the two wetlands at any time of year. The depressional wetland is predominantly open water, with a fringe of scrub-shrub vegetation along the saturated slopes. Common wetland vegetation includes devil's club and salmonberry, with some emergent vegetation including fringe cup, bleeding heart, and lady fern. Permanent ponding, is likely supported by groundwater seeps, a high-groundwater table, and precipitation. Hydroperiods observed include saturation and permanent flooding.

3.2.6 Right-of-Way (ROW) wetland

The ROW wetland is located at the base of a slope within the right-of-way along SR 169. The ROW wetland is a slope/riverine wetland with an emergent Cowardin vegetation class. Dominant vegetation includes several species of grasses and herbaceous vegetation in addition to some Himalayan blackberry. At the time of the visit, soils were saturated to the surface. The section of the wetland that is adjacent to the road has been ditched and connects to Stream C just above the culvert.

3.2.7 Off-site wetland (North of SR-169)

The off-site, riverine wetland is located just below the Cedar River Trail and landward of the OHWM of the Cedar River near the outlet of Stream C to the river. It has emergent and forested Cowardin vegetation classes; common vegetation observed within the wetland includes red alder, salmonberry, Himalayan blackberry, reed canarygrass, and creeping buttercup. This wetland mainly receives water from Stream C and precipitation; at the time of the visit, soils were saturated and seasonal flooding was evident. As described above, this wetland was not delineated or rated because SR 169 interrupts buffer functions and because Stream C and the ROW wetland present more encumbering features (see discussion in Section 4 below).

3.2.8 Marginal non-wetland area

A marginal non-wetland area was observed within the subject parcel during our original visit. This area was located directly abutting foundations of sheds north of Wetland A. At the time of the visit, excavated depressions along the foundation contained ponded water and were populated with several weedy plant species, such as reed canarygrass, soft rush and Canada thistle. This area was not connected via surface nor shallow groundwater to Wetland A or any stream and was small in size, approximately 50 square feet total. The marginal area is in industrial use and is generally compacted. This area is presumed to

contain perched water not associated with a high water table. The area was not deemed a jurisdictional wetland due to the disturbed and compacted conditions and overlap with the structure foundation. The shed has since been demolished, and the area described previously is no longer evident.

3.3 Streams

Laura Casey, King County KCDLS-Permit Environmental Scientist, concurred with our stream mapping and classifications under King County Code (King County comment letter, KC File COMM18-0014 & SHOR18-0032, November 18, 2019).

3.3.1 Stream A

Stream A is a seasonally flowing stream located within the southwest section of the subject property. The stream was dry in June 2018. It generally flows north through the study area and converges with Stream B near the southwestern corner of the developed area. It has a cobble, gravel and silt substrate and is approximately four to eight feet wide. FPARS maps Stream A as a non-fish bearing stream. Based on topography derived from LIDAR, the slope of the lowermost 100 feet of stream channel is approximately 28 percent, and the slope steepens beyond that point. Given both the steep slope of the stream channel, over 20 percent, and the seasonal nature of the stream, we presume that all fish use is precluded from the stream channel. This conclusion is consistent with criteria identified in KCC 21A-24-013 and WAC 222-16-030.

3.3.2 Stream B

Stream B's headwater is Wetland A and flows west then north after its confluence with Stream A. Near the property's western boundary, Stream B acts as the eastern edge of Wetland C, then splits, one section turning west into Wetland C and the other section continue north terminating in a pond that is part of Wetland C. A portion of the right bank has been armored with ecology blocks where a culvert carries belowground stream flow. Additionally, during a winter 2019 site visit, this stormwater catchment was observed collecting overbank stream flow and conveying it back into the channel at the armored outfall.

The width of Stream B varies substantially with position along the subject parcel. The channel along the lower portion of the reach ranges from 10-12 feet bankfull width, while the upper portion (above the confluence with a culvert carrying stream flow) is narrower at 3-4 feet in width.

All segments of the stream had surface water present in June 2018, and based on the geographic position at the base of a steep slope, it is assumed that the channel carries perennial flow which is supported by groundwater discharge.

The gradient of Stream B is low (less than 5 percent) throughout the parcel. The streambed is a mix of sand and cobbles. The combination of size, gradient, flow, and substrate in the stream do not lend themselves to supporting salmonid *spawning*; however, the location of the stream adjacent to the Cedar River means that, if accessible, the stream could provide off-channel rearing habitat for juvenile salmonids. Water within Stream B appeared clear and instream temperatures are likely to remain within the range of thermal tolerance for salmonids due to cool groundwater contributions. Therefore, water quality parameters are not likely to preclude salmonid use.

FPARS maps Stream B as a non-fish bearing stream. Stream B is presumed to drain to the Cedar River through a culvert under SR 169, similar to other culverts in the area (30 inches in diameter). Based on the length of the culvert, we assume that the culvert presents a partial or total fish passage barrier. However, because this barrier is manmade and could be recovered by restoration to provide reasonable rearing habitat for juvenile salmonids originating from the Cedar River, potential for salmonid use cannot be precluded. Therefore, the classification of Stream B should be Type F.

3.3.3 Stream C

Stream C is a perennially flowing stream located with the northeast corner of the property. Near the northern property line, it originates in the ROW wetland and flows west roughly parallel to the road, then veers north under a culvert and empties into the off-site wetland where it loses stream definition. Stream bed and bank briefly re-appear at the wetland's outlet before it flows into a second culvert, emptying into the Cedar River. Stream C, within the subject property, is approximately 2 feet wide and has a gravel and sand substrate. Due to seasonal low flow conditions, a gradient of approximately 25 percent approaching the Cedar River, and limited natural channel length upstream from the culvert (~20 feet), Stream C is presumed non-fish bearing. It is not mapped by King County iMap or FPARS.

3.3.4 Cedar River

The Cedar River is located north of the subject parcel. A bend in the river runs parallel to SR 169 for approximately 430 feet and is located approximately 150 feet from the subject property's northern boundary. These measurements were estimated using the 2017 aerial from King County iMap. The Cedar River is a documented salmonid stream and a Shoreline of the State.

3.4 Wildlife

King County maps a wildlife habitat network across the northwest corner of the subject property (Figure 3). The wildlife habitat network line is presumably intended to connect intact habitats associated with the Cedar Grove Natural Area to the northeast of the parcel with forested areas west of the parcel and McGarvey Park Open Space to the southwest of the subject parcel. It should be recognized that while the wildlife habitat network is depicted as a line on the map, in actuality, a wildlife habitat network functions through broad habitat concentration areas and corridors which may range from broad expanses to narrow pinch points. The presence of SR 169 immediately to the north of the parcel severely limits north-south wildlife corridor potential. The northwest area of the parcel consists of a relatively flat, compacted gravel area with herbaceous, primarily non-native, vegetation. Dominant species include common tansy, common teasel, Himalayan blackberry, and reed canarygrass. A chain link fence and shallow swale run along the north parcel boundary. Overall, the on-site vegetation in this area does not currently make up a structurally diverse habitat for nesting, roosting/resting, and foraging areas for wildlife. The cleared portion of the subject property, with its history of industrial use and degraded vegetative structure, does not provide a habitat concentration area, nor does the area provide a topographic or vegetative corridor for wildlife. Instead, if wildlife do manage to cross SR 169, they are likely to find refuge in forest habitat corridors present to the west, south, and east of the cleared portion of the parcel.

Further supporting the above conclusion, Washington State Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) maps biodiversity areas and corridor to the west, south, and east of the cleared portion of the site (Figure 4). WDFW identifies the area as the “Cedar River Valley Open Space Areas.” It characterizes the area as “Steep forested slopes and high gradient riparian areas. These are mostly unstable slope areas, which should be left uncleared. Provide habitat for many avian and terrestrial species. These areas also contain riparian habitats.”



Figure 3. Wildlife network, Source King County iMAP.

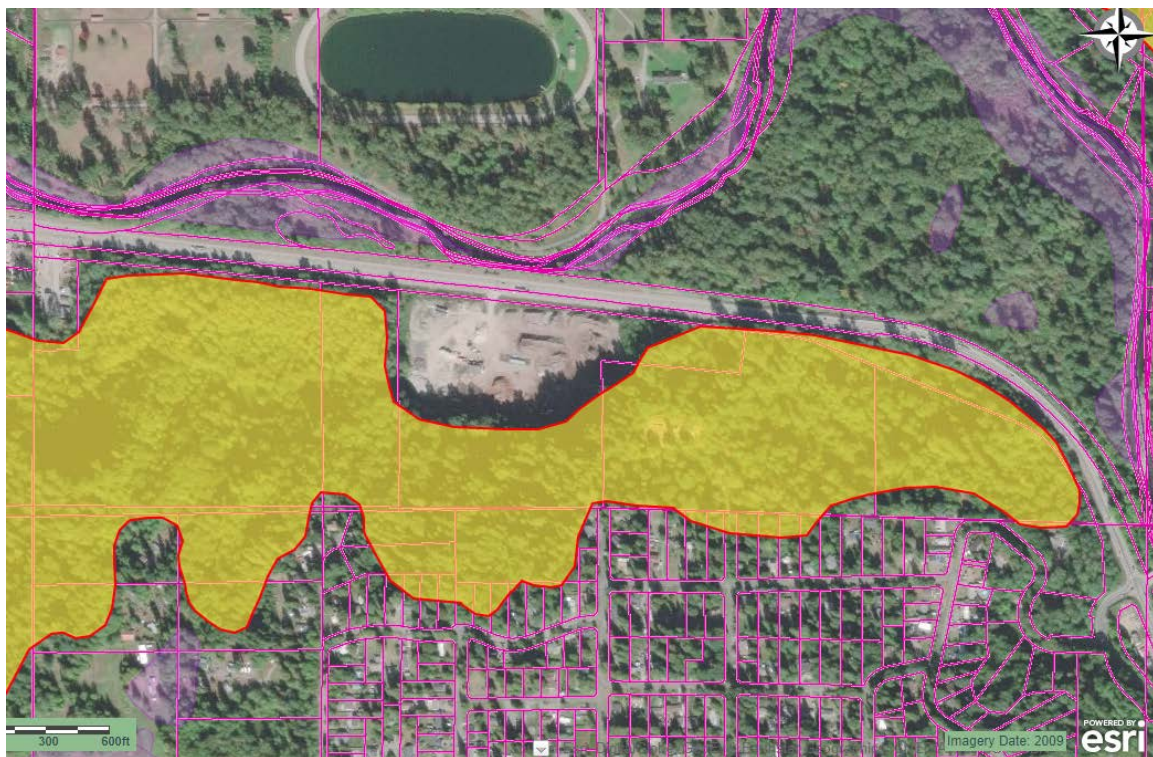


Figure 4. Biodiversity areas and corridor in yellow, Source WDFW PHS on the Web.

As summarized in Table 1 below, WDFW lists several PHS within approximately 0.5 mile of the study area. However, no priority habitats or species are mapped on the subject parcel, and no active breeding sites for priority species are

documented on the subject property, nor were nests observed during the site visits. None of the wildlife habitat conservation area species listed in KCC 21A.24.382 are documented on the subject property.

Table 1. PHS listed habitats and species in the vicinity of the study area (within approximately 0.5 mile).

Common Name of Listed Habitat or Species	Habitat Type or Scientific Name (species)	Site Name	Federal Status, State Status, or PHS Listing
Biodiversity Areas and Corridor	Terrestrial Habitat	Cedar River Valley Open Space Areas	PHS Listed
Wetlands	Aquatic Habitat	N/A	PHS Listed
Freshwater Emergent Wetland	Aquatic Habitat	N/A	PHS Listed
Freshwater Forested/Shrub Wetland	Aquatic Habitat	N/A	PHS Listed
Coho salmon	<i>Oncorhynchus kisutch</i>	Cedar River	Federal Candidate, PHS Listed
Chinook salmon	<i>O. tshawytscha</i>	Cedar River	Federally threatened, PHS Listed
Kokanee salmon	<i>O. nerka</i>	Cedar River	PHS Listed
Sockeye salmon	<i>O. nerka</i>	Cedar River	PHS Listed
Resident Coastal Cutthroat	<i>O. clarki</i>	Cedar River	PHS Listed
Dolly Varden / Bull Trout	<i>Salvelinus confluentus</i>	Cedar River	Federally threatened, PHS Listed
Winter Steelhead	<i>O. mykiss</i>	Cedar River	PHS Listed

Aerial images provided on King County iMAP indicate that the parcel, including the northwest corner of the parcel, has been used for industrial purposes dating back to at least 1936 (Figure 5).

Based upon our site assessment and review of WDFW documentation of priority habitats and species, the wildlife network appears to be slightly misaligned or oversimplified on King County iMAP. Our evaluation of site conditions and review of historic aerial images support the assessment of PHS as mapped by WDFW (Figure 4). If a wildlife habitat network passes between the Cedar River to the north and the McGarvey Park Open Space to the southwest, wildlife are likely to use the intact forested areas surrounding the cleared portion of the site rather than the cleared area itself.

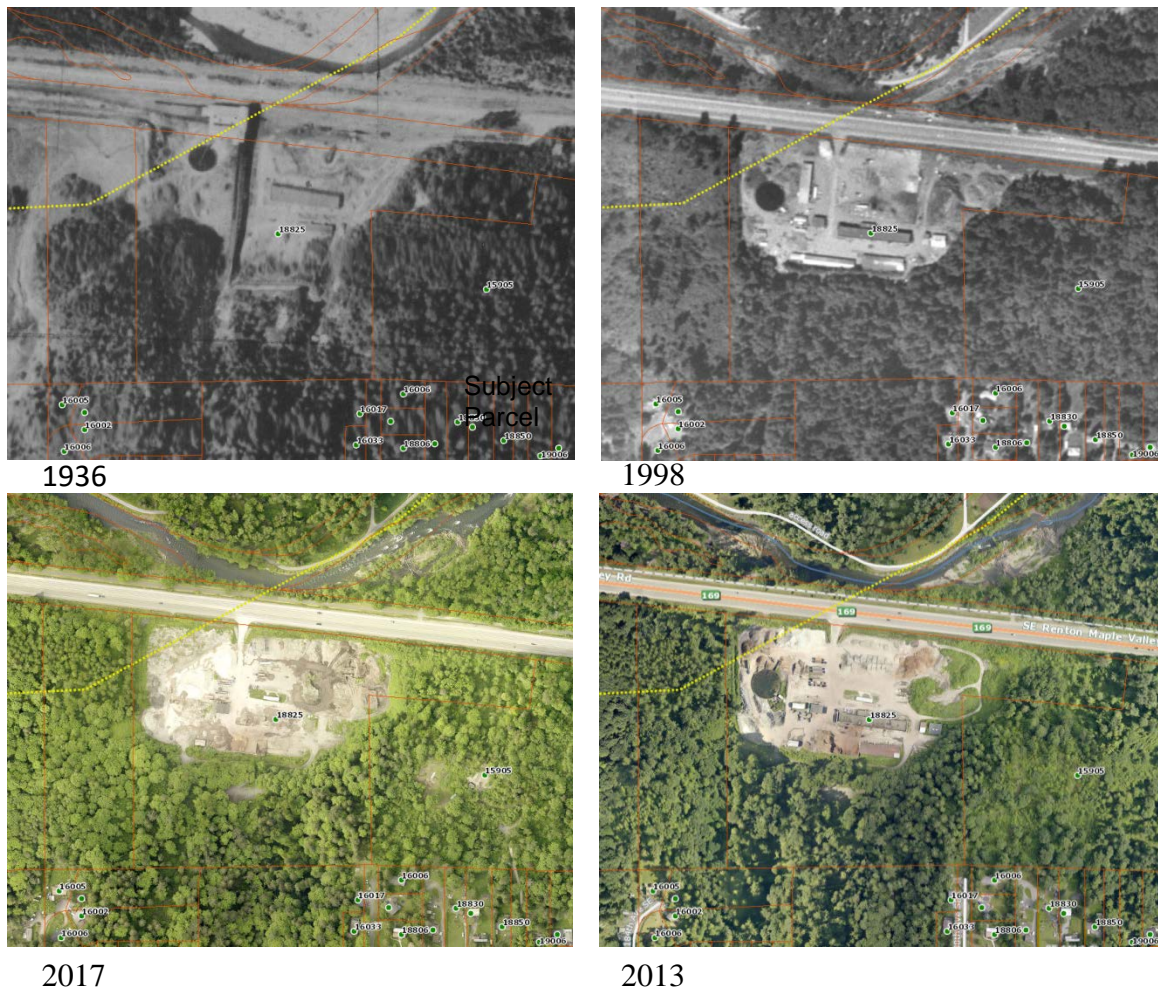


Figure 5. Historic aerial imagery showing land use on the subject parcel, Source: King County iMap.

3.5 Geologically Hazardous Areas

Seismic hazards, potential steep slopes, and erosion hazard areas are identified in the southern and eastern portions of the parcel on King County iMap. Geologically hazardous areas are addressed in a separate report by the geotechnical engineer, and are not addressed further in this report.

4 RELEVANT CRITICAL AREA STANDARDS

In King County, wetlands, aquatic areas (streams), and wildlife habitat conservation areas, are governed by Critical Areas Chapter 21A.24 of the King County Code (KCC). This section identifies standards within KCC 21A.24 that

apply to the proposed project and provides an explanation of how the project addresses those standards, as appropriate.

4.1 General Critical Area Standards

Allowed Alterations (KCC 21A.24.045)

King County allows certain alterations within critical areas and their buffers per KCC 21A.24.045. The proposed project avoids development within critical areas and avoids development within critical area buffers to the maximum extent feasible. The following allowed alterations are proposed within critical area buffers:

- The project expands the roadway beyond the existing public road right-of-way structure to accommodate acceleration and deceleration lanes that improve traffic flow in the immediate area of the site. The total area of the expansion within buffers is 4,968 square feet. This modification is allowed under KCC 21A.24.045.D.26 as described below.
 - a. Given the access location, there is no other feasible location for the acceleration and deceleration lanes.
 - b. The expanded roadway is not located over salmonid habitat or other listed species habitat.
 - c. The width of the lanes is the minimum required by standard transportation standards. The proposed lanes avoid direct impacts to wetlands or streams.
 - d. No instream work is proposed for the right of way improvements.
 - e. The expanded roadway will not change peak flows, duration or volume of flood storage capacity.
 - f. The area is not subject to channel migration. No channel migrations zones are mapped in proximity to the work area.
- The project improves the existing wellhouse access by lengthening the current gravel path within the buffer of Wetland A. The total new area of the access road within the wetland buffer is 1,394 square feet. This access road is allowed under KCC 21A.24.045.D.28 as described below.
 - a. No other feasible access can be achieved with less impact to the wetland buffer. A 12-foot width is the minimum needed to allow vehicular access. The site plan was configured to link with the existing access route and allow direct access from the developed area, which minimizes the extent of buffer impact.

- b. No cut or fill is necessary to establish the access road. Gravel will be placed on the existing compacted soils surface with minimal preparation.
- c. The access road does not contribute to the risk of landslide or erosion.
- d. The area is not subject to channel migration. No channel migrations zones are mapped in proximity to the work area.
- e. Wellhouse access construction does not involve any instream work.

Mitigation Sequencing (KCC 21A.24.125)

The applicant planned the development footprint to avoid impacts to critical area buffers to the maximum extent feasible. The site plan avoids and minimizes buffer impacts by focusing development on the existing industrial site. In order to allow for sufficient space for the truck turn around and covered storage, modification of the outermost portion of the standard aquatic area buffer along the southwest side of the development is necessary. That impact will be addressed through buffer averaging at a ratio slightly above one-to-one. Additionally, to allow safe acceleration and deceleration for trucks entering and leaving the site, some widening of SR-169 is necessary. The existing well house also needs to retain an established access road. Together, these road related improvements will generate 6,362 square feet of permanent buffer impact, an estimated 6,128 square feet of temporary buffer impact, and 324 square feet of temporary wetland impact. The existing conditions of the buffer reductions are non-functioning unvegetated, compacted soil. These impacts will be more than compensated by expanding, restoring and enhancing 182,390 square feet (4.2 acres) of on-site critical area buffers.

The proposed development also plans to restore some prior site disturbances. The streambank fill above the existing wellhouse will be removed and a natural streambank design, including vegetation and logs, will be installed (see plan sheet M4.3). The existing catchment and outfall that drain to Stream B will be decommissioned and the surrounding ecology blocks will be removed. The stream bank will be restored and planted. Large woody debris will also be added to the restoration area and the adjacent floodplain of Streams A and B.

The proposed development minimizes potential water quality impacts by incorporating water quality treatment including lined biofilter swales, oil/water separators, a large sand filter, and an infiltration gallery. The treatment will provide "enhanced basic" treatment for all stormwater discharged from pollutant generating surfaces. The proposed development will also address

water quantity and flow impacts by infiltrating 100% of the full time series discharge (TIR by DEA, dated June 8, 2020).

Mitigation and Monitoring (KCC 21A.24.130)

All proposed impacts will be either avoided or minimized such that no additional mitigation is needed per the strict application of this code. However, per comments from King County (F. Dehkordi, April 23, 2018), per its authority under the State Environmental Policy Act, the County will recommend additional mitigation to reduce the development's impacts and enhance the site's degraded critical areas buffers. As documented in the mitigation plan (Appendix A) the Applicant plans to comply with the County's recommendation and restore all stream and wetland buffers bordering the development area, in addition to the mapped wildlife network areas.

The mitigation plan (Appendix A) includes soil amendment with organic material and decompaction of degraded on-site soils to restore the soil structure and its moisture retention properties. The mitigation plan will also regrade the buffer to restore a gradual natural slope toward the aquatic areas. Restoring a more natural gradient in the buffer coupled with decommissioning of an existing stormwater catchment, and removal of ecology blocks are intended to reconnect Stream B with a natural floodplain area. The stormwater catchment will be decommissioned and the Stream B bank restored. As was noted in the November 2019 King County comment letter, alluvial sediment deposition is part of the on-site stream dynamics at the confluence of Streams A and B and sediment deposition will continue to aggrade the channel at the confluence. Buffer regrading and placement of large woody debris will support the dynamics of this stream system and floodplain. Additionally, the disturbed stream bank on Stream A above the well house will be restored with new soil, logs and vegetation.

The mitigation plan will restore a dense native vegetation community, including trees, shrubs, and groundcover throughout the area.

Temporary impacts to the ROW Wetland will be mitigated through in-place restoration and additional enhancement of the on-site wetland area. This wetland enhancement will be continuous with 36,347 square feet of stream buffer and wetland buffer enhancement.

The success of the mitigation will be evaluated over a three-year monitoring program per King County regulations based on clear and measurable performance standards.

Building setbacks (KCC 21A.24.200)

Consistent with this section, a minimum 15-foot building setback is proposed surrounding the entire development area. As allowed per code, minor encroachments within the building setback will be limited to the non-structure uses of biofilter swales constructed to avoid excavation or fill in the adjacent buffer. KCC 21A.24.200.F allows this setback use when adequate protection of the buffer will be maintained. The proposed biofilter swales will ensure that runoff from pollutant generating surfaces is directed to the proposed stormwater treatment facilities. Therefore, the proposed swales will help support water quality protection provided by designated buffer areas.

