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 are of the site through the installation of acceleration and deceleration lanes along SR 169. This report is written to satisfy the minimum requirements for critical areas report contents per King County Code (KCC) 21A.24.110.

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. The central part of the property includes several sheds, workshops and concrete stalls that are used to store mulch, gravel and other materials. The site was in-use at the time of our study.



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 removal of large stockpiles of material associated with the previous use; remediation of historical petroleum handling operations leaking from underground storage tanks; demolition of several existing structures; 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 10th and 12th, 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 11th and July 23rd, 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 23rd, 2018.



Figure 2. Study area outlined in green. Additional investigation area (July 23rd, 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 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 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.

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.

3.2.1 Wetland A

Wetland A is located within the southern side of the developed area. Ecology blocks abut a portion of the northern edge, and the eastern section has been ditched. Wetland A is a slope/depressional wetland with emergent and scrubshrub 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 onsite; 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 aerials 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. This area is 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

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. 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. 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, 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 2-4 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 (~60 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 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	Oncorhynchus kisutch	Cedar River	Federal Candidate, PHS Listed

Common Name of Listed Habitat or Species	Habitat Type or Scientific Name (species)	Site Name	Federal Status, State Status, or PHS Listing
Chinook salmon	O. tshawytscha	Cedar River	Federally threatened, PHS Listed
Kokanee salmon	O. nerka	Cedar River	PHS Listed
Sockeye salmon	O. nerka	Cedar River	PHS Listed
Resident Coastal Cutthroat	O. clarki	Cedar River	PHS Listed
Dolly Varden / Bull Trout	Salvelinus confluentus	Cedar River	Federally threatened, PHS Listed
Winter Steelhead	O.mykiss	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.

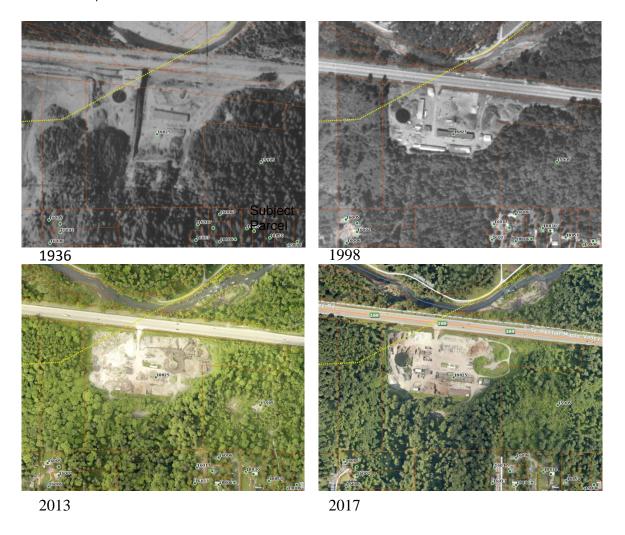


Figure 5. Historic aerial imagery showing land use on the subject parcel, Source: King County iMap.

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), wildlife habitat conservation areas, and geologically hazardous 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 rightof-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 4,108 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.
 - 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.
- The project constructs a new 12-foot wide gravel access road from the
 development area to an existing wellhouse within the buffer of Wetland
 A. The total area of the access road within the wetland buffer is 1,346
 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 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.
- c. The access road does not contribute to the risk of landslide or erosion.
- d. The area is not subject to channel migration.
- e. Construction does not involve an 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. In order to allow for sufficient space for the truck turn around and covered storage, the outermost portion of the aquatic area buffer along the southwest side of the development is proposed for averaging. Through buffer averaging, 5,490 square feet of standard aquatic buffer area would be impacted by the combined area of storage bins and the required 15-foot setback. The expanded buffer area will extend restored buffer functions to 6,043 square feet of area along Stream B, Wetland A, and Wetland 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.

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. The Applicant plans to comply with the County's recommendation to restore all stream and wetland buffers bordering the development area, in addition to mapped wildlife network areas.

The mitigation plan (Appendix A) includes 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. This is particularly intended to reconnect Stream B with a natural floodplain area. Finally, the mitigation plan will restore a dense native vegetation community, including trees, shrubs, and groundcover throughout the area.

The success of the mitigation will be evaluated over a five-year monitoring program 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. Encroachments within the building setback will be limited to biofilter swales constructed to avoid excavation or fill in the adjacent buffer. KCC 21A.24.200.F allows minor encroachments into the building setback if 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 through buffer averaging.
- 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.

• Only the proposed 15' building setback extends into the standard buffer area.

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.

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

Table 3. Summary of stream types and buffer widths.

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). The Applicant does not propose any instream work; however, by regrading the bank of Stream B above the OHWM, 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. 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.