4.2 Wetlands

Categories (KCC 21A.24.318)

Wetlands were categorized consistent with KCC 21A.24.318 using the 2004 Wetland Rating System from Western Washington.

Buffers (KCC 21A.24.325.B)

Wetland buffer widths in King County are based on a combination of the wetland category, the habitat score, location relative to the Urban Growth Area (UGA), and the intensity of the site's land use. The site is located outside of the County's UGA and the proposed development is considered a high-intensity land use. Table 2 summarizes wetland rating scores and buffers.

Table 2. Summary of wetland rating scores and buffer widths of wetlands within the subject parcel.

Feature Name	HGM ¹ Rating Classification	Habitat Score	Total	Category	Standard Buffer width
Wetland A	Depressional	15	29	IV	50 feet
Wetland B	Depressional	17	47	III	80 feet
Wetland C	Depressional	22	44	III	150 feet
Wetland D	Depressional	23	51	II	195 feet
Wetland DD	Depressional	21	43	III	150 feet
ROW Wetland	Riverine	15	53	II	100 feet

¹ HGM = hydrogeomorphic classification

As mentioned in Section 3.2.6, the proposed development area is functionally isolated from the off-site wetland north of SR 169. The off-site wetland adjacent to the Cedar River is functionally isolated from the subject property by SR 169, a busy 5-lane highway, carrying heavy traffic at high speeds during most times of the day. The off-site wetland is located at the outfall of Stream C to the Cedar River, and immediately downstream from the ROW wetland. Given the location of the off-site wetland at the outlet of Stream C, the ROW wetland buffer is more encumbering than even the largest potential standard wetland buffer. Therefore, the off-site wetland was not delineated or rated.

Buffer Averaging (KCC 21A.24.325.C)

The Applicant proposes to average buffers, consistent with KCC 21A.24.325.C, as follows:

1.a. the ecological structure and function of the buffer after averaging is equivalent to or greater than the structure and function before averaging; or

- As shown in the project plans, the areas of standard buffer proposed to be impacted are located on the outer fringe of the buffers of Wetland A and Stream B. The additional areas to be added and planted will ensure that all areas surrounding the developed site beyond the setback will be vegetated. This will help to maximize the function of the buffers by providing a contiguous, well vegetated buffer.

1.b. averaging includes the corridors of a wetland complex; and

- Corridors between wetlands within the wetland complex are maintained and functionally widened through buffer averaging paired with buffer restoration planting.

2.a. the total area of the buffer after averaging is equivalent to or greater than the area of the buffer before averaging;

- Buffer averaging is proposed for buffers associated with Wetland A and B and Stream C. The total area of the buffer after averaging is 553 square feet greater than the total buffer area before averaging.

2.b. the additional buffer is contiguous with the standard buffer; and

- All areas of additional buffer are contiguous with standard buffer areas.

2.c. if the buffer width averaging allows a structure or landscaped area to intrude into the area that was buffer area before averaging, the resulting landscaped area shall extend no more than fifteen feet from the edge of the structure's footprint toward the reduced buffer.

- These criteria are met.

Buffers- Special Circumstances (KCC 21A.24.325.D)

Wetland buffer widths in KCC 21A.24.325.D.1 and 2 do not apply to the site because: 1) none of the wetlands support habitat for endangered, threatened, or sensitive species; and 2) wetland buffers between the development area and the wetland do not include steep slopes or landslide hazards.

KCC 21A.24.325.D.3 does apply because the wetlands delineated within the parcel constitute a wetland complex, as defined per KCC 21A.06.1392.

Specifically, the wetlands meet the definition of a wetland complex because a) each wetland is within 500 feet of the delineated edge of at least one other wetland in the complex; b) the complex includes two Category II wetlands, c) the area between each wetland and at least one other wetland in the complex is vegetated with shrubs and trees along the perimeter of the cleared area; and d) there are not any barriers to migration or dispersal of wildlife that may use wetlands along the perimeter of the cleared area. It is important to recognize that the area proposed for development does not meet the standards for vegetation and dispersal in KCC 21A.06.1392.c and d.

Because the wetlands within the parcel encompass a wetland complex outside of the UGA, buffer standards under KCC 21A.24.325.D.3 apply.

a. the buffer width for each individual wetland in the complex is the same width as the buffer width required for the category of wetland;

- Buffer widths in Table 2 apply.

b. if the buffer of a wetland within the complex does not touch or overlap with at least one other wetland buffer in the complex, a corridor is required from the buffer of that wetland to one other wetland buffer in the complex considering the following factors:

- With the exception of Wetland C, the buffer of each wetland overlaps with at least one other wetland buffer in the complex. These wetlands are connected by Stream B (see below).

c. wetlands in a complex that are connected by an aquatic area that flows between the wetlands are not required to be connected through a corridor;

- No additional corridor is required between Wetland C and Wetland A because they are connected by Stream B.

Development Standards and Alterations (KCC 21A.24.335)

Only allowed uses are proposed. No non-native plants or animals will be introduced to wetlands or their buffers. No wetland alterations are proposed.

Specific Mitigation Requirements (KCC 21A.24.340)

With the exception of buffer areas to be averaged, the project will not alter wetlands or wetland buffers. Therefore, no mitigation is required under this section.

However, per comments from King County (F. Dehkordi, April 23, 2018), the County recommends additional mitigation to reduce the development's impacts and enhance the site's degraded critical areas buffers. The Applicant plans to comply with the County's recommendation to restore all wetland buffers bordering the development area, as described above in relation to KCC 21A.24.130.

4.3 Aquatic Areas

Water Types (KCC 21A.24.355)

Aquatic areas were categorized based on their shoreline status, fish use, and surface water connectivity (Table 2). Stream B is considered a Type F stream despite a downstream barrier to fish passage under SR 169 because the stream meets the definition of fish habitat "upstream of, or landward of, human-made barriers that could be accessible to, and could be used by, fish upon removal of the barriers" (KCC 21A.06.578).

Buffers (KCC 21A.24.358)

Table 3 summarizes aquatic area types and buffer widths for streams outside of the UGA.

Table 3. Summary of stream types and buffer widths.

Feature Name	Water Type	Standard Buffer Width (feet)
Stream A	N	65
Stream B	F	165
Stream C	N	65
Cedar River	S	165

Buffer Averaging (KCC 21A.24.358.E.1.a)

Buffer averaging is allowed if the ecological structure and function of the resulting buffer is equivalent to or greater than the structure and function before averaging. As described above for wetland buffer averaging, and as shown in the project plans, the areas of buffer proposed to be impacted are located on the outer fringe of the buffers of Wetland A and B and Stream B. The additional areas to be added and planted will ensure that all areas surrounding the developed site beyond the setback will be vegetated. This will help to maximize the function of the buffers by providing a contiguous, well vegetated buffer to

support wildlife habitat. Averaging allows room for a drainage swale within the developed area, which will help improve the quality of runoff and manage flows that would otherwise impact the stream and the receiving waters of the Cedar River.

Buffer averaging must also meet the following standards:

1) the total area of the buffer is not reduced;

- The total area of the buffer after averaging is 553 square feet greater than the total buffer before averaging.

2) the buffer area is contiguous; and

- All areas of additional buffer are contiguous with standard wetland and aquatic buffer areas.

3) averaging does not result in the reduction of the minimum buffer for the buffer area waterward of the top of the associated steep slopes or for a severe channel migration hazard area;

- Buffer averaging does not affect buffers associated with steep slopes or channel migration areas.

Interrupted Buffer (KCC 21A.24.358.E.1.d)

21A.24.358.E.1.d states that if *“a legally established roadway transects an aquatic area buffer, the roadway edge closest to aquatic area shall be the extent of the buffer, if the part of the buffer on the other side of the roadway provides insignificant biological or hydrological function in relation to the portion of the buffer adjacent to the aquatic area.”*

As described above, the Cedar River is functionally isolated from the subject property by SR 169, a busy 5-lane highway, carrying heavy traffic at high speeds during most times of the day. Wildlife use of this area is expected to be minimal due to the significant disturbance of the roadway. Additionally, any tolerant wildlife species using both the river and the project side of SR-169 would be endangered by the persistently-heavy and high-speed roadway traffic. By comparison, the more densely vegetated, tree and shrub dominated buffer areas on the river side are expected to be well-used by wildlife representing a diverse group of species. As such, buffer on the subject property provides insignificant biological functions to the river.

The isolated would-be buffer areas on-site, across SR-169 and away from the Cedar River include a roadside ditch, which does provide some biofiltration and possibly infiltration function. About 75-feet of the ditch is piped under the driveway to the facility, and the piped section has no function. Little or no capacity for water storage is present due to the free-draining ditch and culvert. Furthermore, all of the roadway drainage and much of the ditch is within the SR-

169 ROW. Areas south of the ditch do not significantly affect water quality because there is little opportunity for water-borne pollutants to enter the ditch from areas to the south. Under a future development scenario, new pollution generating surfaces would be subject to modern water quality treatment requirements, thereby alleviating any natural buffer areas from a stormwater treatment burden. In contrast, the buffer areas directly adjoining the river provide considerably more in terms of supporting favorable conditions of river flow, including biofiltration and storage. Though not particularly broad, buffer areas adjoining the river include some floodplain, which is able to store and release water as the river rises and falls, thus attenuating river flow fluctuations to some degree. As such, the on-site portions of the buffer provide insignificant hydrological function in relation to the buffer on the north side of SR 169. Because both biological and hydrologic buffering functions to the Cedar River are lacking or insignificant on the south side of SR 169, the stream buffer should end at the roadway edge north of SR 169.

Development Standards and Alterations (KCC 21A.24.365)

No prohibited uses or structures are proposed in the buffer. Grading within aquatic area buffers to restore buffer functions will be limited to the period between May 1 to October 1, consistent with KCC 21A.24.365.B. As described in the mitigation plan (Appendix A), topsoil will be tilled and amended with organic compost to reverse effects of compaction and reestablish soil structure and moisture retention capacity (KCC 21A.24.365.C).

Specific Mitigation Requirements (KCC 21A.24.380)

Following proposed averaging, the project will not modify aquatic areas or aquatic area buffers. Therefore, no mitigation is required under this section.

However, per comments from King County (F. Dehkordi, April 23, 2018), the County recommends additional mitigation to reduce the development's impacts and enhance the site's degraded critical areas buffers. The Applicant plans to comply with the County's recommendation to restore all aquatic area buffers bordering the development area, as described above in relation to KCC 21A.24.130). Ecology blocks will be removed from the decommissioned outfall that drained to Stream B. Survey indicates the restoration will be entirely within the buffer. Once restored, the stream bank will include large woody debris. The stream channel will become less confined to the entrenched channel, and flood flows will be slowed and dispersed.

4.4 Wildlife

4.4.1 Wildlife Habitat Conservation Areas

The project site does not support any areas qualifying as wildlife habitat conservation areas per KCC 21A.03.1423. Nests of protected species per KCC 21A.24.382 were not observed anywhere within the parcel or the adjoining area. Areas within the parcel with conditions that may support protected wildlife species will not be altered as part of the proposed development.

4.4.2 Wildlife Habitat Networks

Applicability (KCC 21A.24.385)

As described above, a wildlife habitat network is mapped on the northwestern edge of the subject parcel; therefore, standards for the wildlife habitat network apply. The Applicant will restore the wildlife habitat network area in coordination with the area restored within the 165-foot buffer of Stream B.

Development Standards and Alterations (KCC 21A.24.386)

The proposed development meets the development standards of this section, as detailed below:

B. The wildlife habitat network is sited to meet the following conditions:

- 1. The network forms one contiguous tract or setback area that enters and exits the property where the network crosses the property boundary;*
 - The restored area includes a single contiguous track of restored vegetation along the western property boundary from the northern to the southern end of the parcel. Although the restored vegetation area does not precisely align with the mapped wildlife habitat network within the parcel, as discussed in Section 3.4 of this report, it satisfies the intent of a wildlife corridor by creating a continuous vegetated corridor connecting habitat areas along the Cedar River to habitat areas west and south of the subject parcel. The restored corridor will effectively extend along Stream B to the slopes along the southern property boundary.
- 2. To the maximum extent practical, the network maintains a width of three-hundred feet. The network width shall not be less than one-hundred-fifty feet at any point; and*
 - Within the parcel, a 165-foot wide vegetated buffer will extend along the western property boundary within the vicinity of the wildlife

network. As described in Section 3.4, the neighboring parcel to the west is undeveloped and well vegetated and is mapped as a biodiversity area and corridor. Together with the adjoining property, the wildlife corridor will be well over 300 feet in width.

3. *The network is contiguous with and includes critical areas and their buffers;*

- The network area falls within the buffer of Stream B, which is contiguous with the buffers of Wetlands A, B, and C.

4. *To the maximum extent practical, the network connects isolated critical areas or habitat; and*

- As discussed in Section 3.4, wildlife connectivity between the subject parcel and the Cedar River is disconnected by the busy SR 169. The vegetated buffer area will extend an already well-vegetated and connected biodiversity area and corridor.

5. *To the maximum extent practical, the network connects with wildlife habitat network segments, open space tracts or wooded areas on adjacent properties, if present;*

- The vegetated buffer area will extend an already well-vegetated and connected biodiversity area and corridor.

C. *The wildlife habitat network tract must be permanently marked in accordance with this chapter;*

- Critical areas signs will be established along the eastern and northern extent of the buffer area.

E. *If the wildlife habitat network is contained in a setback area, a management plan is not required. Clearing is not allowed within a wildlife habitat network within a setback area on individual lots, unless the property owner has an approved management plan;*

- The area will be planted with native vegetation and will remain in a vegetated condition in perpetuity.

G. *Segments of the wildlife habitat network set aside in tracts, conservation easements or setback area must comply with KCC 16.82.150;*

- KCC 16.82.150 only applies to lots in the Rural zone. The subject property is zoned Industrial.

Specific Mitigation Requirements (KCC 21A.24.388)

As described in Section 3.4, the existing condition of the wildlife habitat network is highly degraded. The Applicant proposes to restore the soils, grade, and vegetation within the proposed wildlife habitat network corridor and the entire

stream buffer area. As a result, the Applicant will greatly enhance the habitat functions of the area mapped as wildlife habitat network.

5 SUMMARY

The proposed project is located in an area with a long history of industrial uses, which have resulted in the compaction of soils and degradation of stream and wetland buffers and wildlife habitat. The proposed project will reduce the footprint of industrial usage within the site and restore a large area of stream and wetland buffer area, as well as wildlife habitat. Over 4-acres of degraded stream/wetland buffers will be restored with a diverse and dense native plant community. Stream bank segments along Streams A and B will be restored to a more natural condition and large woody debris will be added to the streambanks and floodplain areas. The new development will meet stormwater management regulations and constitute an improvement over the existing management of water leaving the site. As a result, the proposed project will result in a net improvement of critical area and buffer functions.

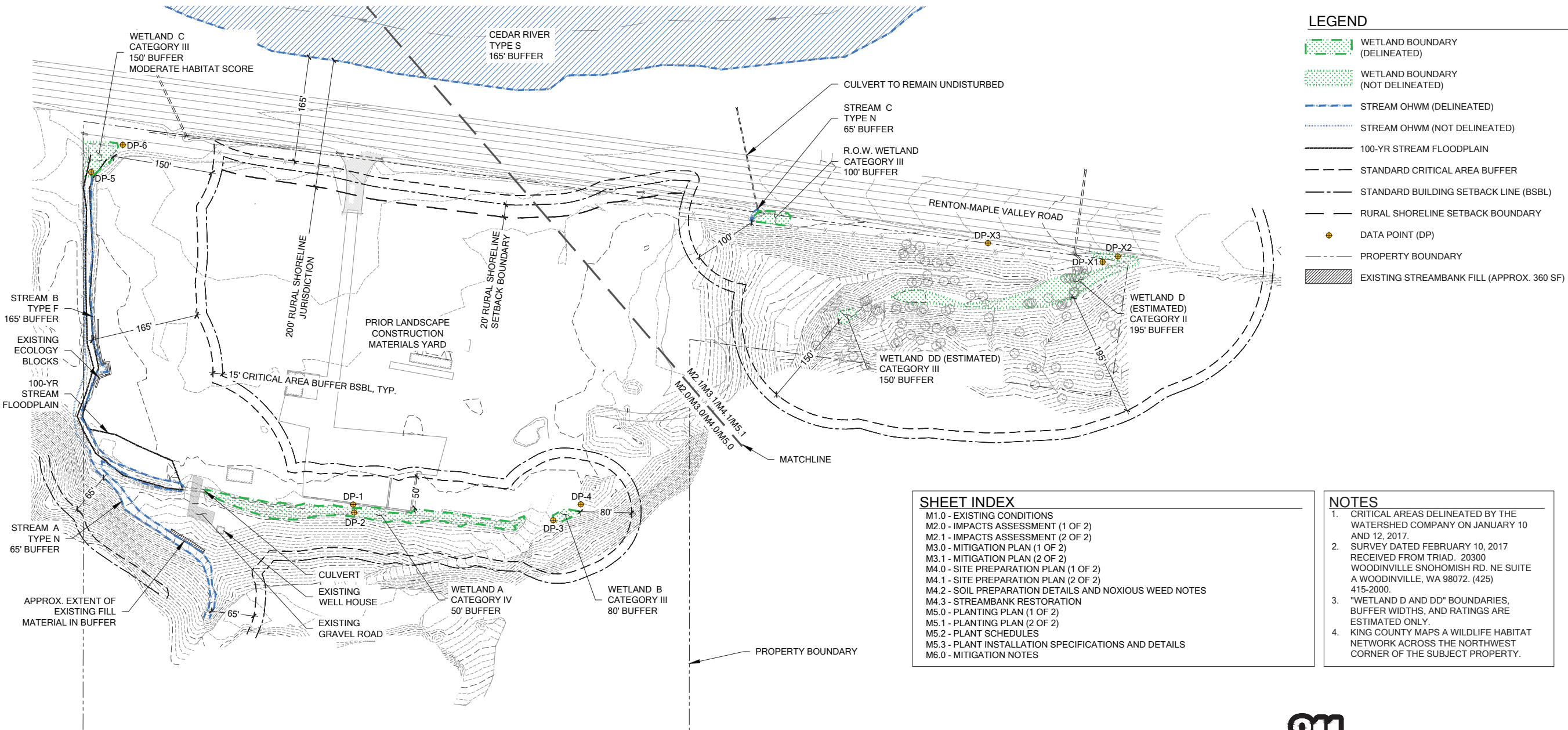
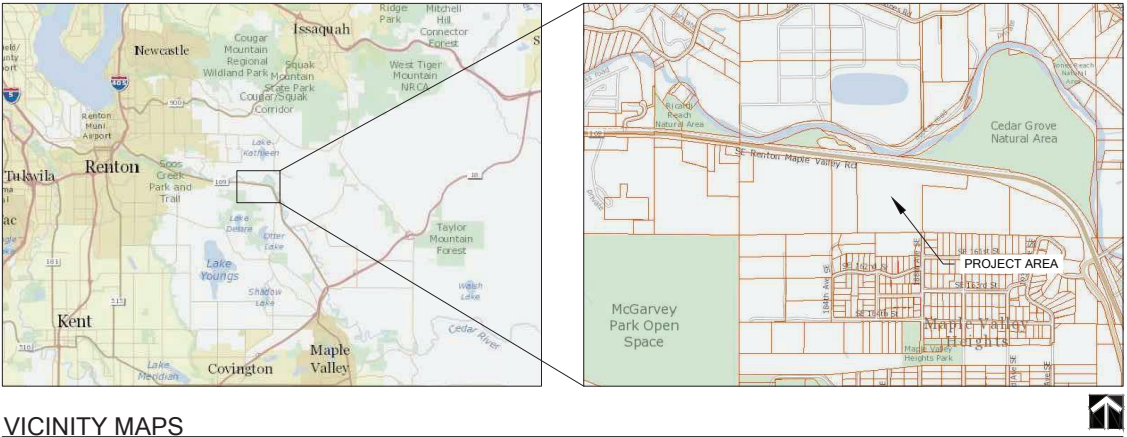
6 LIMITATIONS

The information contained in this report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in this document. All discussions, conclusions, and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, State, and Federal regulatory authorities. No other warranty, expressed or implied, is made.

APPENDIX A

Mitigation and Monitoring Plan

MAPLE VALLEY ASPHALT FACILITY



EXISTING CONDITIONS
SCALE: 1" = 80' WHEN PRINTED AT 24" x 36"



Know what's below.
Call before you dig.

MAPLE VALLEY ASPHALT FACILITY
MITIGATION PLAN
KAREN DEAL, LAKESIDE INDUSTRIES
18825 RENTON MAPLE VALLEY RD SE
UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)

SUBMITTALS & REVISIONS		BY	DATE	DESCRIPTION
1	08-27-2018	AAM	PERMIT SUBMITTAL	
2	06-04-2020	AAM	REVISED PERMIT SUBMITTAL V2	

GENERAL NOTES:
NOT FOR CONSTRUCTION

SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
SCALE ACCORDINGLY.
PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
DRAFTED: AAM
CHECKED: SS/AMC/MF
JOB NUMBER:
160414
SHEET NUMBER:
M1.0 OF 14

 WETLAND BOUNDARY
(NOT DELINEATED)

STREAM OHWM
(NOT DELINEATED)

100-YR STREAM FLOODPLAIN

— — — — STANDARD CRITICAL AREA BUFFER

— -- — PROPERTY BOUNDARY

PROPOSED FEATURES

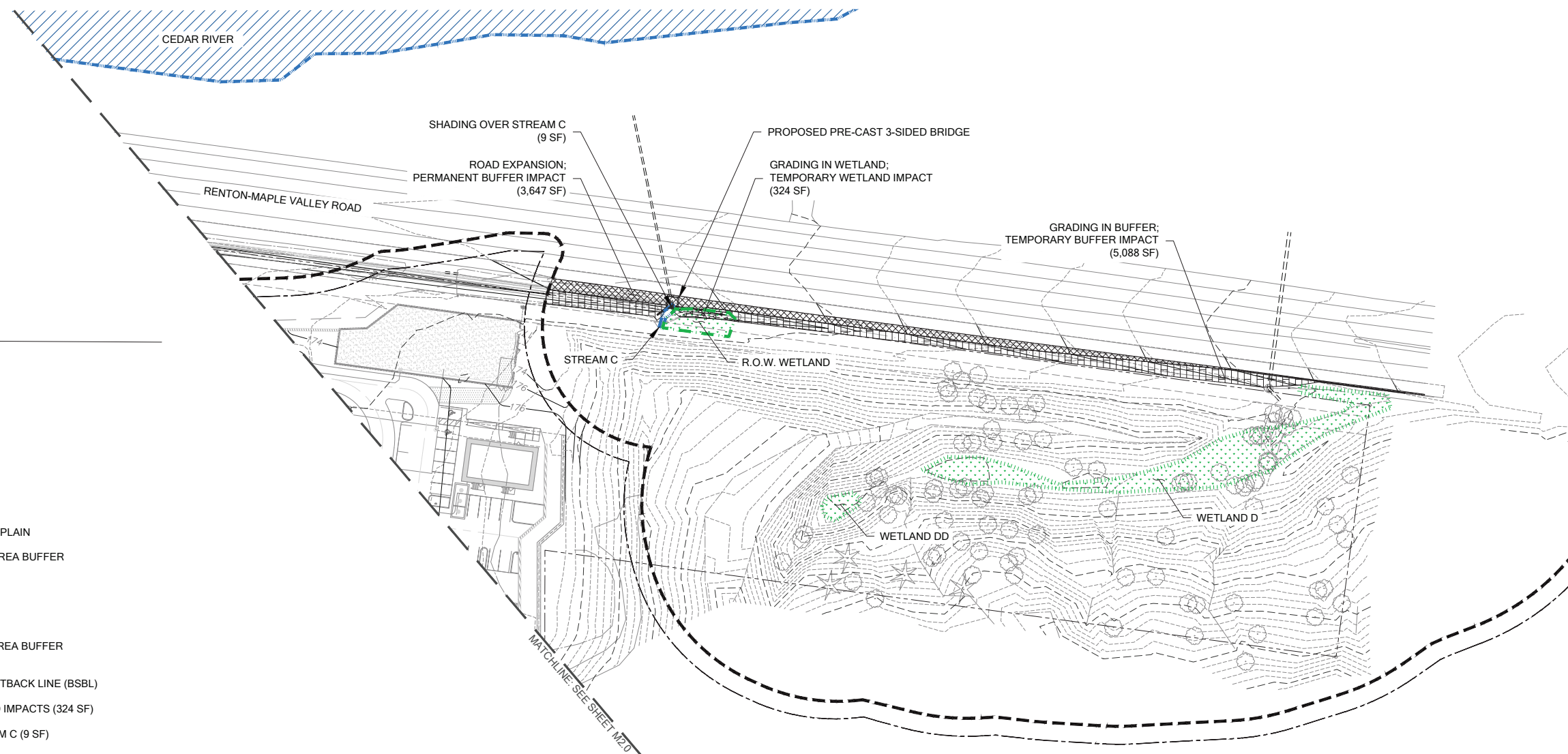
COMBINED CRITICAL AREA BUFFER
AFTER AVERAGING

— - — — — MODIFIED BUILDING SETBACK LINE (BSBL)

TEMPORARY WETLAND IMPACTS (324 SF)

 SHADING OVER STREAM C (9 SF) PERMANENT BUFFER IMPACTS (6,362 SF)

TEMPORARY BUFFER IMPACTS (6,128 SF)



SCALE: 1" = 50' WHEN PRINTED AT 24" x 36"



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UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)

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GENERAL NOTES:					

NOT FOR
CONSTRUCTION

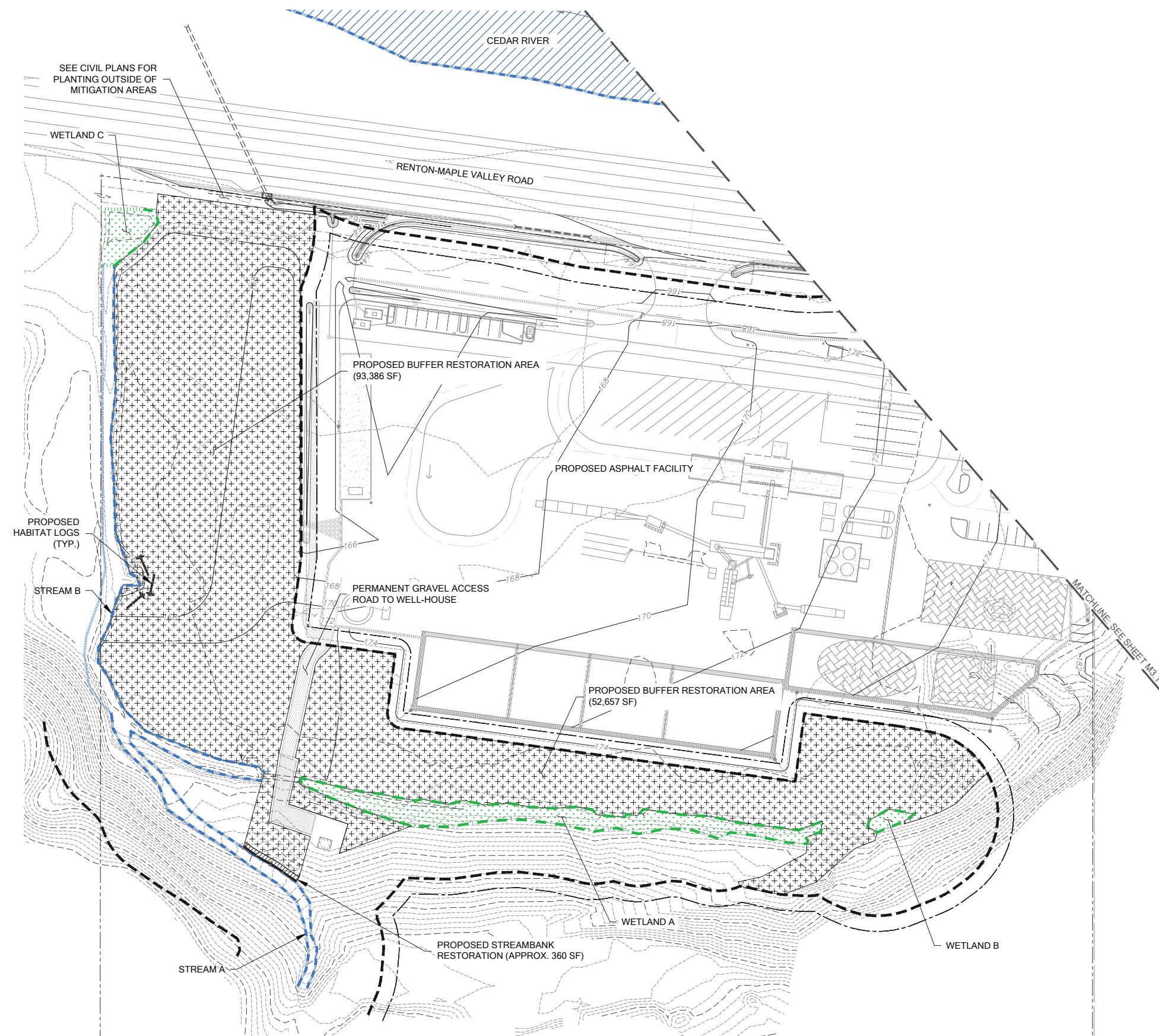
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SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
DRAFTED: AAM
CHECKED: SS/AMC/MF
JOB NUMBER:

160414







SHEET NUMBER:

M2.1 OF 14








LEGEND

EXISTING FEATURES

- 
- | | |
|---|--------------------------------------|
|  | WETLAND BOUNDARY
(DELINEATED) |
|  | WETLAND BOUNDARY
(NOT DELINEATED) |
|  | STREAM OHWM
(DELINEATED) |
|  | STREAM OHWM
(NOT DELINEATED) |
|  | PROPERTY BOUNDARY |

PROPOSED FEATURES

- | | |
|---|--|
|  | COMBINED CRITICAL AREA BUFFER
AFTER AVERAGING |
|  | MODIFIED BUILDING SETBACK LINE (BSBL) |
|  | BUFFER RESTORATION AREA (182,390 SF) |
|  | STREAMBANK RESTORATION AREA (APPROX. 360 SF) |
|  | HABITAT LOGS (QTY. 7) |

MITIGATION NOTES

1. BUFFER RESTORATION AREA SHALL CONSIST OF REMOVAL OF STRUCTURES, PAVING, AND RUBBLE WITHIN THE BUFFER, IMPROVEMENT OF EXISTING SOIL CONDITIONS, AND REVEGETATION WITH NATIVE PLANT SPECIES.
2. STREAM BANK RESTORATION SHALL CONSIST OF REMOVING FILL AND RECONSTRUCTING STREAM BANK WITH BIOENGINEERING METHODS. SEE SHEET M4.3.



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GENERAL NOTES:						

NOT FOR
CONSTRUCTION

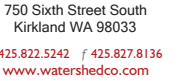
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SCALE ACCORDINGLY.

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DESIGNED: SS/NL/AAM	
DRAFTED: AAM	
CHECKED: SS/AMC/MF	
JOB NUMBER:	

160414

SHEET NUMBER:

M3.0 OF 14



MAPLE VALLEY ASPHALT FACILITY
MITIGATION PLAN
KAREN DEAL, LAKESIDE INDUSTRIES
18825 RENTON MAPLE VALLEY RD SE
UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)

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NOT FOR
INSTRUCTION

SHEET SIZE:
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SCALE ACCORDINGLY.

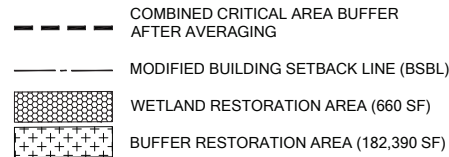
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JOB NUMBER:		160414 R

160414

SHEET NUMBER:

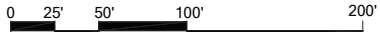
M3.1 OF 14

4/15/2020	APRIL MULCAHY	160414 RENTON LAKESIDE MITIGATION PLAN.DWG
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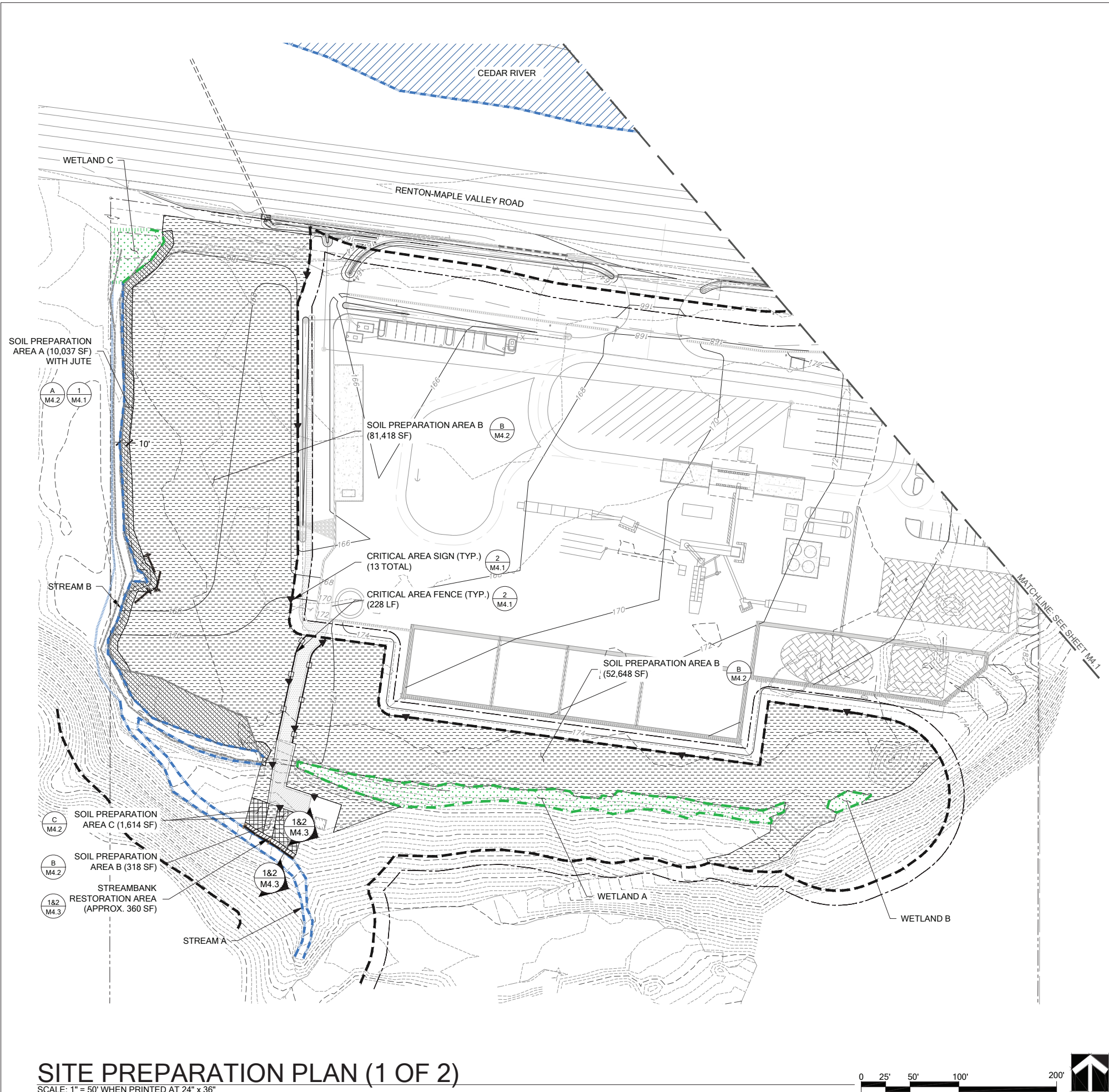


1. BUFFER RESTORATION AREA SHALL CONSIST OF REMOVAL OF STRUCTURES, PAVING, AND RUBBLE WITHIN THE BUFFER, IMPROVEMENT OF EXISTING SOIL CONDITIONS, AND RE-VEGETATION WITH NATIVE PLANT SPECIES.

SCALE: 1" = 50' WHEN PRINTED AT 24" x 36"



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LEGEND

EXISTING FEATURES

- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT DELINEATED)
- STREAM OHWM (DELINEATED)
- STREAM OHWM (NOT DELINEATED)
- 100-YR STREAM FLOODPLAIN
- PROPERTY BOUNDARY

PROPOSED FEATURES

- COMBINED CRITICAL AREA BUFFER AFTER AVERAGING
- MODIFIED BUILDING SETBACK LINE (BSBL)
- CRITICAL AREA SIGN (13 TOTAL)
- CRITICAL AREA FENCE (228 LF)

- SOIL PREPARATION AREA A (44,518 SF)
- SOIL PREPARATION AREA B (134,384 SF)
- SOIL PREPARATION AREA C (3,431 SF)
- STREAMBANK RESTORATION AREA (APPROX. 360 SF)

SITE PREPARATION NOTES

- CONTRACTOR SHALL FLAG AND SURVEY WETLAND AND STREAM BOUNDARIES PRIOR TO STARTING WORK.
- CONTRACTOR SHALL MARK CLEARING LIMITS.
- TESC WILL BE INSTALLED AND INSPECTED PRIOR TO ANY GROUND DISTURBING ACTIVITIES, PER CIVIL PLANS.
- RESTORATION AREAS MUST BE CLEARED OF INVASIVE WEEDS PRIOR TO RESTORATION PLANTING. DELINEATED AREAS OF INVASIVE WEEDS SHOWN ARE APPROXIMATE LOCATIONS OF THE LARGEST PATCHES ONLY. THE ENTIRE RESTORATION AREA SHALL BE SURVEYED FOR INVASIVE WEEDS AND THOSE WEEDS REMOVED. SEE NOXIOUS WEED REMOVAL AND CONTROL NOTES ON SHEET M4.2 FOR SPECIFICATIONS ON CONTROLLING INDIVIDUAL SPECIES.
- ALL WORK IS WITHIN BUFFERS ONLY, UNLESS EXPLICITLY INDICATED OTHERWISE.
- SEE SHEET M4.3 FOR STREAMBANK RESTORATION DETAILS AND WORK SEQUENCE.

SITE PREPARATION PLAN (1 OF 2)

SCALE: 1" = 50' WHEN PRINTED AT 24" x 36"



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MITIGATION PLAN

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UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)

SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08-27-2018	PERMIT SUBMITTAL	AAM
2	06-04-2020	REVISED PERMIT SUBMITTAL V2	AAM

GENERAL NOTES:

NOT FOR CONSTRUCTION

SHEET SIZE:
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PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
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JOB NUMBER:

160414
SHEET NUMBER:

M4.0 OF 14









MAPLE VALLEY ASPHALT FACILITY

MITIGATION PLAN
KAREN DEAL, LAKESIDE INDUSTRIES














18825 RENTON MAPLE VALLEY RD SE
UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)



EXISTING FEATURES

- 
-  WETLAND BOUNDARY (DELINEATED)
 WETLAND BOUNDARY (NOT DELINEATED)
 STREAM OHWM (DELINEATED)
 STREAM OHWM (NOT DELINEATED)
 PROPERTY BOUNDARY

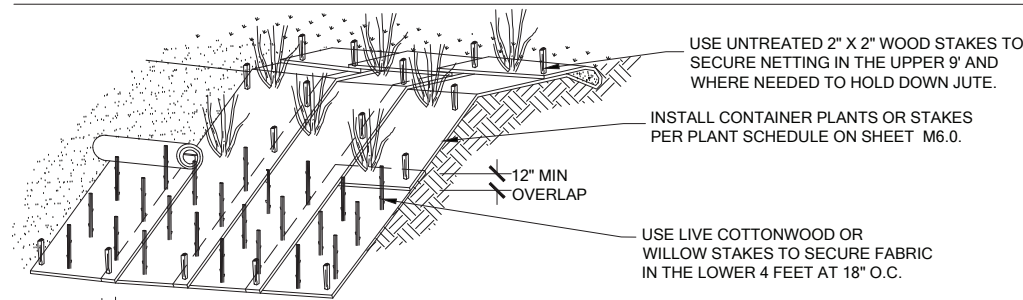
PROPOSED FEATURES

-  COMBINED CRITICAL AREA BUFFER
 AFTER AVERAGING
 MODIFIED BUILDING SETBACK LINE (BSBL)
 APPROXIMATE CURRENT EXTENT OF INVASIVE WEEDS
 CRITICAL AREA SIGN (13 TOTAL)
-  SOIL PREPARATION AREA A (44,518 SF)
 

-  SOIL PREPARATION AREA C (3,431 SF)
 
-  SOIL PREPARATION AREA D (394 SF)
 
-  SOIL PREPARATION AREA E (265 SF)
 

SITE PREPARATION NOTES

1. CONTRACTOR SHALL FLAG AND SURVEY WETLAND AND STREAM BOUNDARIES PRIOR TO STARTING WORK.
2. CONTRACTOR SHALL MARK CLEARING LIMITS.
3. TESC WILL BE INSTALLED AND INSPECTED PRIOR TO ANY GROUND DISTURBING ACTIVITIES, PER CIVIL PLANS.
4. RESTORATION AREAS MUST BE CLEARED OF INVASIVE WEEDS PRIOR TO RESTORATION PLANTING. DELINEATED AREAS OF INVASIVE WEEDS SHOWN ARE APPROXIMATE LOCATIONS OF THE LARGEST PATCHES ONLY. THE ENTIRE RESTORATION AREA SHALL BE SURVEYED FOR INVASIVE WEEDS AND THOSE WEEDS REMOVED. SEE NOXIOUS WEED REMOVAL AND CONTROL NOTES ON SHEET M4.2 FOR SPECIFICATIONS ON CONTROLLING INDIVIDUAL SPECIES.
5. ALL WORK IS WITHIN BUFFERS ONLY, UNLESS EXPLICITLY INDICATED OTHERWISE.

SITE PREPARATION DETAILS

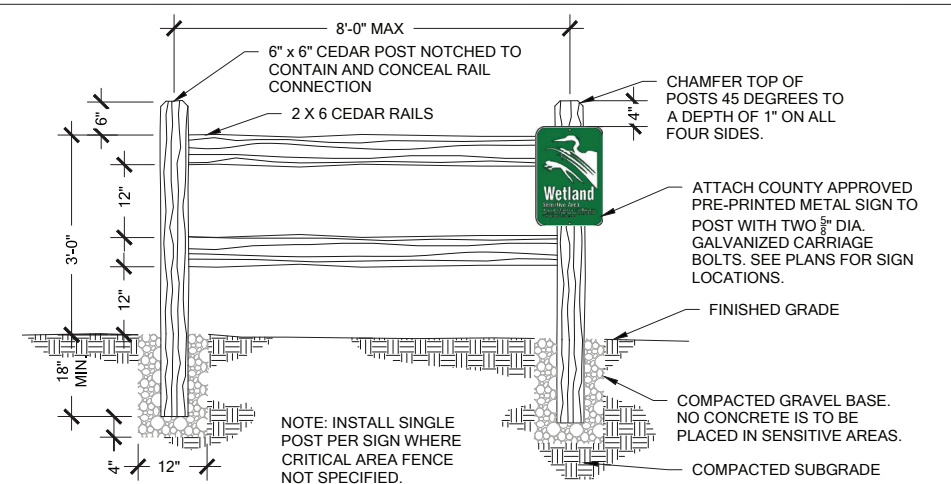


NOTES  6" MIN OVERLAP

1. PRODUCT: BIODEGRADABLE, JUTE EROSION CONTROL CLOTH.
2. PREPARE PLANTING SUBGRADE, REFER TO SOIL PREPARATION AREA A DETAIL ON SHEET M 4.0. DIG HOLES FOR ANY PROPOSED CONTAINER PLANTINGS.
3. CUTE JUTE NETTING LARGER THAN PLANTING AREA.
4. DIG TRENCHES TO HOLD JUTE NETTING SECURE.
5. KEY ONE SIDE OF NETTING INTO SUBGRADE AND BACKFILL WITH SOIL. TAMP SOIL UNTIL NETTING IS SECURE, WITHOUT COMPACTING AREA TO BE PLANTED. SECURE WITH WOOD STAKES SPACED 3 FEET ON CENTER.
6. CUT NETTING IN AN "X" PATTERN AND PULL BACK TO INSTALL CONTAINER PLANTS. DRIVE LIVE STAKES THROUGH THE NETTING.