Mitigation and Monitoring Plan

MAPLE VALLEY **ASPHALT FACILITY**

EXISTING LANDSCAPE

CONSTRUCTION

MATERIALS YARD

WETLAND A CATEGORY IV

15' CRITICAL AREA BUFFER BSBL, TYP.

EXISTING WELL HOUSE CEDAR RIVER

165' BUFFER

STREAM C

TYPE N 65' BUFFER

WETLAND B

CATEGORY III



VICINITY MAPS

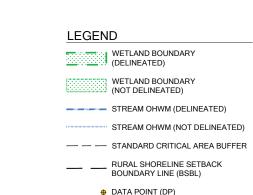
R.O.W. WETLAND

RENTON-MAPLE VALLEY ROAD

WETLAND DD (ESTIMATED)

CATEGORY III

PROPERTY BOUNDARY



PROPERTY BOUNDARY

SHEET INDEX M1.0 - PROJECT OVERVIEW M2.0 - IMPACTS & MITIGATION PLAN (1 OF 2) M2.1 - IMPACTS & MITIGATION PLAN (2 OF 2) M3.0 - TESC & NOXIOUS WEED REMOVAL PLAN (1 OF 2) M3.1 - TESC & NOXIOUS WEED REMOVAL PLAN (2 OF 2) M4.0 - NOXIOUS WEED REMOVAL & CONTROL NOTES AND TESC AND SOIL PREPARATION NOTES M5.0 - PLANTING PLAN (1 OF 2) M5.1 - PLANTING (2 OF 2) M6.0 - PLANT SCHEDULES & NOTES & DETAILS M7.0 - MITIGATION NOTES AND PLANT INSTALLATION SPECIFICATIONS

WETLAND D

(ESTIMATED)

CATEGORY I

- NOTES

 1. CRITICAL AREAS DELINEATED BY THE WATERSHED COMPANY ON JANUARY 10 AND 12, 2017. SURVEY DATED 04-08-2016 RECEIVED
- FROM TRIAD. 20300 WOODINVILLE SNOHOMISH RD. NE SUITE A
 WOODINVILLE, WA 98072. (425) 415-2000.
- BUFFER WIDTHS AND RATINGS ARE



EXISTING CONDITIONS

WETLAND C

150' BUFFER

STREAM B

165' BUFFER CULVERT

STREAM A

65' BUFFER

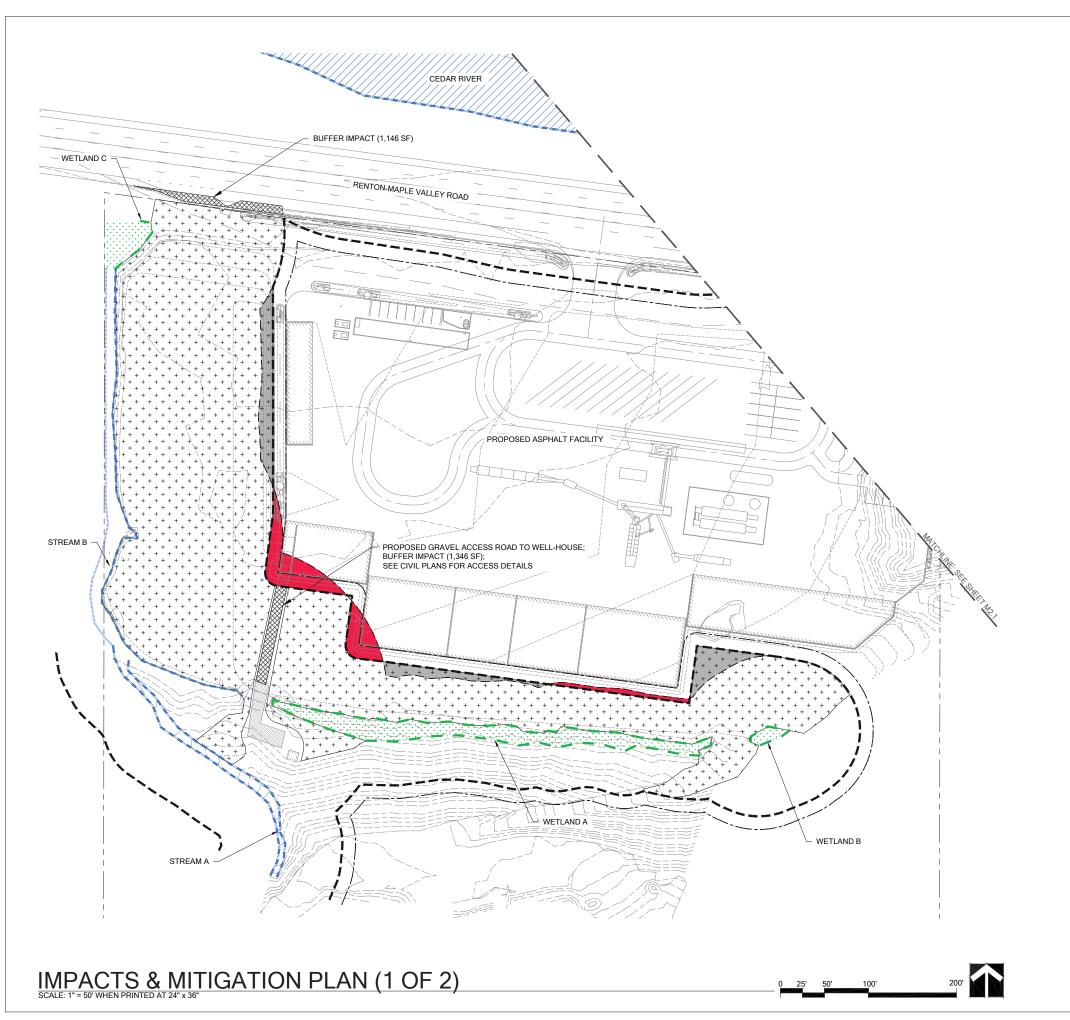
MODERATE HABITAT SCORE



SHEET NUMBER: M1.0 OF 10

DESIGNED: DRAFTED CHECKED: JOB NUMBER:





LEGEND

EXISTING FEATURES

WETLAND BOUNDARY

WETLAND BOUNDARY STREAM OHWM

STREAM OHWM (NOT DELINEATED)

STANDARD CRITICAL AREA BUFFER

PROPERTY BOUNDARY

PROPOSED FEATURES

PROPOSED COMBINED CRITICAL AREA BUFFER AFTER AVERAGING

PROPOSED BUILDING SETBACK BOUNDARY LINE (BSBL)

BUFFER REDUCTION AREA (5,490 SF) BUFFER ADDITION AREA (6,043 SF) BUFFER RESTORATION AREA (182,821 SF)

BUFFER IMPACTS AREA (5,364 SF)

RESTORATION NOTES

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.

COMPANY

750 Sixth Street South Kirkland WA 98033 p 425.822.5242 f 425.827.8136

Science & Design

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

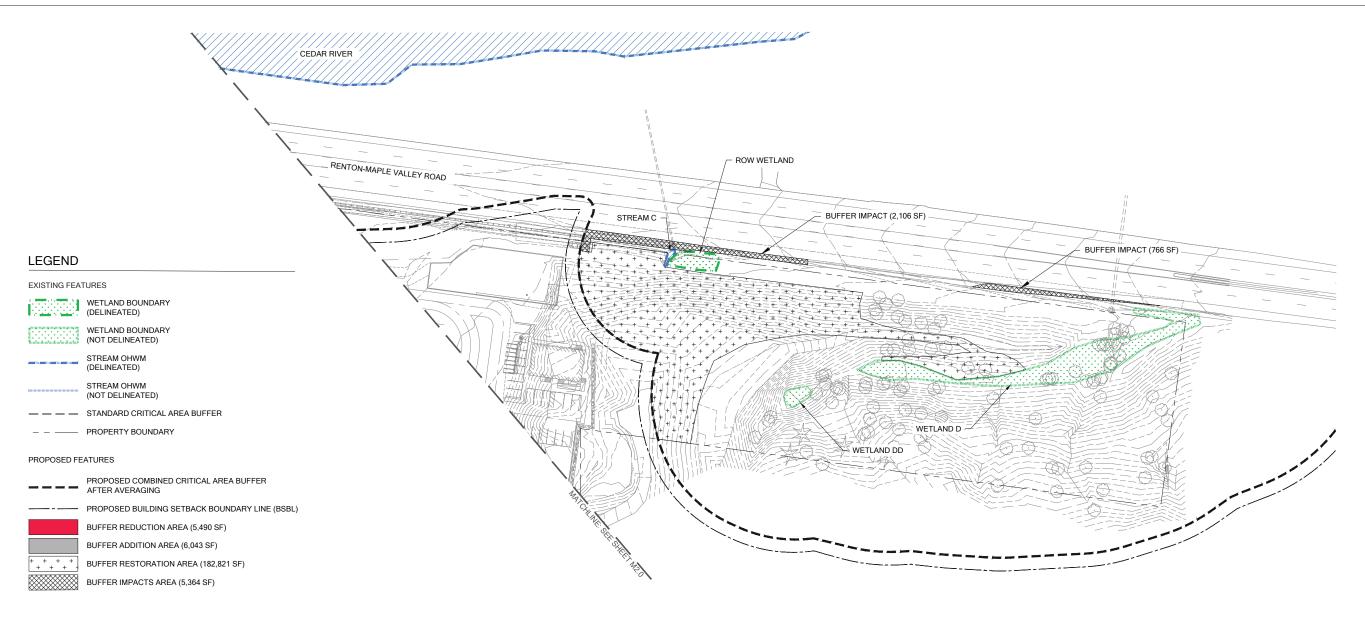
NOT FOR CONSTRUCTION

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

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

160414

SHEET NUMBER: M2.0 OF 10



RESTORATION NOTES

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.