1 INSTALLING JUTE NETTING ON A SLOPE

Scale: NTS



2 CRITICAL AREA FENCE AND SIGN

Scale: NTS

SITE PREPARATION PLAN (2 OF 2)

SCALE: 1" = 50' WHEN PRINTED AT 24" x 36"



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[illegible]

GENERAL NOTES:

NOT FOR
CONSTRUCTION

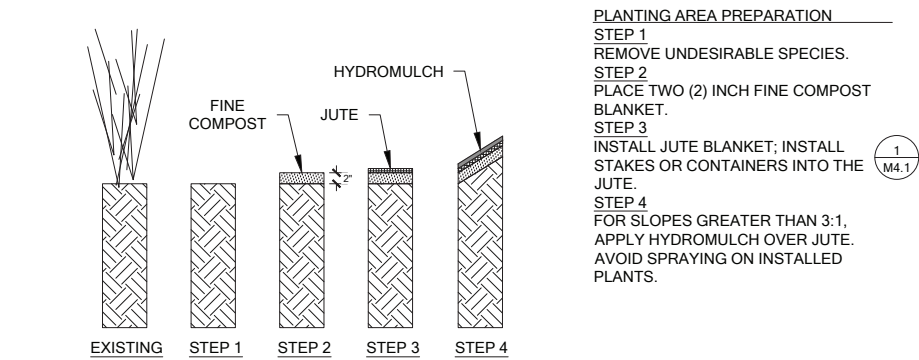
SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM	FILENAME
DESIGNED: SS/NL/AAM	
DRAFTED: AAM	
CHECKED: SS/AMC/MF	
JOB NUMBER:	

160414
SHEET NUMBER:
M4.1 OF 14

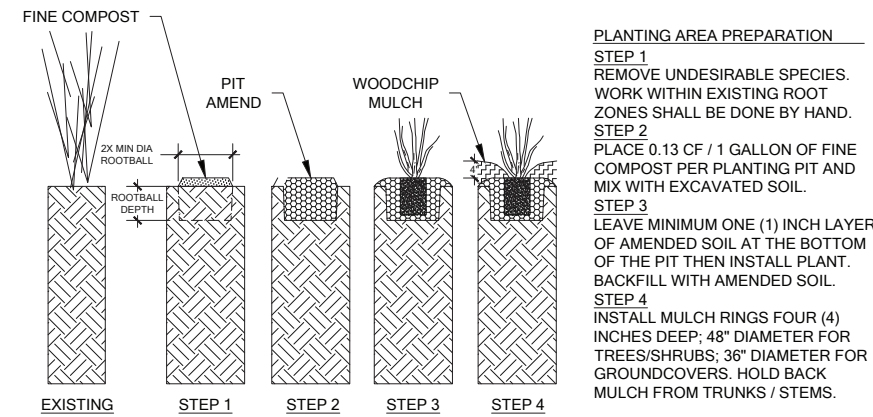
APRIL MULLCAHY	160414 RENTON LAKESIDE MITIGATION PLAN.DWG
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SOIL PREPARATION DETAILS



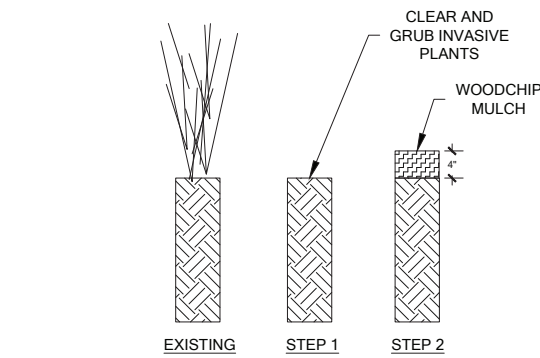
PLANTING AREA PREPARATION
STEP 1
REMOVE UNDESIRABLE SPECIES.
STEP 2
PLACE TWO (2) INCH FINE COMPOST BLANKET.
STEP 3
INSTALL JUTE BLANKET; INSTALL STAKES OR CONTAINERS INTO THE JUTE.
STEP 4
FOR SLOPES GREATER THAN 3:1, APPLY HYDROMULCH OVER JUTE. AVOID SPRAYING ON INSTALLED PLANTS.

A SOIL PREPARATION AREA A: AMEND TOPSOIL & INSTALL JUTE
Scale: NTS



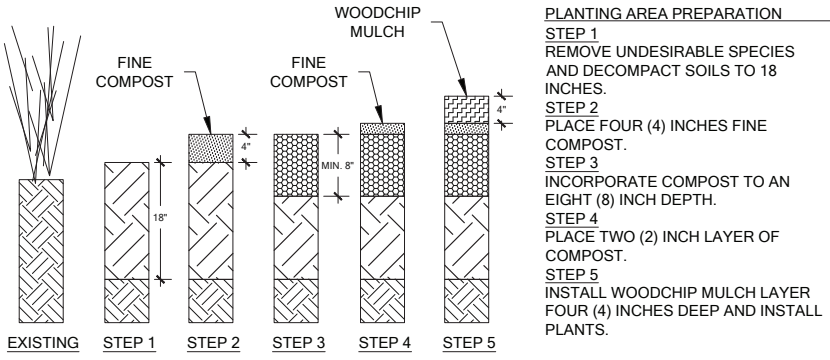
PLANTING AREA PREPARATION
STEP 1
REMOVE UNDESIRABLE SPECIES. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND.
STEP 2
PLACE 0.13 CF / 1 GALLON OF FINE COMPOST PER PLANTING PIT AND MIX WITH EXCAVATED SOIL.
STEP 3
LEAVE MINIMUM ONE (1) INCH LAYER OF AMENDED SOIL AT THE BOTTOM OF THE PIT THEN INSTALL PLANT. BACKFILL WITH AMENDED SOIL.
STEP 4
INSTALL MULCH RINGS FOUR (4) INCHES DEEP; 48" DIAMETER FOR TREES/SHRUBS; 36" DIAMETER FOR GROUNDCOVERS. HOLD BACK MULCH FROM TRUNKS / STEMS.

C SOIL PREPARATION AREA C: PIT AMEND EXISTING
Scale: NTS



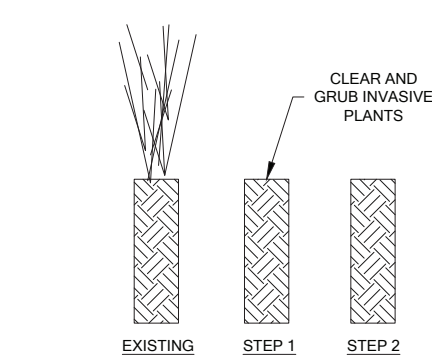
PLANTING AREA PREPARATION
STEP 1
CLEAR AND GRUB INVASIVE PLANTS PER STANDARD BMPS. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND. REMOVE CLIPPINGS OFFSITE.
STEP 2
PLACE FOUR (4) INCHES WOODCHIP MULCH AND INSTALL PLANTS PER PLANTING PLAN ON SHEET M5.1.

E SOIL PREPARATION AREA E: WETLAND RESTORATION SHRUBS
Scale: NTS



PLANTING AREA PREPARATION
STEP 1
REMOVE UNDESIRABLE SPECIES AND DECOMPACT SOILS TO 18 INCHES.
STEP 2
PLACE FOUR (4) INCHES FINE COMPOST.
STEP 3
INCORPORATE COMPOST TO AN EIGHT (8) INCH DEPTH.
STEP 4
PLACE TWO (2) INCH LAYER OF COMPOST.
STEP 5
INSTALL WOODCHIP MULCH LAYER FOUR (4) INCHES DEEP AND INSTALL PLANTS.

B SOIL PREPARATION AREA B: DECOMPACT AND AMEND TOPSOIL
Scale: NTS



PLANTING AREA PREPARATION
STEP 1
CLEAR AND GRUB INVASIVE PLANTS PER STANDARD BMPS. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND. REMOVE CLIPPINGS OFFSITE.
STEP 2
SMOOTH SURROUNDING SURFACE AND HYDROSEED UNIFORMLY AT 1 LB PER 1,000 SF.
NOTE:
SOIL AMENDMENT MAY BE ADDED ON AN AS-NEEDED BASIS, TO BE REVIEWED AND APPROVED BY THE RESTORATION SPECIALIST.

D SOIL PREPARATION AREA D: WETLAND RESTORATION SEEDS
Scale: NTS

NOXIOUS WEED REMOVAL & CONTROL NOTES

NOTE:
1. ALL INVASIVE PLANTS TO BE DISPOSED OF OFF-SITE. NO INVASIVE SPECIES SHALL BE CHIPPED FOR REUSE AS MULCH.
2. CONTROL SHALL INCLUDE, BUT NOT BE LIMITED TO:

REMOVE JAPANESE KNOTWEED:

1. REMOVAL MUST BE DONE ACCORDING TO KING COUNTY NOXIOUS WEED CONTROL PROGRAM BEST MANAGEMENT PRACTICES BY QUALIFIED INDIVIDUALS.
2. REFER TO KING COUNTY NOXIOUS WEED REGULATORY GUIDELINES FOR HERBICIDE USE IN WETLAND BUFFERS.
3. CANE INJECTION OF HERBICIDE IS PREFERRED, AS IT HAS THE HIGHEST SUCCESS RATE.
4. AFTER CANES HAVE DIED, THEY SHOULD BE DUG UP AND DISPOSED OFF-SITE AT A PROFESSIONAL FACILITY.
5. REVEGETATE PER PLANTING PLAN. COVER WITH WOODCHIP MULCH FOUR INCHES DEEP.
6. MONITOR SITE THROUGHOUT GROWING SEASON FOR EMERGING CANES AND GRUB OUT OR SPOT SPRAY ANY NEW PLANTS.

REMOVE REED CANARYGRASS:

1. DIG WITH HAND TOOLS ALL REED CANARYGRASS RHIZOMES FROM THE PLANTING AREA.
2. REED CANARYGRASS CAN RESPROUT FROM BELOW-GROUND PORTIONS, SO ALL RHIZOMES SHALL BE GRUBBED OUT. AROUND SIGNIFICANT VEGETATION TO REMAIN, REED CANARYGRASS SHALL BE GRUBBED OUT BY HAND TO MINIMIZE DISRUPTION TO ADJACENT ROOTS.
3. AFTER REED CANARYGRASS HAS BEEN REMOVED, AREA SHOULD BE MULCHED OR COVERED WITH JUTE AND PLANTED PER PLAN.
4. DISPOSE OF REMOVED MATERIAL OFF-SITE AT A PROFESSIONAL FACILITY.

REMOVE HIMALAYAN / EVERGREEN BLACKBERRY:

1. REMOVAL MUST BE DONE ACCORDING TO KING COUNTY NOXIOUS WEED CONTROL PROGRAM BEST MANAGEMENT PRACTICES BY QUALIFIED INDIVIDUALS.
2. REFER TO KING COUNTY NOXIOUS WEED REGULATORY GUIDELINES FOR HERBICIDE USE IN WETLAND BUFFERS.
3. FOR LARGE INFESTATIONS: APPLY APPROVED HERBICIDE. MOW AFTER PLANTS ARE DEAD AND BROWN.
4. FOR SMALL INFESTATIONS: CUT ABOVE-GROUND PORTION OF BLACKBERRY AND REMOVE OFF-SITE. ENSURE THAT NO NATIVE PLANTS ARE REMOVED. DIG UP OR PULL THE REMAINING ROOT BALL. ENSURE THAT NO NATIVE PLANT ROOTS ARE DAMAGED. REPLACE ANY DIVOTS CREATED WHEN REMOVING THE PLANT WITH APPROVED TOPSOIL.
5. CANES SHALL BE REMOVED FROM CANOPY OF TREES TO REMAIN TO THE EXTENT FEASIBLE AS DETERMINED BY THE RESTORATION SPECIALIST.
6. ALL CANES SHALL BE CUT BACK AND REMOVED WITHIN THE TEN (10) FEET ADJACENT TO THE PLANTING AREA, INCLUDING TREE CANOPY. CANES SHALL BE PULLED AND REMOVED OFF-SITE.
7. REVEGETATE PER PLANTING PLAN. COVER WITH WOODCHIP MULCH FOUR INCHES DEEP OR JUTE AS SPECIFIED IN THE SOIL PREPARATION PLAN.
8. MONITOR SITE FOR SEVERAL YEARS FOR EMERGING CANES GROWING FROM SEEDBANK OR RHIZOMES. GRUB OUT AND REMOVE ANY NEW PLANTS OR TREAT WITH APPROVED HERBICIDE. CONTINUE TO CUT BACK CANES TEN (10) FEET FROM THE PLANTING AREA.

REMOVE ENGLISH IVY:

1. PHYSICALLY REMOVE ALL ENGLISH IVY VINES AND ROOTS FROM THE PLANTING AREA.
2. IF GROWING ON TREE TRUNKS, CUT VINES TO HEIGHT OF 4 FEET OFF GROUND. DO NOT PULL DOWN FROM TREE CROWNS.
3. IVY CAN RESPROUT FROM BELOW-GROUND PORTIONS; ALL ROOTS SHALL BE GRUBBED OUT BY HAND TO MINIMIZE DISRUPTION TO ADJACENT ROOTS.
4. IVY SHALL BE CUT AROUND THE BASE OF EACH TREE TO PREVENT THE IVY FROM GIRDLING THE TREES. REMOVE STANDING VINES FROM THE LOWER 4 FEET OF EVERY TREE TRUNK THAT CONTAINS ANY IVY.
5. AFTER IVY HAS BEEN REMOVED, AREA SHOULD BE MULCHED AND PLANTED PER PLAN.
6. DISPOSE OF REMOVED MATERIAL PROPERLY OFF SITE.

REMOVE ENGLISH HOLLY:

1. FOR SMALL PLANTS, DIG OR PULL UP PLANT, TAKING CARE THAT ROOTS ARE REMOVED.
2. FOR LARGER PLANTS, CUT TREE AT BASE.
3. IMMEDIATELY AFTER CUTTING, APPLY HERBICIDE CONTAINING THE ACTIVE INGREDIENT GLYPHOSATE DIRECTLY ONTO THE CUT PORTION OF THE STUMP. APPLICATION OF HERBICIDE SHOULD BE DONE BY A WASHINGTON STATE CERTIFIED APPLICATOR AND SHOULD BE DONE FOLLOWING MANUFACTURERS RATES AND INSTRUCTIONS.
4. DISPOSE OF REMOVED MATERIAL PROPERLY OFF SITE.



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Kirkland WA 98033
p 425.822.5242 f 425.827.8136
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Science & Design

MAPLE VALLEY ASPHALT FACILITY

MITIGATION PLAN
KAREN DEAL, LAKESIDE INDUSTRIES

18825 RENTON MAPLE VALLEY RD SE
UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)

SUBMITTALS & REVISIONS		BY	DATE	DESCRIPTION
NO.	1	AAM	08-27-2018	PERMIT SUBMITTAL
	2	AAM	06-04-2020	REVISED PERMIT SUBMITTAL V2

GENERAL NOTES:

NOT FOR
CONSTRUCTION

SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
DRAFTED: AAM
CHECKED: SS/AMC/MF
JOB NUMBER:

160414

SHEET NUMBER:

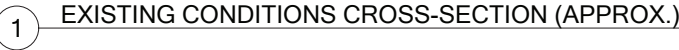
M4.2 OF 14



MAPLE VALLEY ASPHALT FACILITY

KAREN DEAL, LAKESIDE INDUSTRIES

18825 RENTON MAPLE VALLEY RD SE
UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)



Scale: NTS

1. CONTRACTOR SHALL IDENTIFY EXTENTS OF PLACED FILL IN FIELD AND LOCATE TOP OF BANK PRIOR TO REMOVING MATERIAL.
2. SEE SHEET M3.0 FOR APPROXIMATE EXTENT OF FILL.
3. SEE SHEET M5.2 FOR PLANT SCHEDULE AND QUANTITIES.
4. CONTRACTOR SHALL FLAG AND SURVEY WETLAND AND STREAM BOUNDARIES PRIOR TO STARTING WORK.
5. CONTRACTOR SHALL MARK CLEARING LIMITS.
6. TESC WILL BE INSTALLED AND INSPECTED PRIOR TO ANY GROUND DISTURBING ACTIVITIES, PER CIVIL PLANS.



Scale: NTS

1. EXCAVATE BANK AS SHOWN.
2. PLACE COIR FABRIC UNDER AREA TO BE FILLED AND EXTEND INTO THE STREAM CHANNEL.
3. MIX EXCAVATED GRAVELLY/SANDY FILL MATERIAL WITH COMPOST AT A 2:1 RATIO (FILL:COMPOST).
4. PLACE 8 INCHES OF SOIL MIXTURE OVER FABRIC.
5. FOLD FABRIC BACK OVER SOIL MIXTURE AND INTO THE BANK TO FORM AN 8-INCH COIR LIFT.
6. DRIVE LINE STAKING THROUGH COIR LIFT, EXTENDING INTO THE CHANNEL. USE 3 STAKES PER LINEAR FOOT.
7. PLACE 2 INCHES OF SOIL MIXTURE OVER COIR LIFT.
8. PLACE CONTAINERIZED ROOTED PLANT STOCK HORIZONTALLY, AS SHOWN. USE 1 PLANT PER LINEAR FOOT.
9. PLACE LOG AS SHOWN.
10. STAPLE FABRIC TO LOG AND DRAPE FABRIC OVER STREAM CHANNEL.
11. COMPLETE FILL WITH SOIL MIXTURE TO FORM STREAMBANK.
12. DRAW FABRIC BACK OVER PLACED BANK FILL AND STAKE TO SECURE.
13. PLANT THROUGH THE BANK FABRIC, CUTTING SMALL HOLES AS NEEDED.
14. SEE PLANT SCHEDULE ON SHEET M5.3.

[illegible]

GENERAL NOTES:

NOT FOR
CONSTRUCTION

SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
DRAFTED: AAM
CHECKED: SS/AMC/MF
JOB NUMBER:

160414

SHEET NUMBER:

M4.3 OF 14

STREAMBANK RESTORATION

LEGEND

EXISTING FEATURES

- WETLAND BOUNDARY (DELINEATED)
- WETLAND BOUNDARY (NOT DELINEATED)
- STREAM OHWM (DELINEATED)
- STREAM OHWM (NOT DELINEATED)
- PROPERTY BOUNDARY

PROPOSED FEATURES

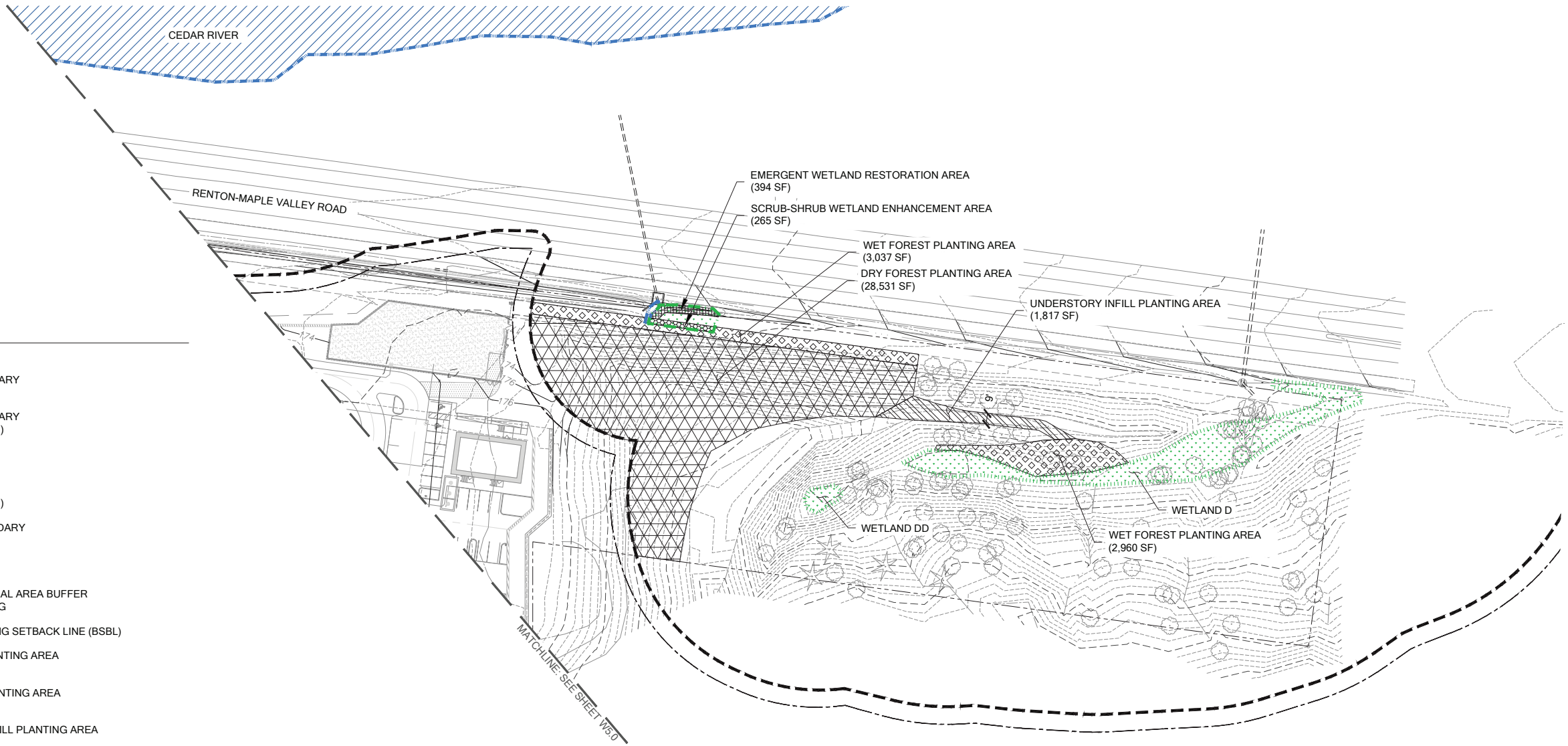
- COMBINED CRITICAL AREA BUFFER AFTER AVERAGING
- MODIFIED BUILDING SETBACK LINE (BSBL)
- DRY FOREST PLANTING AREA (154,252 SF)
- WET FOREST PLANTING AREA (24,706 SF)
- UNDERSTORY INFILL PLANTING AREA (3,431 SF)
- EMERGENT WETLAND RESTORATION AREA (394 SF)
- SCRUB-SHRUB WETLAND ENHANCEMENT AREA (265 SF)

PLANTING NOTES

- SEE SITE PREPARATION PLAN ON SHEETS M4.0 AND M4.1.
- SEE SHEET M5.2 FOR PLANT SCHEDULE.
- SEE SHEET M5.3 FOR PLANT INSTALLATION SPECIFICATIONS AND PLANTING DETAILS.
- ALL PLANTING AREAS SHALL RECEIVE A MINIMUM OF 1" OF WATER PER WEEK FOR THE FIRST TWO CONSECUTIVE SUMMERS (JUNE 1 - SEPT 15) FOLLOWING INSTALLATION.

PLANTING PLAN (2 OF 2)

SCALE: 1" = 50' WHEN PRINTED AT 24" x 36"



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SUBMITTALS & REVISIONS		NO.	DATE	DESCRIPTION	BY
		1	08-27-2018	PERMIT SUBMITTAL	AAM
		2	06-04-2020	REVISED PERMIT SUBMITTAL V2	AAM

GENERAL NOTES:

NOT FOR
CONSTRUCTION

SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
DRAFTED: AAM
CHECKED: SS/AMC/MF
JOB NUMBER:

160414

SHEET NUMBER:

M5.1 OF 14

PLANT SCHEDULES



DRY FOREST (154,252 SF)

TREES	QTY	SPACING	SIZE
ABIES GRANDIS / GRAND FIR	510	9 FT O.C.	2 GAL.
ACER MACROPHYLLUM / BIGLEAF MAPLE	510	9 FT O.C.	2 GAL.
PINUS CONTORTA / SHORE PINE	510	9 FT O.C.	2 GAL.
PRUNUS EMARGINATA / BITTER CHERRY	230	9 FT O.C.	2 GAL.
PSEUDOTSUGA MENZIESII / DOUGLAS FIR	510	9 FT O.C.	2 GAL.
SHRUBS			
AMELANCHIER ALNIFOLIA / WESTERN SERVICEBERRY	330	6 FT O.C.	1 GAL.
CORYLUS CORNUTA / BEAKED HAZELNUT	330	6 FT O.C.	1 GAL.
HOLODISCUS DISCOLOR / OCEANSPRAY	330	6 FT O.C.	1 GAL.
MAHONIA AQUIFOLIUM / TALL OREGON GRAPE	330	6 FT O.C.	1 GAL.
FRANGULA PURSHIANA / CASCARA	330	6 FT O.C.	1 GAL.
ROSA NUTKANA / NOOTKA ROSE	330	6 FT O.C.	1 GAL.
RUBUS PARVIFLORUS / THIMBLEBERRY	330	6 FT O.C.	1 GAL.
SYMPHORICARPOS ALBUS / SNOWBERRY	330	6 FT O.C.	1 GAL.
GROUNDCOVERS			
ACHILLEA MILLEFOLIUM / YARROW	2,750	4 FT O.C.	4" CONT.
CHAMAENERION ANGUSTIFOLIUM / FIREWEED	2,750	4 FT O.C.	4" CONT.
FRAGARIA CHILOENSIS / BEACH STRAWBERRY	2,750	4 FT O.C.	4" CONT.
LUPINUS POLYPHYLLUS / BIG-LEAF LUPINE	2,750	4 FT O.C.	4" CONT.

NOTES

- ALL SHRUBS SHOULD BE CLUMPED IN GROUPS OF 5 TO 10 INDIVIDUALS PER SPECIES.
- PLACE GROUNDCOVERS IN CLUSTERS OF 30 TO 40 PLANTS, 4 FT O.C. THROUGHOUT PLANTING AREA.



STREAMBANK RESTORATION (~ 360 SF)

TREES	QTY	SPACING	SIZE
ACER MACROPHYLLUM / BIGLEAF MAPLE	3	9 FT O.C.	2 GAL.
ALNUS RUBRA / RED ALDER	3	9 FT O.C.	2 GAL.
SHRUBS			
CORNUS SERICEA / RED-OSIER DOGWOOD	60	1 FT O.C.	1 GAL.
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	6	6 FT O.C.	1 GAL.
SYMPHORICARPOS ALBUS / SNOWBERRY	6	6 FT O.C.	1 GAL.
GROUNDCOVERS			
FRAGARIA VESCA / WOODS STRAWBERRY	13	4 FT O.C.	4" CONT.
POLYSTICHUM MUNITUM / SWORD FERN	13	4 FT O.C.	4" CONT.
LIVE STAKES			
SALIX SITCHENSIS / SITKA WILLOW	180	3 PER LF	3' MIN.

NOTES

- SEE STREAMBANK RESTORATION DETAIL AND CONSTRUCTION SEQUENCE ON SHEET M4.3.
- PLANT ALL CONTAINERIZED CORNUS SERICEA HORIZONTALLY UNDER THE INSTALLED LOG, SPACED 1 PER LINEAR FOOT PER STREAMBANK RESTORATION DETAIL.
- LIVE STAKES SHALL BE INSTALLED HORIZONTALLY IN THE LOWEST SOIL LIFT PER STREAMBANK RESTORATION DETAIL.
- SHRUBS SHOULD BE PLANTED IN GROUPS OF 3 PER SPECIES.
- ALL GROUNDCOVERS SHOULD BE CLUMPED IN GROUPS OF 5 TO 7 INDIVIDUALS PER SPECIES.



WET FOREST (24,706 SF)

TREES	QTY	SPACING	SIZE
ACER MACROPHYLLUM / BIGLEAF MAPLE	60	9 FT O.C.	2 GAL.
ALNUS RUBRA / RED ALDER	60	9 FT O.C.	2 GAL.
PICEA SITCHENSIS / SITKA SPRUCE	60	9 FT O.C.	2 GAL.
PINUS CONTORTA / SHORE PINE	60	9 FT O.C.	2 GAL.
THUJA PLICATA / WESTERN RED CEDAR	60	9 FT O.C.	2 GAL.
SHRUBS			
CORNUS SERICEA / RED-OSIER DOGWOOD	100	6 FT O.C.	1 GAL.
LONICERA INVOLUCRATA / TWINBERRY	100	6 FT O.C.	1 GAL.
PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	100	6 FT O.C.	1 GAL.
ROSA NUTKANA / NOOTKA ROSE	100	6 FT O.C.	1 GAL.
SALIX SCOULERIANA / SCOULER'S WILLOW	100	6 FT O.C.	1 GAL.
SYMPHORICARPOS ALBUS / SNOWBERRY	100	6 FT O.C.	1 GAL.
GROUNDCOVERS			
FRAGARIA CHILOENSIS / BEACH STRAWBERRY	800	4 FT O.C.	4" CONT.
LUPINUS POLYPHYLLUS / BIG-LEAF LUPINE	800	4 FT O.C.	4" CONT.
LIVE STAKES			
SALIX SCOULERIANA / SCOULER'S WILLOW	1,200	18" O.C.	3' MIN.
SALIX SITCHENSIS / SITKA WILLOW	1,200	18" O.C.	3' MIN.

NOTES

- THE NEAREST 3 FEET TO THE BOUNDARY OF STREAM B AND WETLANDS A, B, C, AND D SHOULD BE PLANTED WITH LIVE STAKES USING TRIANGULAR SPACING.
- THE REMAINDER OF THE PLANTING AREA SHOULD BE PLANTED WITH CONTAINERIZED PLANT STOCK.
- ALL SHRUBS AND GROUNDCOVERS SHOULD BE CLUMPED IN GROUPS OF 5 TO 7 INDIVIDUALS PER SPECIES.



UNDERSTORY INFILL (3,431 SF)

TREES	QTY	SPACING	SIZE
PSEUDOTSUGA MENZIESII / DOUGLAS-FIR	30	9 FT O.C.	2 GAL.
SHRUBS			
ACER CIRCINATUM / VINE MAPLE	20	6 FT O.C.	1 GAL.
CORYLUS CORNUTA / WESTERN HAZEL	20	6 FT O.C.	1 GAL.
OEMLERIA CERASIFORMIS / INDIAN PLUM	20	6 FT O.C.	1 GAL.
SAMBUCUS RACEMOSA / RED ELDERBERRY	20	6 FT O.C.	1 GAL.
GROUNDCOVERS			
DICENTRA FORMOSA / BLEEDING HEART	125	4 FT O.C.	4" CONT.
TELLIMA GRANDIFLORA / FRINGECUP	125	4 FT O.C.	4" CONT.

NOTES

- PLANT TREES, SHRUBS, AND GROUNDCOVERS TO FILL IN GAPS IN THE NATIVE UNDERSTORY CREATED BY ACCESS TO THE KNOTWEED REMOVAL AND REPLANTING AREA.
- ALL SHRUBS AND GROUNDCOVERS SHOULD BE CLUMPED IN GROUPS OF 5 TO 7 INDIVIDUALS PER SPECIES.



SCRUB-SHRUB WETLAND ENHANCEMENT (265 SF)

SHRUBS	QTY	SPACING	SIZE
CORNUS SERICEA / RED-OSIER DOGWOOD	3	6 FT O.C.	1 GAL.
LONICERA INVOLUCRATA / TWINBERRY	3	6 FT O.C.	1 GAL.
ROSA NUTKANA / NOOTKA ROSE	3	6 FT O.C.	1 GAL.
GROUNDCOVERS			
ATHYRIUM FELIX-FEMINA / LADY FERN	10	4 FT O.C.	4" CONT.
CAREX OBNUPTA / SLOUGH SEDGE	10	4 FT O.C.	4" CONT.
LIVE STAKES			
SALIX SITCHENSIS / SITKA WILLOW	34	3 FT O.C.	3' MIN.

NOTES

- SHRUBS SHOULD BE CLUMPED IN GROUPS OF 3 PER SPECIES.
- GROUNDCOVERS SHOULD BE CLUMPED IN GROUPS OF 5 TO 7 INDIVIDUALS PER SPECIES.



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SUBMITTALS & REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08-27-2018	PERMIT SUBMITTAL	AAM
2	06-04-2020	REVISED PERMIT SUBMITTAL V2	AAM

GENERAL NOTES:

NOT FOR
CONSTRUCTION

SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
SCALE ACCORDINGLY.

PROJECT MANAGER: HM
DESIGNED: SS/NL/AAM
DRAFTED: AAM
CHECKED: SS/AMC/MF
JOB NUMBER:

160414

SHEET NUMBER:

M5.2 OF 14

PLANT SCHEDULES

PLANT INSTALLATION SPECIFICATIONS

- GENERAL NOTES
- QUALITY ASSURANCE
- PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
 - PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
 - TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
 - NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 2018 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.
- DEFINITIONS
- PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC.; SPRIGS, PLUGS, AND LINERS.
 - CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.
- SUBSTITUTIONS
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
 - SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
 - IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
 - SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.
- INSPECTION
- PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
 - PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
 - THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.
- MEASUREMENT OF PLANTS
- PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
 - HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
 - WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).
- SUBMITTALS
- PROPOSED PLANT SOURCES
- WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

- PRODUCT CERTIFICATES
- PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
 - HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

- PLANT MATERIALS
- TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
 - SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
 - HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
 - LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

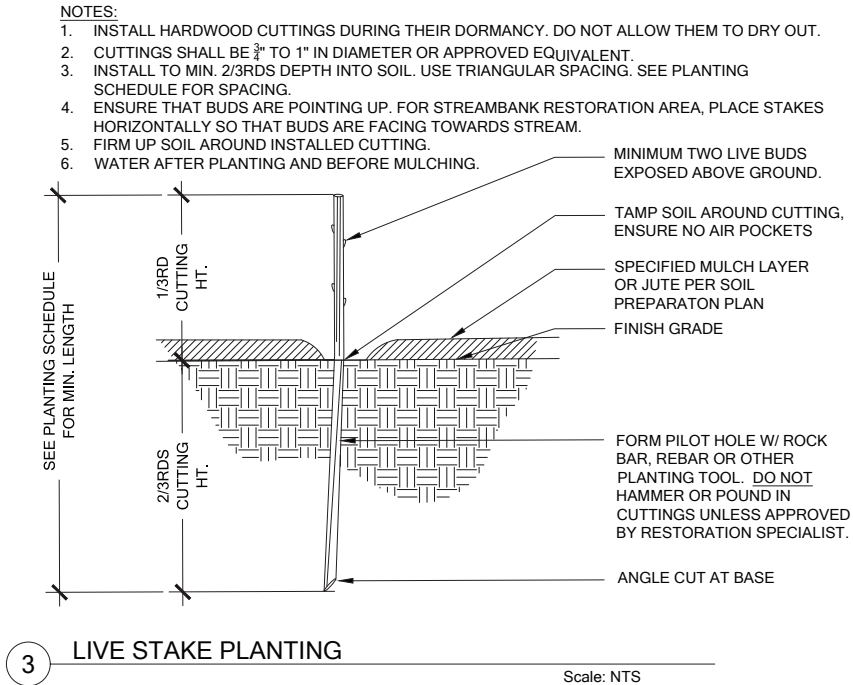
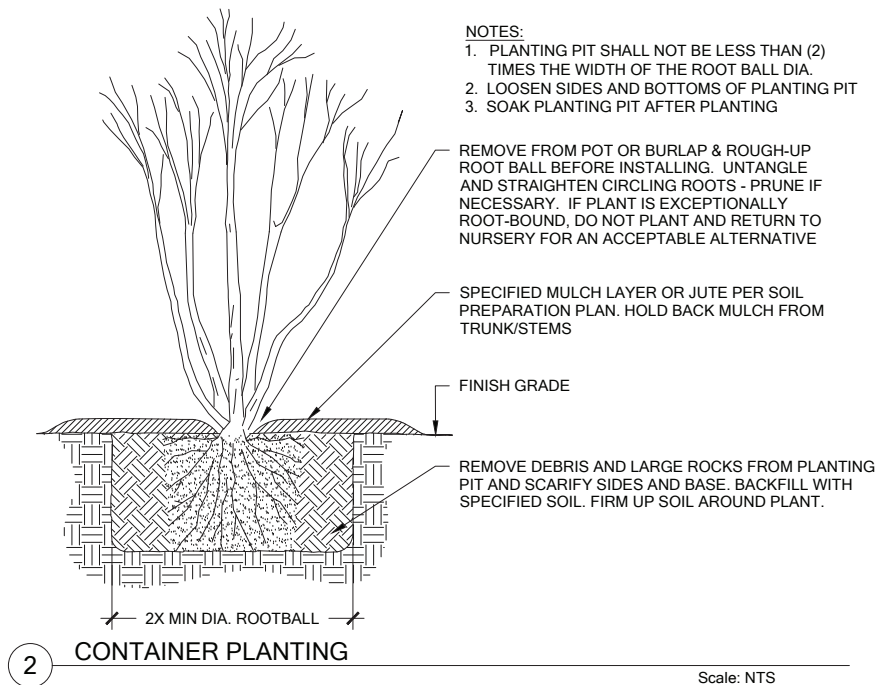
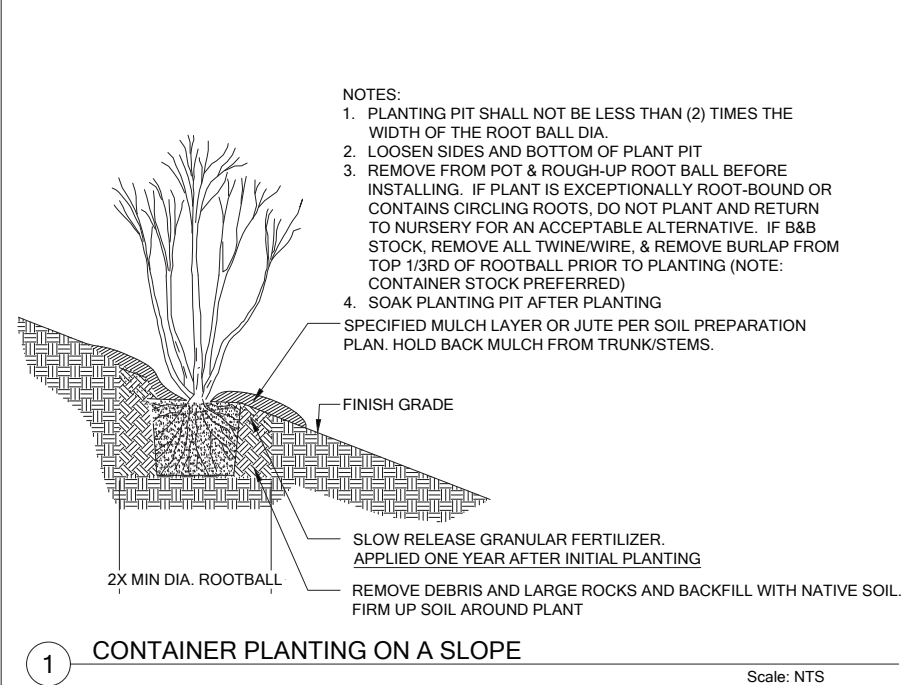
- REPLACEMENT
- PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
 - PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

- GENERAL
- PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
 - PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

- ROOT TREATMENT
- CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
 - PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
 - ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.



MAPLE VALLEY ASPHALT FACILITY

MITIGATION PLAN

KAREN DEAL, LAKESIDE INDUSTRIES

18825 RENTON MAPLE VALLEY RD SE

UNINCORPORATED KING COUNTY, WA 98058 (NEAR RENTON)

SUBMITTALS & REVISIONS		BY	DATE	DESCRIPTION
NO.	1	AAW	08-27-2018	PERMIT SUBMITTAL
2	AAW	06-04-2020	REVISED PERMIT SUBMITTAL V2	

GENERAL NOTES:

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SHEET SIZE:
ORIGINAL PLAN IS 24" X 36".
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DATE: 09/15/2020
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FILE NAME: 180414 RENTON LAKESIDE MITIGATION PLAN.DWG

Mitigation Notes

Project Summary

The proposed site development will occupy a smaller footprint than the prior use and associated site clearing. Proposed buffer encroachment will be mitigated through buffer averaging and enhancement to restore previously cleared and degraded buffer areas. Other site improvements include decommissioning an existing stormwater outfall to stream B and restoring that streambank, restoring the streambank of stream A above the existing well house, and improvements in the SR-169 right-of-way.

Specifically, as part of a proposed redevelopment plan, 324 square feet of wetland will have temporary impacts from grading along the roadside; 9 square feet of stream C will receive shading from the installation of a pre-cast 3-sided bridge; 6,362 square feet of wetland and stream buffer will have permanent impacts from highway expansion and the installation of an access drive to the existing well house; 6,128 square feet of wetland and stream buffer will have temporary impacts from grading along the highway and temporary access to the restoration area along stream B; and previously placed fill along stream B will be removed and the streambank will be rebuilt using bioengineering methods.

To offset proposed impacts, wetland impacts will be restored in place and wetland enhancement will occur at a greater than 1:1 ratio for a total of 660 square feet; the streambanks of stream C will be enhanced through the removal of reed canarygrass and planting native vegetation; 182,390 square feet of stream buffer and wetland buffer will be enhanced through removal of invasive vegetation and planting of native vegetation at a ratio of 14.6:1. Monitoring and maintenance of planted vegetation will be performed until establishment. Stream buffer and wetland buffer areas also encompass a wildlife habitat network area to be enhanced.

Goals and Objectives

Goal: Restore habitat and water quality functions that may have been degraded as a result of impacts resulting from the long-term industrial use of the subject parcel.

Objectives:

- 1. Restore soils removed or compacted throughout the buffer area.
- 2. Establish dense and diverse native tree, shrub, and groundcover vegetation throughout on-site stream and wetland buffers.
- 3. Remove and control invasive weeds from restoration areas.
- 4. Remove placed fill in stream A buffer and rebuild streambank to withstand seasonal flows.
- 5. Restore and enhance the R.O.W. wetland to compensate for temporary wetland impacts.

Performance Standards

The performance standards (PS) listed below will be used to judge the success of the plan over time. If the standards are met at the end of the three-year monitoring period, the restoration site will be considered successful and the project will have met all critical area permitting obligations.

PS 1. Soils:

- A. Soils in the buffers will be decompact prior to planting, except for the infill planting areas.
- B. Soils in the buffers will be amended with compost prior to planting.

PS 2. Survival/Diversity:

- A. 100% survival of all woody plantings at the end of year one. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers. Survival beyond year one is difficult to track. Therefore, a diversity standard is proposed in place of survival (below).

PS 3. Native Woody Vegetation Cover:

- A. Achieve at least 30% cover of native woody species by the end of year 2. Native volunteer species may count toward this standard.
- B. Achieve at least 60% cover of native woody species by the end of year 3. Native volunteer species may count toward this standard.

PS 4. Diversity:

- A. Establish at least 2 native tree species, 4 native shrub species, and 2 native groundcover species by the end of year 3.

PS 5. Invasive Species Standards:

- A. No more than 10% cover of invasive species except reed canarygrass monocultures in any of the planting areas, in any monitoring year. More than 5% cover of invasive weeds in any year will trigger maintenance weeding. Within reed canarygrass monocultures driplines of installed plants must be kept relatively clear of reed canarygrass.
- B. Knotweed must be eradicated from the mitigation area. Any occurrence of knotweed will trigger maintenance.

AS-Built Plan

An as-built plan will be prepared within 30 days of substantially complete construction of the restoration area. The as-built plan will document substantial conformance with these plans and also will disclose any substitutions or other non-critical departures. The as-built plan will establish baseline plant installation quantities (based on sample counts or invoices), and photo points that will be used throughout the monitoring period to measure the performance standards over time. The as-built documentation should include a markup of the original plan noting any departures, plus the location of photo points.

Monitoring Plan

A three-year monitoring plan is proposed to ensure success of all required planting. Maintenance and corrective actions will be conducted as necessary based on monitoring results over time.

Monitoring Methods

This monitoring program is designed to track the success of the restoration site over time by measuring the degree to which the performance standards listed above are being met. Monitoring shall occur twice annually for three years. A spring monitoring visit shall record necessary replanting, weeding, invasive control, and other maintenance needs. The restoration specialist will notify the owner and/or maintenance crews of necessary early season maintenance. The second visit shall occur in late summer or fall and contain the bulk of the monitoring work. The annual monitoring report will relate the following information:

- 1. General summary of the spring visit.
- 2. First-year counts of surviving and dead/dying woody plants.
- 3. Estimates of native woody species cover in restoration areas using the cover class method.
- 4. Estimates of invasive species cover in restoration areas using the cover class method.
- 5. Counts of established native species to determine site diversity.
- 6. Notes and/or sketches of invasive weeds or bare areas.
- 7. Photographic documentation from established reference points.
- 8. Intrusions into the planting areas, vandalism, trash, and other actions detrimental to the overall health of the restoration area.
- 9. Recommendations for maintenance in the restoration area.

Maintenance

This site will be maintained for three years following completion of the construction.

- 1. Replace each plant found dead in the summer monitoring visits during frost-free periods only in the upcoming fall dormant season (October 15 to March 1) for the first monitoring year. Replace plants as directed in subsequent monitoring reports to achieve cover standards.
- 2. Follow the recommendations noted in the spring monitoring site visit.
- 3. General weeding for all planted areas:
 - A. At least twice yearly, remove all competing grass and weeds, including roots, from beneath each installed plant and any desirable volunteer vegetation to a distance of 18 inches from the main plant stem. Weeding should occur at least twice during the spring and summer. Frequent weeding will result in lower mortality and lower plant replacement costs.
 - B. More frequent weeding may be necessary depending on weed conditions that develop after plan installation.
 - C. Do not weed the area near the plant bases with string trimmer (weed whacker/weed eater). Native plants are easily damaged or killed, and weeds easily recover after trimming.
- 4. Apply slow release granular, aquatic safe fertilizer to each installed plant annually in the spring (by June 1) of years 2 through 3.
- 5. Mulch the weeded areas beneath each plant with woodchips as necessary to maintain a 4-inch-thick mulch layer and keep down weeds where woodchips are specified in the soil preparation plan.
- 6. All planting areas shall receive a minimum of 1" of water per week for the first two consecutive summers (June 1 - Sept 15) following installation.
- 7. Periodically inspect the channel of stream A adjacent to the streambank restoration area for accumulation of sediment, tree debris, or other detritus that could block the flow of water and cause a breach during high flows. Debris should be removed from the channel to maintain flow to the confluence with stream B.

Contingency Plans and Adaptive Management

These plans have been prepared to ensure success to the maximum practicable extent. Quality and consistency of installation, maintenance, weather pattern extremes, wildlife damage, vandalism and other factors can singly or in combination change conditions at mitigation sites and affect eventual success of these plans. Therefore, adaptive management should be employed to evaluate problems as they arise and develop flexible and practical solutions. Examples can include but are not limited to plant substitution, changes in target vegetation classes, soil amendment, and re-grading. As a last resort, modification of performance standards can be necessary. Any actions involving major departures from the original plan or goals and performance standards should be discussed and agreed to with regulatory agencies ahead of implementation.



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Science & Design

Maple Valley Asphalt Facility

Mitigation Plan
Karen Deal, Lakeside Industries

18825 Renton Maple Valley Rd SE
Unincorporated King County, WA 98058 (Near Renton)

Submittals & Revisions			By	
No.	Date	Description	AMM	AAM
1	08-27-2018	Permit Submittal		
2	06-04-2020	Revised Permit Submittal V2		

General Notes:

NOT FOR CONSTRUCTION

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FILENAME
1804H RENTON LAKESIDE MITIGATION PLAN.DWG

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6/15/2020 APRIL MULLCAHY

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APPENDIX B

Wetland Ratings

Wetland name or number: **Wetland A**

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland: Renton Maple Valley SE – Wetland A

Date of Site visit: 1/10/2017

Rated by: Nell Lund, Anna Hoenig Trained by Ecology? Yes ☒ No ☐

Date of Training: 10/2008, 10/2015

SEC: 19 TWSHP: 23N RGE: 16 Is S/T/R in Appendix D? Yes ☐ No ☒

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☐ III ☐ IV ☒

Category I = Score ≥ 70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions
Score for Hydrologic Functions
Score for Habitat Functions
TOTAL score for functions

8
6
15
29

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

Final Category (choose the “highest” category from above)

IV

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland A**

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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 wetland unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*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 rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (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**?

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

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

Wetland name or number: **Wetland A**

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 two years

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

☒ NO - go to 6

☐ YES – The wetland class is **Riverine**

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 your wetland. 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 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.

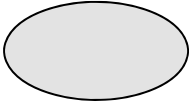
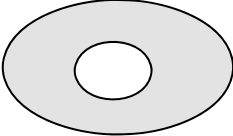
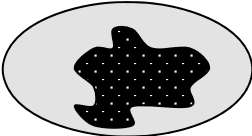
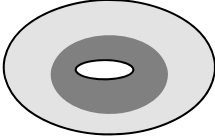
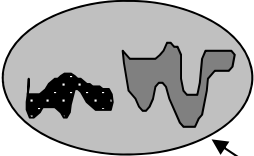
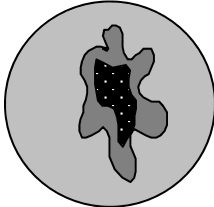
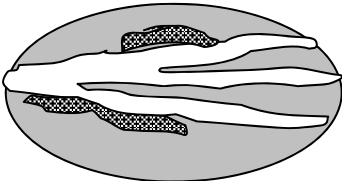
<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

D	Depressional and Flats Wetlands	Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 38)
D	D 1.1 Characteristics of surface water flows out of the wetland: <input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)points = 3 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanently flowing outlet.....points = 2 <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 1 <input type="checkbox"/> Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditch.....points = 1 <i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i>	1
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). <input type="checkbox"/> YES points = 4 <input checked="" type="checkbox"/> NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <input type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 95% of areapoints = 5 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 1/2 of areapoints = 3 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation <1/10 of areapoints = 0	3
D	D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> <input type="checkbox"/> Area seasonally ponded is > ½ total area of wetlandpoints = 4 <input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetlandpoints = 2 <input checked="" type="checkbox"/> Area seasonally ponded is < ¼ total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation.	0
D	Total for D 1 <i>Add the points in the boxes above</i>	4
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface <u>water coming into the wetland</u> that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input checked="" type="checkbox"/> Other: <u>industrial operations</u> YES multiply score in D 1. by 2 NO multiply score in D 1. by 1	(see p. 44) multiplier <u>2</u>
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 <i>Add score to table on p. 1</i>	8

D Depressional and Flats Wetlands		
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D	D 3.1 Characteristics of surface water flows out of the wetland unit <input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet).....points = 4 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanently flowing outlet .points = 2 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1 <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 0	0
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7 <input type="checkbox"/> The wetland is a “headwater” wetland”points = 5 <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5 <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3 <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap waterpoints = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ftpoints = 0	3
D	D 3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unitpoints = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.....points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unitpoints = 0 <input type="checkbox"/> Entire unit is in the FLATS classpoints = 5	0
D	Total for D 3 <i>Add the points in the boxes above</i>	3
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	<i>(see p. 49)</i> Multiplier 2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>	6

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) <i>Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <i>Add the number of vegetation types that qualify. If you have:</i> <div style="text-align: right;"> 4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1 1 structurepoints = 0 </div>	1
H 1.2. <u>Hydroperiods</u> (see p. 73) <i>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 acre to count. (see text for descriptions of hydroperiods)</i> <input checked="" type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <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	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i> <div style="text-align: right;"> If you counted: <input type="checkbox"/> > 19 species points = 2 <input checked="" type="checkbox"/> 5 - 19 species points = 1 <input type="checkbox"/> < 5 species points = 0 </div> <i>List species below if you want to:</i>	1

<p>H 1.4. Interspersion of habitats (see p. 76)</p> <p>Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><input type="checkbox"/> None = 0 points</p> </div> <div style="text-align: center;">  <p><input checked="" type="checkbox"/> Low = 1 point</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p><input type="checkbox"/> High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	1
<p>H 1.5. Special Habitat Features: (see p. 77)</p> <p>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland. <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) <u>and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) for at least 33 ft (10m).</u> <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present. <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.(structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants. <p><i>Note: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	1
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	5

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland. Points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above..... Points = 1</p>	1
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 1 mi of a lake greater than 20 acres?</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	2

<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland? <i>(NOTE: the connections do not have to be relatively undisturbed)</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acres). <input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full description in WDFW PHS report p. 152)</i> <input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. <input type="checkbox"/> Old-growth/Mature forests: <u>(Old-growth west of Cascade crest)</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. <u>(Mature forests.)</u> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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. <input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158.)</i> <input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. <input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161)</i> <input checked="" type="checkbox"/> 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. <input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A.)</i> <input type="checkbox"/> 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. <input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. <input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. <input checked="" type="checkbox"/> 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 >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long. <p style="margin-left: 40px;"> If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points </p> <p><i>Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.</i></p>	<p>4</p>
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Wetland name or number: **Wetland A**

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile.points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile.points = 0</p>	3
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	10
<p>TOTAL for H1 from page 14</p>	5
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	15

Wetland name or number: **Wetland A**

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category.

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = Go to SC 1.1</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> NO, not an estuarine wetland</p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The are aof <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p><input type="checkbox"/> S/T/R information from Appendix D – OR – <input checked="" type="checkbox"/> Accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p><input checked="" type="checkbox"/> NO</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input checked="" type="checkbox"/> NO = Not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.) <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – go to Q.2</p> Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – is not a bog for purpose of rating</p> Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)? <p><input type="checkbox"/> Yes – Is a bog for purpose of rating</p> <p><input type="checkbox"/> NO – go to Q.4</p> <p><i>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” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></p> Is the wetland forested (>30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO – is not a bog for purpose of rating</p> 	Cat. I

<p>SC 4.0 Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the 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> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p><i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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.</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surge 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> <p><input type="checkbox"/> YES – Go to SC 5.1 <input checked="" type="checkbox"/> NO – not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0 Interdunal Wetlands (see p. 93)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES – go to SC 6.1 <input checked="" type="checkbox"/> NO – not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its 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>SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1 .</p> <p>If you answered NO for all types enter "Not Applicable" on p.1.</p>	<p>NA</p>

Wetland name or number: **Wetland A**

Wetland name or number: **Wetland B**

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland: Renton Maple Valley SE – Wetland B

Date of Site visit: 1/10/2017

Rated by: Nell Lund, Anna Hoenig Trained by Ecology? Yes ☒ No ☐

Date of Training: 10/2008, 10/2015

SEC: 19 TWSHP: 23N RGE: 16 Is S/T/R in Appendix D? Yes ☐ No ☒

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ **II** ☐ **III** ☐ **IV** ☒

Category I = Score ≥ 70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30

Score for Water Quality Functions	16
Score for Hydrologic Functions	14
Score for Habitat Functions	17
TOTAL score for functions	47

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ **II** ☐ **Does not Apply** ☒

Final Category (choose the “highest” category from above)

III

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland B**

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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 wetland unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*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 rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (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**?

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

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

Wetland name or number: **Wetland B**

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 two years

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

☒ NO - go to 6

☐ YES – The wetland class is **Riverine**

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 your wetland. **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 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.

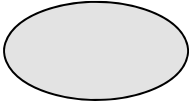
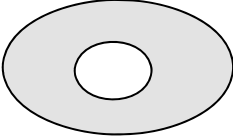
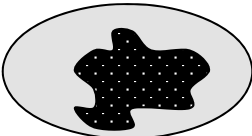
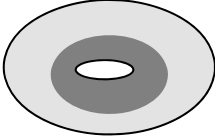
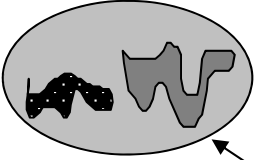
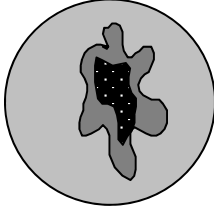
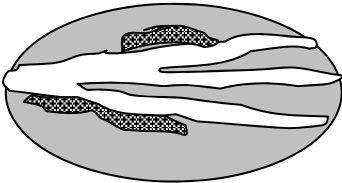
<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

D	Depressional and Flats Wetlands	Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 38)
D	D 1.1 Characteristics of surface water flows out of the wetland: <input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)points = 3 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanently flowing outlet.....points = 2 <input type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 1 <input type="checkbox"/> Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditch.....points = 1 <i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i>	3
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). <input type="checkbox"/> YES points = 4 <input checked="" type="checkbox"/> NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 95% of areapoints = 5 <input type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 1/2 of areapoints = 3 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation <1/10 of areapoints = 0	5
D	D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> <input type="checkbox"/> Area seasonally ponded is > ½ total area of wetlandpoints = 4 <input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetlandpoints = 2 <input checked="" type="checkbox"/> Area seasonally ponded is < ¼ total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation.	0
D	Total for D 1 <i>Add the points in the boxes above</i>	8
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface <u>water coming into the wetland</u> that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input checked="" type="checkbox"/> Other: <u>industrial operations</u> YES multiply score in D 1. by 2 NO multiply score in D 1. by 1	(see p. 44) multiplier <u>2</u>
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 <i>Add score to table on p. 1</i>	16

D Depressional and Flats Wetlands		
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D	D 3.1 Characteristics of surface water flows out of the wetland unit <input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet).....points = 4 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanentlyflowing outlet .points = 2 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1 <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> <input type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 0	4
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7 <input type="checkbox"/> The wetland is a “headwater” wetland”points = 5 <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5 <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3 <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap waterpoints = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ftpoints = 0	3
D	D 3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unitpoints = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.....points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unitpoints = 0 <input type="checkbox"/> Entire unit is in the FLATS classpoints = 5	0
D	Total for D 3 <i>Add the points in the boxes above</i>	7
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides <u>helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows</u> . Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	<i>(see p. 49)</i> Multiplier 2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>	14

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) <i>Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <p><i>Add the number of vegetation types that qualify. If you have:</i></p> <div style="text-align: right;"> 4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1 1 structurepoints = 0 </div>	1
H 1.2. <u>Hydroperiods</u> (see p. 73) <i>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 acre to count. (see text for descriptions of hydroperiods)</i> <ul style="list-style-type: none"> <input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <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 <div style="text-align: right;"> 4 or more types presentpoints = 3 3 types present.....points = 2 2 types present.....points = 1 1 types presentpoints = 0 </div>	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i> <p style="text-align: right;">If you counted: <input type="checkbox"/> > 19 species points = 2</p> <p style="text-align: right;"><input checked="" type="checkbox"/> 5 - 19 species points = 1</p> <p style="text-align: right;"><input type="checkbox"/> < 5 species points = 0</p> <p><i>List species below if you want to:</i></p>	1

<p>H 1.4. Interspersion of habitats (see p. 76)</p> <p>Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><input type="checkbox"/> None = 0 points</p> </div> <div style="text-align: center;">  <p><input checked="" type="checkbox"/> Low = 1 point</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p><input type="checkbox"/> High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	1
<p>H 1.5. Special Habitat Features: (see p. 77)</p> <p>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland. <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) for at least 33 ft (10m). <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present. <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.(structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants. <p><i>Note: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	0
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	4

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input checked="" type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland. Points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above..... Points = 1</p>	4
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 1 mi of a lake greater than 20 acres?</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	2

<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland? <i>(NOTE: the connections do not have to be relatively undisturbed)</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acres). <input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full description in WDFW PHS report p. 152)</i> <input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. <input type="checkbox"/> Old-growth/Mature forests: <u>(Old-growth west of Cascade crest)</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. <u>(Mature forests.)</u> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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. <input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158.)</i> <input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. <input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161)</i> <input checked="" type="checkbox"/> 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. <input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A.)</i> <input type="checkbox"/> 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. <input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. <input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. <input checked="" type="checkbox"/> 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 >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long. <p style="padding-left: 40px;"> If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points </p> <p><i>Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.</i></p>	<p>4</p>
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Wetland name or number: **Wetland B**

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile.points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile.points = 0</p>	3
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	13
<p>TOTAL for H1 from page 14</p>	4
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	17

Wetland name or number: **Wetland B**

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category.

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = Go to SC 1.1</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> NO, not an estuarine wetland</p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The are aof <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p><input type="checkbox"/> S/T/R information from Appendix D – OR – <input checked="" type="checkbox"/> Accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p><input checked="" type="checkbox"/> NO</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input checked="" type="checkbox"/> NO = Not a Heritage Wetland</p>	<p>Cat. I</p>
<p>SC 3.0 Bogs (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.) <ul style="list-style-type: none"> <input type="checkbox"/> Yes – go to Q.3 <input checked="" type="checkbox"/> NO – go to Q.2 Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <ul style="list-style-type: none"> <input type="checkbox"/> Yes – go to Q.3 <input checked="" type="checkbox"/> NO – is not a bog for purpose of rating Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)? <ul style="list-style-type: none"> <input type="checkbox"/> Yes – Is a bog for purpose of rating <input type="checkbox"/> NO – go to Q.4 <p><i>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” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></p> <ol style="list-style-type: none"> Is the wetland forested (>30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? <ul style="list-style-type: none"> <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO – is not a bog for purpose of rating 	<p>Cat. I</p>

<p>SC 4.0 Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the 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> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p><i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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.</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surge 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> <p><input type="checkbox"/> YES – Go to SC 5.1 <input checked="" type="checkbox"/> NO – not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0 Interdunal Wetlands (see p. 93)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES – go to SC 6.1 <input checked="" type="checkbox"/> NO – not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its 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>SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1 .</p> <p>If you answered NO for all types enter "Not Applicable" on p.1.</p>	<p>NA</p>

Wetland name or number: **Wetland B**

Wetland name or number: **Wetland C**

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland: Renton Maple Valley SE – Wetland C

Date of Site visit: 1/12/2017

Rated by: Nell Lund, Anna Hoenig Trained by Ecology? Yes ☒ No ☐

Date of Training: 10/2008, 10/2015

SEC: 19 TWSHP: 23N RGE: 16 Is S/T/R in Appendix D? Yes ☐ No ☒

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ **II** ☐ **III** ☒ **IV** ☐

Category I = Score ≥ 70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30

Score for Water Quality Functions	16
Score for Hydrologic Functions	6
Score for Habitat Functions	22
TOTAL score for functions	44

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ **II** ☐ **Does not Apply** ☒

Final Category (choose the “highest” category from above)

III

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input checked="" type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland C**

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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 wetland unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*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 rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (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**?

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

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

Wetland name or number: **Wetland C**

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 two years

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

☒ NO - go to 6

☐ YES – The wetland class is **Riverine**

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 your wetland. 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 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.

<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

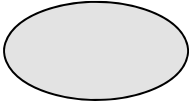
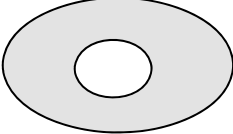
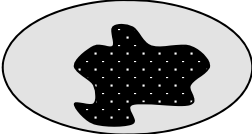
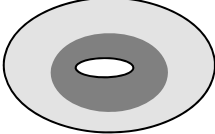
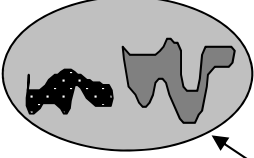
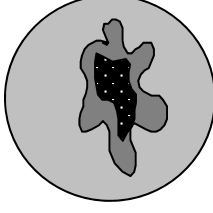
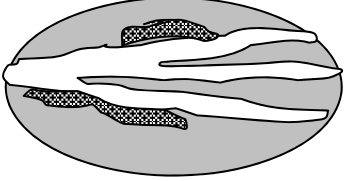
If you are unable still to determine which of the above criteria apply to your wetland, or you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

Wetland C has three HGM classes: depressional, riverine and slope. Rated as Depressional.

D	Depressional and Flats Wetlands	Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 38)
D	D 1.1 Characteristics of surface water flows out of the wetland: <input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)points = 3 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanently flowing outlet.....points = 2 <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 1 <input type="checkbox"/> Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditch.....points = 1 <i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i>	1
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). <input type="checkbox"/> YES points = 4 <input checked="" type="checkbox"/> NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 95% of areapoints = 5 <input type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 1/2 of areapoints = 3 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation <1/10 of areapoints = 0	5
D	D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> <input type="checkbox"/> Area seasonally ponded is > ½ total area of wetlandpoints = 4 <input checked="" type="checkbox"/> Area seasonally ponded is > ¼ total area of wetlandpoints = 2 <input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation.	2
D	Total for D 1 <i>Add the points in the boxes above</i>	8
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface <u>water coming into the wetland</u> that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input checked="" type="checkbox"/> Other: <u>industrial operations</u> YES multiply score in D 1. by 2 NO multiply score in D 1. by 1	(see p. 44) multiplier <u>2</u>
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 <i>Add score to table on p. 1</i>	16

D Depressional and Flats Wetlands		
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D	D 3.1 Characteristics of surface water flows out of the wetland unit <input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet).....points = 4 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanentlyflowing outlet .points = 2 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1 <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 0	0
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7 <input type="checkbox"/> The wetland is a “headwater” wetland”points = 5 <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5 <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3 <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap waterpoints = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ftpoints = 0	3
D	D 3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unitpoints = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.....points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unitpoints = 0 <input type="checkbox"/> Entire unit is in the FLATS classpoints = 5	0
D	Total for D 3 <i>Add the points in the boxes above</i>	3
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	<i>(see p. 49)</i> Multiplier 2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>	6

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) <i>Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</i> <input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input checked="" type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <i>Add the number of vegetation types that qualify. If you have:</i> <div style="text-align: right;"> 4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1 1 structurepoints = 0 </div>	2
H 1.2. <u>Hydroperiods</u> (see p. 73) <i>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 acre to count. (see text for descriptions of hydroperiods)</i> <input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input checked="" 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	2
H 1.3. <u>Richness of Plant Species</u> (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i> <div style="text-align: right;"> If you counted: <input type="checkbox"/> > 19 species points = 2 <input checked="" type="checkbox"/> 5 - 19 species points = 1 <input type="checkbox"/> < 5 species points = 0 </div> <i>List species below if you want to:</i>	1

<p>H 1.4. Interspersion of habitats (see p. 76)</p> <p>Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p><input type="checkbox"/> None = 0 points</p> </div> <div style="text-align: center;">  <p><input type="checkbox"/> Low = 1 point</p> </div> <div style="text-align: center;">  <p><input checked="" type="checkbox"/> Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p><input type="checkbox"/> High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".</p>	2
<p>H 1.5. Special Habitat Features: (see p. 77)</p> <p>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland. <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) <u>and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) for at least 33 ft (10m).</u> <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present. <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.(structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants. <p><i>Note: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	3
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	10

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland. Points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above..... Points = 1</p>	3
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 1 mi of a lake greater than 20 acres?</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	2

<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland? <i>(NOTE: the connections do not have to be relatively undisturbed)</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acres). <input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full description in WDFW PHS report p. 152)</i> <input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. <input type="checkbox"/> Old-growth/Mature forests: <i>(Old-growth west of Cascade crest)</i> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. <i>(Mature forests.)</i> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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. <input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158.)</i> <input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. <input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161)</i> <input checked="" type="checkbox"/> 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. <input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A.)</i> <input type="checkbox"/> 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. <input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. <input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. <input checked="" type="checkbox"/> 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 >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long. <p style="margin-left: 40px;"> If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points </p> <p><i>Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.</i></p>	<p>4</p>
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Wetland name or number: **Wetland C**

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile.points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile.points = 0</p>	3
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	12
<p>TOTAL for H1 from page 14</p>	10
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	22

Wetland name or number: **Wetland C**

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category.

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = Go to SC 1.1</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> NO, not an estuarine wetland</p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The are aof <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p><input type="checkbox"/> S/T/R information from Appendix D – OR – <input checked="" type="checkbox"/> Accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p><input checked="" type="checkbox"/> NO</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input checked="" type="checkbox"/> NO = Not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.) <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – go to Q.2</p> Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – is not a bog for purpose of rating</p> Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)? <p><input type="checkbox"/> Yes – Is a bog for purpose of rating</p> <p><input type="checkbox"/> NO – go to Q.4</p> <p><i>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” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></p> Is the wetland forested (>30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO – is not a bog for purpose of rating</p> 	Cat. I

<p>SC 4.0 Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the 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> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p><i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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.</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surge 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> <p><input type="checkbox"/> YES – Go to SC 5.1 <input checked="" type="checkbox"/> NO – not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0 Interdunal Wetlands (see p. 93)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES – go to SC 6.1 <input checked="" type="checkbox"/> NO – not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its 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>SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1 .</p> <p>If you answered NO for all types enter "Not Applicable" on p.1.</p>	<p>NA</p>

Wetland name or number: **Wetland C**

Wetland name or number: **Wetland D**

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland: Renton Maple Valley SE – Wetland D

Date of Site visit: 1/12/2017

Rated by: Sarah Sandstrom, Roen Hoehfield

Trained by Ecology? Yes ☒ No ☐

Date of Training: 4/2012

SEC: 19 TWSHP: 23N RGE: 16 Is S/T/R in Appendix D? Yes ☐ No ☒

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☒ III ☐ IV ☐

Category I = Score ≥ 70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30

Score for Water Quality Functions	12
Score for Hydrologic Functions	16
Score for Habitat Functions	23
TOTAL score for functions	51

12
16
23
51

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

Final Category (choose the “highest” category from above)

II

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland D**

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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 wetland unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*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 rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).*

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (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**?

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

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

Wetland name or number: **Wetland D**

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 two years

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

☒ NO - go to 6

☐ YES – The wetland class is **Riverine**

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 your wetland. **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 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.

<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

Wetland D has two HGM classes: depressional and slope. Rated as Depressional.

Wetland name or number: **Wetland D**

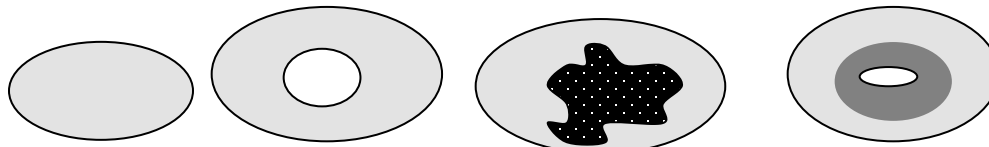
D	Depressional and Flats Wetlands	Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 38)
D	D 1.1 Characteristics of surface water flows out of the wetland: <input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)points = 3 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanently flowing outlet.....points = 2 <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 1 <input type="checkbox"/> Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditch.....points = 1 <i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i>	1
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). <input type="checkbox"/> YES points = 4 <input checked="" type="checkbox"/> NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 95% of areapoints = 5 <input type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 1/2 of areapoints = 3 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation <1/10 of areapoints = 0	5
D	D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> <input type="checkbox"/> Area seasonally ponded is > 1/2 total area of wetlandpoints = 4 <input type="checkbox"/> Area seasonally ponded is > 1/4 total area of wetlandpoints = 2 <input checked="" type="checkbox"/> Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation.	0
D	Total for D 1 <i>Add the points in the boxes above</i>	6
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface <u>water coming into the wetland</u> that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input checked="" type="checkbox"/> Other: <u>industrial operations</u> YES multiply score in D 1. by 2 NO multiply score in D 1. by 1	(see p. 44) multiplier <u>2</u>
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 <i>Add score to table on p. 1</i>	12

D Depressional and Flats Wetlands		
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D	D 3.1 Characteristics of surface water flows out of the wetland unit <input type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet).....points = 4 <input checked="" type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanentlyflowing outlet .points = 2 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1 <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> <input type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet <i>(permanently flowing)</i>points = 0	2
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7 <input type="checkbox"/> The wetland is a “headwater” wetland”points = 5 <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5 <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.....points = 3 <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water.....points = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ftpoints = 0	3
D	D 3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unitpoints = 5 <input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.....points = 3 <input type="checkbox"/> The area of the basin is more than 100 times the area of the unitpoints = 0 <input type="checkbox"/> Entire unit is in the FLATS classpoints = 5	3
D	Total for D 3 <i>Add the points in the boxes above</i>	8
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	<i>(see p. 49)</i> Multiplier 2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>	16

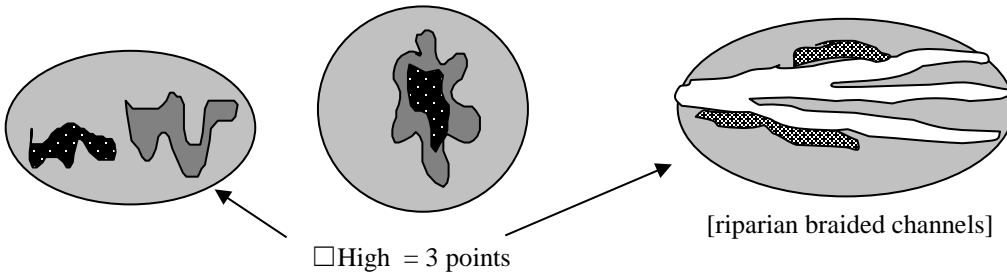
These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) <i>Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</i> <input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover) <input checked="" type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <i>Add the number of vegetation types that qualify. If you have:</i> <div style="text-align: right;"> 4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1 1 structurepoints = 0 </div>	2
H 1.2. <u>Hydroperiods</u> (see p. 73) <i>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 acre to count. (see text for descriptions of hydroperiods)</i> <input checked="" type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <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	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i> <div style="text-align: right;"> If you counted: <input type="checkbox"/> > 19 species points = 2 <input checked="" type="checkbox"/> 5 - 19 species points = 1 <input type="checkbox"/> < 5 species points = 0 </div> <i>List species below if you want to:</i>	1

H 1.4. Interspersion of habitats (see p. 76)

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.


☐ None = 0 points

☒ Low = 1 point

☐ Moderate = 2 points

☐ High = 3 points

[riparian braided channels]

NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".

1

H 1.5. Special Habitat Features: (see p. 77)

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

- ☒ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).
- ☒ Standing snags (diameter at the bottom > 4 inches) in the wetland.
- ☐ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) for at least 33 ft (10m).
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present.
- ☐ At least ¼ acre of thin-stemmed persistent vegetation 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 each stratum of plants.

Note: The 20% stated in early printings of the manual on page 78 is an error.

2

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

7

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland. Points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above. Points = 1</p>	3
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;"><input checked="" type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="padding-left: 20px;"><input type="checkbox"/> within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="padding-left: 20px;"><input type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="padding-left: 20px;"><input type="checkbox"/> within 1 mi of a lake greater than 20 acres?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	4

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>)

Which of the following priority habitats are within 330ft (100m) of the wetland?

(NOTE: the connections do not have to be relatively undisturbed)

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acres).
- ☒ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full description in WDFW PHS report p. 152)
- ☐ **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 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests.) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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:** Woodlands 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.)
- ☒ **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)
- ☒ **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: pp. 167-169 and glossary in Appendix A.)
- ☐ **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 7.6 m (25 ft) high and occurring below 5000 ft.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), 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 >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long.

If wetland has **3 or more** priority habitats = **4 points**

If wetland has **2** priority habitats = **3 points**

If wetland has **1** priority habitat = **1 point**

No habitats = **0 points**

Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.

4

Wetland name or number: **Wetland D**

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile.points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile.points = 0</p>	5
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	7
<p>TOTAL for H1 from page 14</p>	16
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	23

Wetland name or number: **Wetland D**

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category.

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = Go to SC 1.1</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> NO, not an estuarine wetland</p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The are aof <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p><input type="checkbox"/> S/T/R information from Appendix D – OR – <input checked="" type="checkbox"/> Accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p><input checked="" type="checkbox"/> NO</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input checked="" type="checkbox"/> NO = Not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.) <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – go to Q.2</p> Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – is not a bog for purpose of rating</p> Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)? <p><input type="checkbox"/> Yes – Is a bog for purpose of rating</p> <p><input type="checkbox"/> NO – go to Q.4</p> <p><i>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” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></p> Is the wetland forested (>30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO – is not a bog for purpose of rating</p> 	Cat. I

<p>SC 4.0 Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the 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> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p><i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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.</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surgace 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> <p><input type="checkbox"/> YES – Go to SC 5.1 <input checked="" type="checkbox"/> NO – not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p>	<p style="text-align: center; vertical-align: middle;">Cat. I</p> <p style="text-align: center; vertical-align: middle;">Cat. II</p>
<p>SC 6.0 Interdunal Wetlands (see p. 93)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES – go to SC 6.1 <input checked="" type="checkbox"/> NO – not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its 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>SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p>	<p style="text-align: center; vertical-align: middle;">Cat. II</p> <p style="text-align: center; vertical-align: middle;">Cat. III</p>
<p>Category of wetland based on Special Characteristics</p> <p><i>Choose the "highest" rating if wetland falls into several categorie, and record on p. 1 .</i></p> <p><i>If you answered NO for all types enter "Not Applicable" on p.1.</i></p>	<p>NA</p>

Wetland name or number: **Wetland D**

Wetland name or number: **Wetland DD**

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland: Renton Maple Valley SE – Wetland DD

Date of Site visit: 7/23/2018

Rated by: Sarah Sandstrom, Roen Hoehfield

Trained by Ecology? Yes ☒ No ☐

Date of Training: 4/2012

SEC: 19 TWSHP: 23N RGE: 16 Is S/T/R in Appendix D? Yes ☐ No ☒

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☐ III ☒ IV ☐

Category I = Score ≥ 70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions
Score for Hydrologic Functions
Score for Habitat Functions
TOTAL score for functions

8
14
21
43

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

Final Category (choose the “highest” category from above)

III

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input checked="" type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland DD**

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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 wetland unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*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 rated as an **Estuarine** wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).*

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (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**?

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

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

Wetland name or number: **Wetland DD**

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 two years

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

☒ **NO** - go to 6

☐ **YES** – The wetland class is **Riverine**

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 your wetland. **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 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.

<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

Wetland DD has two HGM classes: depressional and slope. Rated as Depressional.

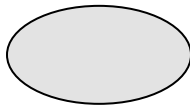
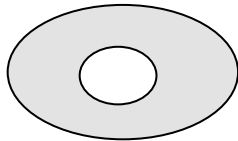
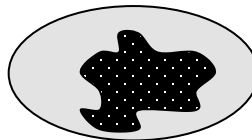
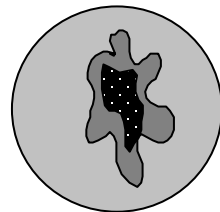
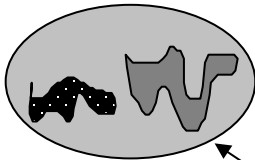
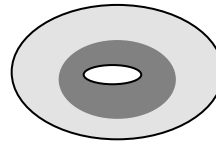
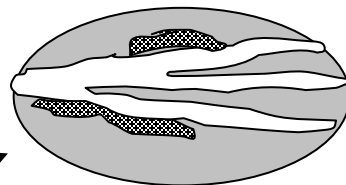
D	Depressional and Flats Wetlands	Points
WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality		
D	D 1. Does the wetland have the <u>potential</u> to improve water quality?	(see p. 38)
D	D 1.1 Characteristics of surface water flows out of the wetland: <input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet)points = 3 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanently flowing outlet.....points = 2 <input type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>)points = 1 <input type="checkbox"/> Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditch.....points = 1 <i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i>	3
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). <input type="checkbox"/> YES points = 4 <input checked="" type="checkbox"/> NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <input type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 95% of areapoints = 5 <input type="checkbox"/> Wetland has persistent, ungrazed, vegetation > = 1/2 of areapoints = 3 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation <1/10 of areapoints = 0	1
D	D1.4 Characteristics of seasonal ponding or inundation. <i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i> <input type="checkbox"/> Area seasonally ponded is > 1/2 total area of wetlandpoints = 4 <input type="checkbox"/> Area seasonally ponded is > 1/4 total area of wetlandpoints = 2 <input checked="" type="checkbox"/> Area seasonally ponded is < 1/4 total area of wetlandpoints = 0 NOTE: See text for indicators of seasonal and permanent inundation.	0
D	Total for D 1 <i>Add the points in the boxes above</i>	4
D	D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface <u>water coming into the wetland</u> that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other:	(see p. 44) multiplier <u>2</u>
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 <i>Add score to table on p. 1</i>	8

D Depressional and Flats Wetlands		
HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degradation		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 46)</i>
D	D 3.1 Characteristics of surface water flows out of the wetland unit <input checked="" type="checkbox"/> Unit is a depression with no surface water leaving it (no outlet).....points = 4 <input type="checkbox"/> Unit has an intermittently flowing, or highly constricted permanentlyflowing outlet .points = 2 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1 <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> <input type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet <i>(permanently flowing)</i>points = 0	4
D	D 3.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <input type="checkbox"/> Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7 <input type="checkbox"/> The wetland is a “headwater” wetland”points = 5 <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5 <input checked="" type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet.....points = 3 <input type="checkbox"/> Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water.....points = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ftpoints = 0	3
D	D 3.3 Contribution of wetland unit to storage in the watershed <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <input type="checkbox"/> The area of the basin is less than 10 times the area of the unitpoints = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit.....points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unitpoints = 0 <input type="checkbox"/> Entire unit is in the FLATS classpoints = 5	0
D	Total for D 3 <i>Add the points in the boxes above</i>	7
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems <input type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input checked="" type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	<i>(see p. 49)</i> Multiplier 2
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i>	16

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) <i>Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</i> <input type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <i>Add the number of vegetation types that qualify. If you have:</i> <div style="text-align: right;"> 4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1 1 structurepoints = 0 </div>	0
H 1.2. <u>Hydroperiods</u> (see p. 73) <i>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 acre to count. (see text for descriptions of hydroperiods)</i> <input checked="" type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <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	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i> <div style="text-align: right;"> If you counted: <input type="checkbox"/> > 19 species points = 2 <input checked="" type="checkbox"/> 5 - 19 species points = 1 <input type="checkbox"/> < 5 species points = 0 </div> <i>List species below if you want to:</i>	1

H 1.4. Interspersion of habitats (see p. 76)

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.


☒ None = 0 points

☒ Low = 1 point

☐ Moderate = 2 points

☐ High = 3 points


[riparian braided channels]

NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".

0

H 1.5. Special Habitat Features: (see p. 77)

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

- ☒ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).
- ☒ Standing snags (diameter at the bottom > 4 inches) in the wetland.
- ☐ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) for at least 33 ft (10m).
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present.
- ☐ At least ¼ acre of thin-stemmed persistent vegetation 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 each stratum of plants.

Note: The 20% stated in early printings of the manual on page 78 is an error.

3

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

5

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) <i>Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input checked="" type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland. Points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above. Points = 1</p>	3
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;"><input checked="" type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="margin-left: 20px;"><input type="checkbox"/> within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="margin-left: 20px;"><input type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="margin-left: 20px;"><input type="checkbox"/> within 1 mi of a lake greater than 20 acres?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	4

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report <http://wdfw.wa.gov/hab/phslist.htm>)

Which of the following priority habitats are within 330ft (100m) of the wetland?

(NOTE: the connections do not have to be relatively undisturbed)

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acres).
- ☒ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (full description in WDFW PHS report p. 152)
- ☐ **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 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests.) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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:** Woodlands 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.)
- ☒ **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)
- ☒ **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: pp. 167-169 and glossary in Appendix A.)
- ☐ **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 7.6 m (25 ft) high and occurring below 5000 ft.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), 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 >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long.

If wetland has **3 or more** priority habitats = **4 points**

If wetland has **2** priority habitats = **3 points**

If wetland has **1** priority habitat = **1 point**

No habitats = **0 points**

Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.

4

Wetland name or number: **Wetland DD**

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile.points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile.points = 0</p>	5
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	5
<p>TOTAL for H1 from page 14</p>	16
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	21

Wetland name or number: **Wetland DD**

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category.

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = Go to SC 1.1</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> NO, not an estuarine wetland</p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The are aof <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p><input type="checkbox"/> S/T/R information from Appendix D – OR – <input checked="" type="checkbox"/> Accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p><input checked="" type="checkbox"/> NO</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input checked="" type="checkbox"/> NO = Not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.) <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – go to Q.2</p> Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – is not a bog for purpose of rating</p> Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)? <p><input type="checkbox"/> Yes – Is a bog for purpose of rating</p> <p><input type="checkbox"/> NO – go to Q.4</p> <p><i>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” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></p> Is the wetland forested (>30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO – is not a bog for purpose of rating</p> 	Cat. I

<p>SC 4.0 Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the 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> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p><i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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.</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surge 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> <p><input type="checkbox"/> YES – Go to SC 5.1 <input checked="" type="checkbox"/> NO – not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0 Interdunal Wetlands (see p. 93)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES – go to SC 6.1 <input checked="" type="checkbox"/> NO – not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its 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>SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1 .</p> <p>If you answered NO for all types enter "Not Applicable" on p.1.</p>	<p>NA</p>

Wetland name or number: **Wetland DD**

Wetland name or number: **Wetland ROW**

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland: Renton Maple Valley SE – Wetland ROW

Date of Site visit: 1/12/2017

Rated by: Nell Lund, Anna Hoenig

Trained by Ecology? Yes ☒ No ☐

Date of Training: 10/2008, 10/2015

SEC: 19 TWSHP: 23N RNGE: 16

Is S/T/R in Appendix D? Yes ☐ No ☒

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ **II** ☒ **III** ☐ **IV** ☐

Category I = Score ≥ 70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions

16

Score for Hydrologic Functions

22

Score for Habitat Functions

15

TOTAL score for functions

53

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ **II** ☐ **Does not Apply** ☒

Final Category (choose the “highest” category from above)

II

Check the appropriate type and class of wetland being rated.

Wetland Type		Wetland Class	
Estuarine	<input type="checkbox"/>	Depressional	<input type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input checked="" type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		
None of the above	<input type="checkbox"/>	Check if unit has multiple HGM classes present	<input checked="" type="checkbox"/>

Wetland name or number: **Wetland ROW**

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X*
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X*
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X*
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

***The study area was reviewed for the presence of endangered, threatened, and priority species using WDFW online Priority Habitat and Species Data, PHS on the Web (<http://wdfw.wa.gov/mapping/phs/>).**

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. Classifying the wetland first simplifies the questions needed to answer how it functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

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 wetland unit usually controlled by tides (i.e. except during floods)?

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

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe** **NO – Saltwater Tidal Fringe (Estuarine)**

*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 rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?

- ☐ The vegetated part of the wetland is on the shores of a body of open water (without any vegetation on the surface) at least 20 acres (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**?

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

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

Wetland name or number: **Wetland ROW**

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 two years

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

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

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 your wetland. **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 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.

<i>HGM classes within the wetland unit being rated</i>	<i>HGM Class to Use in Rating</i>
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

Wetland name or number: **Wetland ROW**

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality	
R	R 1. Does the wetland have the <u>potential</u> to improve water quality?	<i>(see p. 52)</i>
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: <input type="checkbox"/> Depressions cover >3/4 area of wetlandpoints = 8 <input type="checkbox"/> Depressions cover > 1/2 area of wetlandpoints = 4 <input checked="" type="checkbox"/> Depressions present but cover < 1/2 area of wetland.....points = 2 <input type="checkbox"/> No depressions presentpoints = 0	2
R	R 1.2 Characteristics of the vegetation in the wetland (areas with > 90% cover at person height): <input type="checkbox"/> Forest or shrub > 2/3 the area of the wetland.....points = 8 <input type="checkbox"/> Forest or shrub > 1/3 area of the wetlandpoints = 6 <input checked="" type="checkbox"/> Ungrazed, emergent plants > 2/3 area of wetland.....points = 6 <input type="checkbox"/> Ungrazed emergent plants > 1/3 area of wetland.....points = 3 <input type="checkbox"/> Forest, shrub, and ungrazed emergent < 1/3 area of wetland.....points = 0	6
R	Total for R 1 <i>Add the points in the boxes above</i>	8
R	R 2. Does the wetland have the <u>opportunity</u> to improve water quality? <i>(see p. 53)</i> Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input type="checkbox"/> The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality <input type="checkbox"/> Other _____ <div style="text-align: center;"> YES multiplier is 2 NO multiplier is 1 </div>	multiplier 2
R	<u>TOTAL</u> - Water Quality Functions Multiply the score from R 1 by R 2 <i>Add score to table on p. 1</i>	16

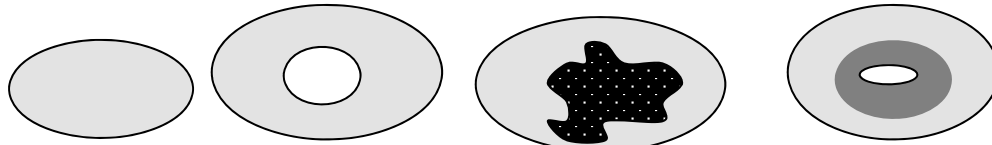
Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	<i>(see p. 54)</i>
R	R 3.1 Characteristics of the overbank storage the wetland provides: <i>Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (width of wetland)/(width of stream).</i> <input type="checkbox"/> If the ratio is more than 20.....points = 9 <input type="checkbox"/> If the ratio is between 10 – 20.....points = 6 <input checked="" type="checkbox"/> If the ratio is 5- <10points = 4 <input type="checkbox"/> If the ratio is 1- <5points = 2 <input type="checkbox"/> If the ratio is < 1points = 1	4
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes)</i> <input checked="" type="checkbox"/> Forest or shrub for >1/3 area OR Emergent plants > 2/3 areapoints = 7 <input type="checkbox"/> Forest or shrub for > 1/10 area OR Emergent plants > 1/3 areapoints = 4 <input type="checkbox"/> Vegetation does not meet above criteriapoints = 0	7
R	Total for R 3 <i>Add the points in the boxes above</i>	11
R	R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? <i>(see p. 57)</i> Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. <i>Note which of the following conditions apply.</i> <input type="checkbox"/> There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. <input checked="" type="checkbox"/> There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding <input type="checkbox"/> Other _____ <i>(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is tidal fringe along the sides of a dike)</i> YES multiplier is 2 NO multiplier is 1	<i>(see p. 57)</i> multiplier <u>2</u>
R	TOTAL - Hydrologic Functions Multiply the score from R 3 by R 4 <i>Add score to table on p. 1</i>	22

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat	
H 1. Does the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> (see p. 72) <i>Check the types of vegetation classes present (as defined by Cowardin) if the class is ¼ acre or covers more than 10% of the area of the wetland if unit smaller than 2.5 acres.</i> <input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) <input type="checkbox"/> Forested areas have 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon <i>Add the number of vegetation types that qualify. If you have:</i> <div style="text-align: right;"> 4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1 1 structurepoints = 0 </div>	0
H 1.2. <u>Hydroperiods</u> (see p. 73) <i>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 acre to count. (see text for descriptions of hydroperiods)</i> <input type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input checked="" 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	1
H 1.3. <u>Richness of Plant Species</u> (see p. 75) <i>Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold)</i> <i>You do not have to name the species.</i> <i>Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle</i> <div style="text-align: right;"> If you counted: <input type="checkbox"/> > 19 species points = 2 <input checked="" type="checkbox"/> 5 - 19 species points = 1 <input type="checkbox"/> < 5 species points = 0 </div> <i>List species below if you want to:</i>	1

H 1.4. Interspersion of habitats (see p. 76)

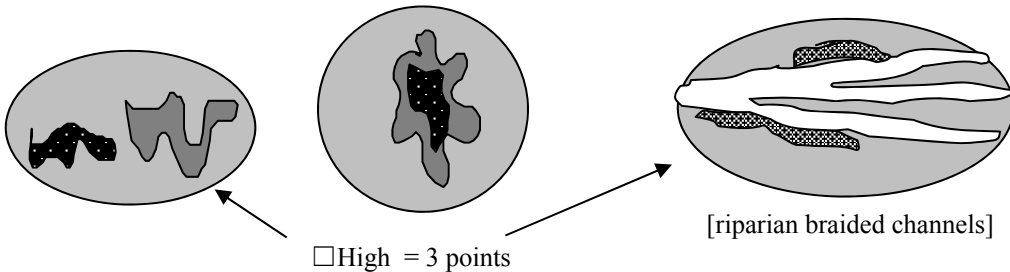
Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.



☐ None = 0 points

☒ Low = 1 point

☐ Moderate = 2 points



☐ High = 3 points

NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".

1

H 1.5. Special Habitat Features: (see p. 77)

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

- ☐ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).
- ☐ Standing snags (diameter at the bottom > 4 inches) in the wetland.
- ☐ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream for at least 33 ft (10m).
- ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present.
- ☐ At least ¼ acre of thin-stemmed persistent vegetation 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 each stratum of plants.

Note: The 20% stated in early printings of the manual on page 78 is an error.

0

H 1. TOTAL Score - potential for providing habitat
Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

3

H 2. Does the wetland have the opportunity to provide habitat for many species?	
<p>H 2.1 Buffers (see p. 80) Choose the description that best represents condition of buffer of wetland. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <p><input type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No developed areas within undisturbed part of buffer. (relatively undisturbed also means no-grazing) Points = 5</p> <p><input type="checkbox"/> 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... Points = 4</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference..... Points = 4</p> <p><input checked="" type="checkbox"/> 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... Points = 3</p> <p><input type="checkbox"/> 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3</p> <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer. Points = 1</p> <p><input type="checkbox"/> Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland. Points = 0</p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above. Points = 1</p>	3
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input type="checkbox"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 5 mi (8km) of a brackish or salt water estuary OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 3 mi of a large field or pasture (>40 acres) OR</p> <p style="padding-left: 40px;"><input type="checkbox"/> within 1 mi of a lake greater than 20 acres?</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	2

<p>H 2.3 Near or adjacent to other priority habitats listed by WDFW <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland? <i>(NOTE: the connections do not have to be relatively undisturbed)</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acres). <input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full description in WDFW PHS report p. 152)</i> <input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. <input type="checkbox"/> Old-growth/Mature forests: <u>(Old-growth west of Cascade crest)</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. <u>(Mature forests.)</u> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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. <input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158.)</i> <input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. <input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161)</i> <input checked="" type="checkbox"/> 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. <input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A.)</i> <input type="checkbox"/> 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. <input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. <input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. <input checked="" type="checkbox"/> 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 >51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30cm (12 in) in diameter at the largest end, and > 6m (20 ft) long. <p style="margin-left: 40px;"> If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points </p> <p><i>Note: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H2.4.</i></p>	<p>4</p>
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Wetland name or number: **Wetland ROW**

<p>H 2.4 Wetland Landscape (choose the <i>one</i> description of the landscape around the wetland that best fits) (see p. 84)</p> <p><input type="checkbox"/> There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.points = 5</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ milepoints = 5</p> <p><input checked="" type="checkbox"/> There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbedpoints = 3</p> <p><input type="checkbox"/> The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3</p> <p><input type="checkbox"/> There is at least 1 wetland within ½ mile.points = 2</p> <p><input type="checkbox"/> There are no wetlands within ½ mile.points = 0</p>	3
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	12
<p>TOTAL for H1 from page 14</p>	3
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	15

Wetland name or number: **Wetland ROW**

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate Category.

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
<p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal,</p> <p><input type="checkbox"/> Vegetated, and</p> <p><input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p style="padding-left: 40px;"><input type="checkbox"/> YES = Go to SC 1.1</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> NO</p>	
<p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I</p>
<p>SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II) The are aof <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> At least $\frac{3}{4}$ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed wetland.</p> <p><input type="checkbox"/> The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I</p> <p>Cat. II</p> <p>Dual rating I/II</p>

<p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</i>)</p> <p>Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>)</p> <p><input type="checkbox"/> S/T/R information from Appendix D – OR – <input checked="" type="checkbox"/> Accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES – contact WNHP/DNR (see p. 79) and go to SC 2.2</p> <p><input checked="" type="checkbox"/> NO</p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?</p> <p><input type="checkbox"/> YES = Category I</p> <p><input checked="" type="checkbox"/> NO = Not a Heritage Wetland</p>	Cat. I
<p>SC 3.0 Bogs (<i>see p. 87</i>)</p> <p>Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes, you will still need to rate the wetland based on its functions.</i></p> <ol style="list-style-type: none"> Does the wetland have organic soils horizons (i.e. layers of organic soil), either peats or mucks, that compose 16” or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils.) <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – go to Q.2</p> Does the wetland have organic soils, either peats or mucks, that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <p><input type="checkbox"/> Yes – go to Q.3</p> <p><input checked="" type="checkbox"/> NO – is not a bog for purpose of rating</p> Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table 3)? <p><input type="checkbox"/> Yes – Is a bog for purpose of rating</p> <p><input type="checkbox"/> NO – go to Q.4</p> <p><i>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” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</i></p> Is the wetland forested (>30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? <p><input type="checkbox"/> YES = Category I</p> <p><input type="checkbox"/> NO – is not a bog for purpose of rating</p> 	Cat. I

<p>SC 4.0 Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the 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> <p><input type="checkbox"/> Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more.</p> <p><i>Note: The criterion for dbh is based on measurements for upland forests. Two hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.</i></p> <p><input type="checkbox"/> Mature forests: (west of the Cascade crest) Stands where the largest trees are 80-200 years old OR have average diameters (dbh) exceeding 21 in (53 cm); 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.</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO – not a forested wetland with special characteristics</p>	<p>Cat. I</p>
<p>SC 5.0 Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surge 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> <p><input type="checkbox"/> YES – Go to SC 5.1 <input checked="" type="checkbox"/> NO – not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square feet)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p>	<p>Cat. I</p> <p>Cat. II</p>
<p>SC 6.0 Interdunal Wetlands (see p. 93)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES – go to SC 6.1 <input checked="" type="checkbox"/> NO – not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its 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>SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II</p> <p>Cat. III</p>
<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1 .</p> <p>If you answered NO for all types enter "Not Applicable" on p.1.</p>	<p>NA</p>

Wetland name or number: **Wetland ROW**

APPENDIX C

Wetland Data Forms

DP- 1

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 1/10/2017
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- 1
Investigator: Nell Lund, Anna Hoenig		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): berm	Slope (%): <5	Local relief (concave, convex, none): convex
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land	Datum:	
Soil NWI classification: none		
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		(If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
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 Sampling Point within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks: Behind ecology block wall on berm			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. Salix sp.	5	Yes	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	5 (A)
2.				Total Number of Dominant Species Across All Strata:	5 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.	5	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m diam.)					
1. Alnus rubra (sapling)	5	Yes	FAC	Prevalence Index Worksheet	
2. Rubus armeniacus	20	Yes	FAC	Total % Cover of <input type="text"/> Multiply by <input type="text"/>	
3.				OBL species	x 1 =
4.				FACW species	x 2 =
5.				FAC species	x 3 =
	25	= Total Cover		FACU species	x 4 =
				UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)					
1. Phalaris arundinacea	80	Yes	FACW	Prevalence Index = B / A =	
2. Ranunculus repens	60	Yes	FACW		
3.				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * 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 * (explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.	1440	= Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size:)					
1.					
2.					
			= Total Cover		
% Bare Ground in Herb Stratum:					
Remarks:					

SOIL

Sampling Point – DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/2	100					Sandy loam	Some OM
8-12	10YR 2/2	100					Gravelly sandy loam	cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Loc: 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 Soils³

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

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

Restrictive Layer (if present): Type: Depth (inches):	Hydric soil present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<i>Remarks:</i>	

HYDROLOGY

<p>Wetland Hydrology Indicators: <i>Primary Indicators (minimum of one required: check all that apply):</i></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <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) </div> <div style="width: 50%;"> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) <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) </div> </div>				<p><i>Secondary Indicators (2 or more required):</i></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 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 </div> </div>			
<p>Field Observations</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) </div> <div style="width: 40%;"> Depth (in): Depth (in): Depth (in): </div> <div style="width: 20%; text-align: center;"> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
<i>Remarks:</i>							

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 1/10/2017
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- 2
Investigator: Nell Lund, Anna Hoenig		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): ditch	Slope (%): 5	Local relief (concave, convex, none): concave
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land	Datum:	
Soil NWI classification: none		
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		(If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Hydric Soils Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampling Point within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: Wetland A; Adjacent to DP-1		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. Salix sp.	5	Yes	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	4 (A)
2.				Total Number of Dominant Species Across All Strata:	4 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.	5	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m diam.)				Prevalence Index Worksheet	
1. Rubus armeniacus	25	Yes	FAC	Total % Cover of	
2. Alnus rubra (sapling)	5	No	FAC	Multiply by	
3.				OBL species	x 1 =
4.				FACW species	x 2 =
5.				FAC species	x 3 =
	30	= Total Cover		FACU species	x 4 =
				UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)				Prevalence Index = B / A =	
1. Phalaris arundinacea	60	Yes	FACW	Hydrophytic Vegetation Indicators	
2. Ranunculus repens	20	No	FAC	<input checked="" type="checkbox"/> Dominance test is > 50%	
3. Nasturtium officinale	40	Yes	OBL	<input type="checkbox"/> Prevalence test is ≤ 3.0 *	
4. Ludwigia palustris	10	No	OBL	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)	
5.				<input type="checkbox"/> Wetland Non-Vascular Plants *	
6.				<input type="checkbox"/> Problematic Hydrophytic Vegetation * (explain)	
7.					
8.					
9.					
10.					
11.					
	130	= Total Cover		* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody Vine Stratum (Plot size:)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.					
2.					
		= Total Cover			
% Bare Ground in Herb Stratum:					
Remarks:					

SOIL

Sampling Point – DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-15	10YR 2/1	100					Loamy sand	Mulch mixed in

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/>

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

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

Remarks: **OM masking redox**

HYDROLOGY

<p>Wetland Hydrology Indicators: <i>Primary Indicators (minimum of one required: check all that apply):</i></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface water (A1)</td> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> </tr> <tr> <td><input checked="" type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Salt Crust (B11)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Aquatic Invertebrates (B13)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Surface Soil Cracks (B6)</td> <td><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td><input type="checkbox"/> Other (explain in remarks)</td> </tr> </table>				<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)	<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (explain in remarks)	<p><i>Secondary Indicators (2 or more required):</i></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)</td> </tr> <tr> <td><input type="checkbox"/> Drainage Patterns (B10)</td> </tr> <tr> <td><input type="checkbox"/> Dry-Season Water Table (C2)</td> </tr> <tr> <td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td> </tr> <tr> <td><input type="checkbox"/> Geomorphic Position (D2)</td> </tr> <tr> <td><input type="checkbox"/> Shallow Aquitard (D3)</td> </tr> <tr> <td><input type="checkbox"/> FAC-Neutral Test (D5)</td> </tr> <tr> <td><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</td> </tr> <tr> <td><input type="checkbox"/> Frost-Heave Hummocks</td> </tr> </table>		<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 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
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)																																	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)																																	
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<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Aquatic Invertebrates (B13)																																	
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<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)																																	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)																																	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																																	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)																																	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (explain in remarks)																																	
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<input type="checkbox"/> Frost-Heave Hummocks																																		

<p>Field Observations</p> <table style="width:100%;"> <tr> <td>Surface Water Present?</td> <td>Yes <input type="checkbox"/></td> <td>No <input checked="" type="checkbox"/></td> <td>Depth (in):</td> <td></td> </tr> <tr> <td>Water Table Present?</td> <td>Yes <input checked="" type="checkbox"/></td> <td>No <input type="checkbox"/></td> <td>Depth (in):</td> <td>4" BGS</td> </tr> <tr> <td>Saturation Present? (includes capillary fringe)</td> <td>Yes <input checked="" type="checkbox"/></td> <td>No <input type="checkbox"/></td> <td>Depth (in):</td> <td>2" BGS</td> </tr> </table>	Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (in):		Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (in):	4" BGS	Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (in):	2" BGS	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (in):													
Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (in):	4" BGS												
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (in):	2" BGS												

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

Remarks:

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 1/10/2017
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- 3
Investigator: Nell Lund, Anna Hoenig		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): hillslope	Slope (%): >10	Local relief (concave, convex, none): none
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land		Datum:
Soil Map Unit Name: Urban land		NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
		(If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampling Point within a Wetland?	Yes <input 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"/>		
Remarks: Wetland B			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <i>Alnus rubra</i>	35	Yes	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	4 (A)
2.				Total Number of Dominant Species Across All Strata:	4 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.					
35 = Total Cover					
Sapling/Shrub Stratum (Plot size: 3m diam.)				Prevalence Index Worksheet	
1. <i>Rubus armeniacus</i>	25	Yes	FAC	Total % Cover of	
2.				OBL species	x 1 =
3.				FACW species	x 2 =
4.				FAC species	x 3 =
5.				FACU species	x 4 =
25 = Total Cover				UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)				Prevalence Index = B / A =	
1. <i>Ranunculus repens</i>	10	Yes	FACW	Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * 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 * (explain)	
2. <i>Equisetum telmateia</i>	25	Yes	FACW		
3. <i>Holcus lanatus</i>	2	No	FAC		
4. <i>Phalaris arundinacea</i>	5	No	FCW		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
42 = Total Cover				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody Vine Stratum (Plot size:)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.					
2.					
% Bare Ground in Herb Stratum:					
Remarks:					

SOIL

Sampling Point – DP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 2/2	100					Gravelly clay loam	
3-8	10YR 2/1	100					Gravelly loamy sand	
8-14	7.5YR 2.5/1	100					Loamy mulch	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/>

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

Restrictive Layer (if present): Type: Depth (inches):	Hydric soil present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: OM masking redox	

HYDROLOGY

Wetland Hydrology Indicators: <i>Primary Indicators (minimum of one required: check all that apply):</i>				<i>Secondary Indicators (2 or more required):</i>			
<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)	<input type="checkbox"/> Drainage Patterns (B10)				
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Dry-Season Water Table (C2)				
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)				
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Geomorphic Position (D2)				
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Frost-Heave Hummocks				
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Other (explain in remarks)						
<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)							

Field Observations Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (in): 4" BGS Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (in): surface (includes capillary fringe)				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:							

DP- 4

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 1/10/2017
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- 4
Investigator: Nell Lund, Anna Hoenig		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): terrace	Slope (%): <5	Local relief (concave, convex, none): none
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land	Datum:	
Soil Map Unit Name: Urban land		NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
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 Sampling Point within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <i>Alnus rubra</i>	30	Yes	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	3 (A)
2.				Total Number of Dominant Species Across All Strata:	3 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.	30	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3m diam.)					
1. <i>Rubus armeniacus</i>	10	Yes	FAC	Prevalence Index Worksheet	
2.				Total % Cover of	
3.				Multiply by	
4.				OBL species	x 1 =
5.				FACW species	x 2 =
				FAC species	x 3 =
				FACU species	x 4 =
				UPL species	x 5 =
	10	= Total Cover		Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)					
1. <i>Phalaris arundinacea</i>	100	Yes	FACW	Prevalence Index = B / A =	
2. <i>Ranunculus repens</i>	10	No	FAC		
3.				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * 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 * (explain) * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
	110	= Total Cover			
Woody Vine Stratum (Plot size:)					
1.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2.					
		= Total Cover			
% Bare Ground in Herb Stratum:					
Remarks:					

SOIL

Sampling Point – DP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	7.5YR 2.5/2	100					Gravelly sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Loc: 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 Soils³

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

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

Restrictive Layer (if present): Type: Depth (inches):	Hydric soil present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<i>Remarks:</i>	

HYDROLOGY

<p>Wetland Hydrology Indicators: <i>Primary Indicators (minimum of one required: check all that apply):</i></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <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) </div> <div style="width: 33%;"> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) <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) </div> <div style="width: 33%;"> <p><i>Secondary Indicators (2 or more required):</i></p> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 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 </div> </div>			
<p>Field Observations</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) </div> <div style="width: 30%;"> Depth (in): Depth (in): Depth (in): </div> <div style="width: 40%; text-align: center;"> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> </div> </div>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<i>Remarks:</i>			

SOIL

Sampling Point – DP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/2	100					Sandy loam	
2-3	10YR 2/1	100					Sandy loam	High OM
3-10	2.5Y 2.5/1	100					Gravelly sandy loam	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)

Indicators for Problematic Hydric Soils³

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/>

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

Restrictive Layer (if present): Type: Depth (inches):	Hydric soil present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks: **OM masking redox, F6 presumed.**

HYDROLOGY

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

Field Observations Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (in): 8" BGS Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (in): surface (includes capillary fringe)				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DP- 6

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 1/10/2017
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- 6
Investigator: Nell Lund, Anna Hoenig		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): hillslope	Slope (%): 5	Local relief (concave, convex, none): none
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land		Datum:
Soil Map Unit Name: Urban land		NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? <input type="checkbox"/> Yes <input type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		
(If needed, explain any answers in Remarks.)		

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Point within a Wetland?	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"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1.				Number of Dominant Species that are OBL, FACW, or FAC:	2 (A)
2.				Total Number of Dominant Species Across All Strata:	2 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.					
				= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)					
1. Rubus armeniacus	70	Yes	FAC	Prevalence Index Worksheet	
2.				Total % Cover of	
3.				Multiply by	
4.				OBL species	x 1 =
5.				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	
				<input checked="" type="checkbox"/> Dominance test is > 50%	
				<input type="checkbox"/> Prevalence test is ≤ 3.0 *	
				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 * (explain)	
				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
				Hydrophytic Vegetation Present?	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Herb Stratum (Plot size: 1m diam.)					
1. Phalaris arundinacea	80	Yes	FACW		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
				= Total Cover	
Woody Vine Stratum (Plot size:)					
1.					
2.					
				= Total Cover	
% Bare Ground in Herb Stratum:					
Remarks:					

SOIL

Sampling Point – DP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 2/2	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Loc: 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 Soils³

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

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

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

Remarks:

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 **(except MLRA 1, 2, 4A & 4B)** (B9)
☐ 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 & 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

<p>Field Observations</p> <div style="display: flex; justify-content: space-between;"> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) </div> <div> Depth (in): Depth (in): Depth (in): </div> </div>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Moist, not saturated**

SOIL

Sampling Point – DP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 2/1	100					Sandy loam	
5-14	10YR3/1	97	10YR 4/6	3	C	M	Gravelly sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Loc: 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 Soils³

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

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

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

Remarks:

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 **(except MLRA 1, 2, 4A & 4B)** (B9)
☐ 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 & 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

<p>Field Observations</p> <div style="display: flex; justify-content: space-between;"> <div> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) </div> <div> Depth (in): Depth (in): Depth (in): </div> </div>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

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

Remarks: **Moist, not saturated**



WETLAND DETERMINATION DATA FORM
Western Mountains, Valleys, and Coast Supplement to the
1987 COE Wetlands Delineation Manual

750 Sixth Street South
Kirkland, Washington 98033
(425) 822-5242
watershedco.com

DP- X2

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 7/23/2018
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- X2
Investigator: Sarah Sandstrom, Roen Hohfield		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): Depression	Slope (%): <5	Local relief (concave, convex, none): concave
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land	Datum:	
Soil Map Unit Name: Urban land		NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		WETs is drier than average
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		(If needed, explain any answers in Remarks.)
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampling Point within a Wetland? 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"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet
1.				Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
2.				Total Number of Dominant Species Across All Strata: 2 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC: 100 (A/B)
4.				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: 3m diam.)				Prevalence Index Worksheet
1.				Total % Cover of
2.				OBL species _____ x 1 =
3.				FACW species _____ x 2 =
4.				FAC species _____ x 3 =
5.				FACU species _____ x 4 =
_____ = Total Cover				UPL species _____ x 5 =
Herb Stratum (Plot size: 1m diam.)				Column totals (A) (B)
1. Phalaris arundinacea	80	Yes	FACW	Prevalence Index = B / A =
2. Equisetum telmateia	20	Yes	FACW	
3.				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> Dominance test is > 50% <input type="checkbox"/> Prevalence test is ≤ 3.0 * 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 * (explain)
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
_____ 100 = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1.				
2.				
_____ = Total Cover				
% Bare Ground in Herb Stratum:				
Remarks:				

SOIL

Sampling Point – DP-X2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR3/1	100					Sand	
6-14	5YR4/1	95	10YR 4/6	5	C	M	Sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Loc: 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 Soils³

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

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

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

Remarks:

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 **(except MLRA 1, 2, 4A & 4B)** (B9)
☐ 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 & 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

<p>Field Observations</p> <div style="display: flex; justify-content: space-between;"> <div> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (includes capillary fringe) </div> <div> Depth (in): 2" Depth (in): 0" Depth (in): 0" </div> </div>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DP- X3

Project Site: Lakeside - 18825 Renton Maple Valley SE		Sampling Date: 7/23/2018
Applicant/Owner: Lakeside Industries, Inc., Attn: Karen Deal		Sampling Point: DP- X3
Investigator: Sarah Sandstrom, Roen Hohfield		City/County: Renton
Sect., Township, Range: S 19 T 23N R 06E		State: WA
Landform (hillslope, terrace, etc): hillslope	Slope (%): 5	Local relief (concave, convex, none): none
Subregion (LRR): A	Lat:	Long:
Soil Map Unit Name: Urban land	Datum:	
Soil Map Unit Name: Urban land		NWI classification: none
Are climatic/hydrologic conditions on the site typical for this time of year? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		WETs is drier than average
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		(If needed, explain any answers in Remarks.)
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampling Point within a Wetland?	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"/>		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1.				Number of Dominant Species that are OBL, FACW, or FAC:	3 (A)
2.				Total Number of Dominant Species Across All Strata:	3 (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	100 (A/B)
4.					
				= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m diam.)					
1.				Prevalence Index Worksheet	
2.				Total % Cover of	
3.				OBL species	Multiply by
4.				FACW species	x 1 =
5.				FAC species	x 2 =
				FACU species	x 3 =
				UPL species	x 4 =
				Column totals	x 5 =
				(A)	(B)
				Prevalence Index = B / A =	
Herb Stratum (Plot size: 1m diam.)					
1.	Phalaris arundinacea	80	Yes	FACW	
2.	Galium sp.	10	Yes	NI	
3.	Equisetum telmateia	30	Yes	FACW	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
				= Total Cover	
Woody Vine Stratum (Plot size:)					
1.	Rubus armeniacus	10	Yes	FAC	
2.					
				= Total Cover	
				= Total Cover	
% Bare Ground in Herb Stratum:					
Remarks:					

Hydrophytic Vegetation Indicators	
<input checked="" type="checkbox"/>	Dominance test is > 50%
<input type="checkbox"/>	Prevalence test is ≤ 3.0 *
<input type="checkbox"/>	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 * (explain)
* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sampling Point – DP-X3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Loc: 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 Soils³

☐ 2cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Other (explain in remarks)
☐

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

Restrictive Layer (if present): Type: Depth (inches):	Hydric soil present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

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 **(except MLRA 1, 2, 4A & 4B)** (B9)
☐ 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 & 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

<p>Field Observations</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe) </div> <div style="width: 30%;"> Depth (in): Depth (in): Depth (in): </div> </div>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: **Very dry**