00,

MAPLE VALLEY ASPHALT FACILITY
MITIGATION PLAN
KAREN DEAL, LAKESIDE INDUSTRIES

WATERSHED COMPANY

750 Sixth Street South Kirkland WA 98033 p 425.822.5242 f 425.827.8136 www.watershedco.com Science & Design

SUBMITTALS & REVISIONS

NO. DATE DESCRIPTION

1 08-27-18 DRAFT PERMIT SET

GENERAL NOTES

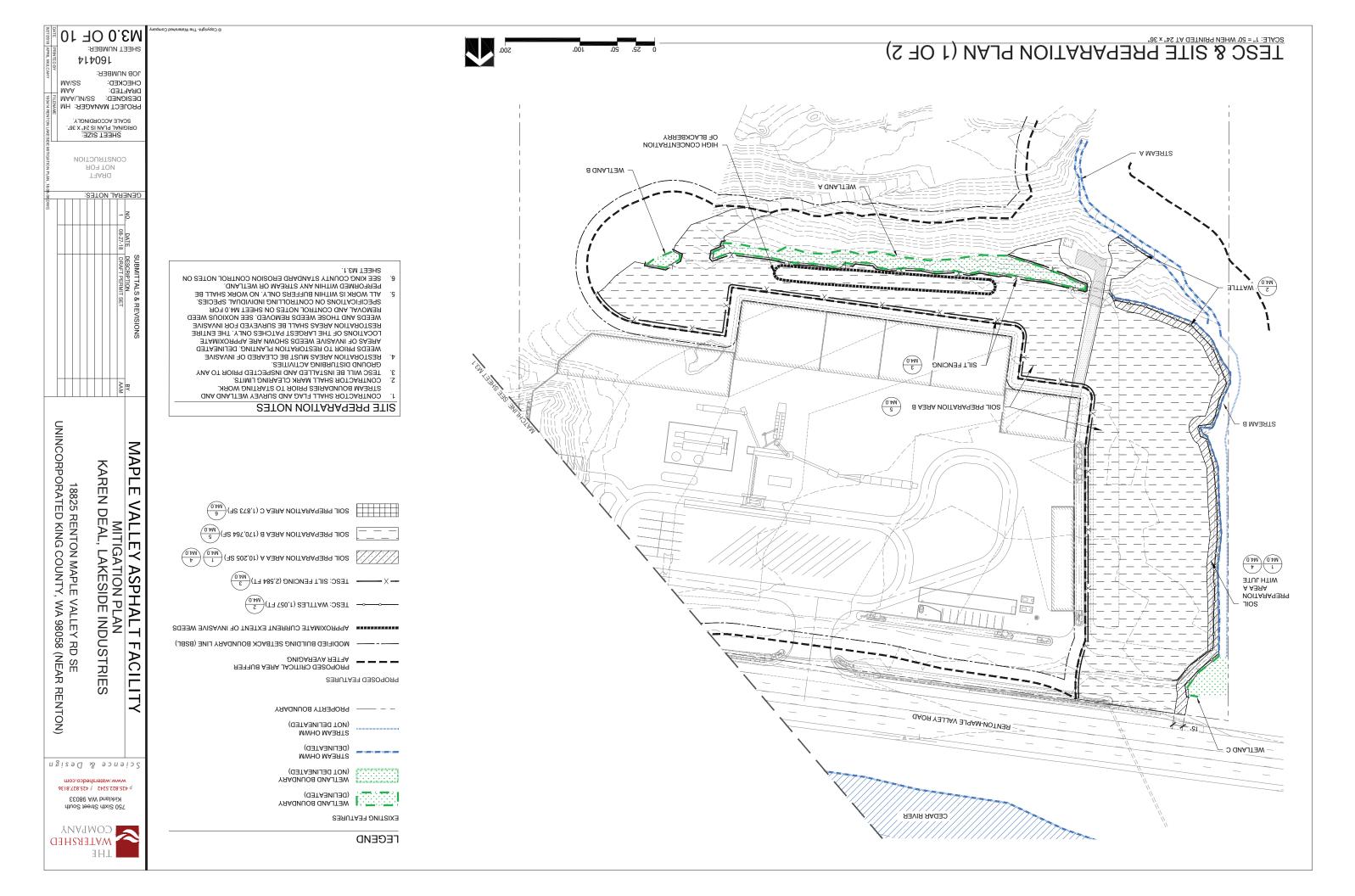
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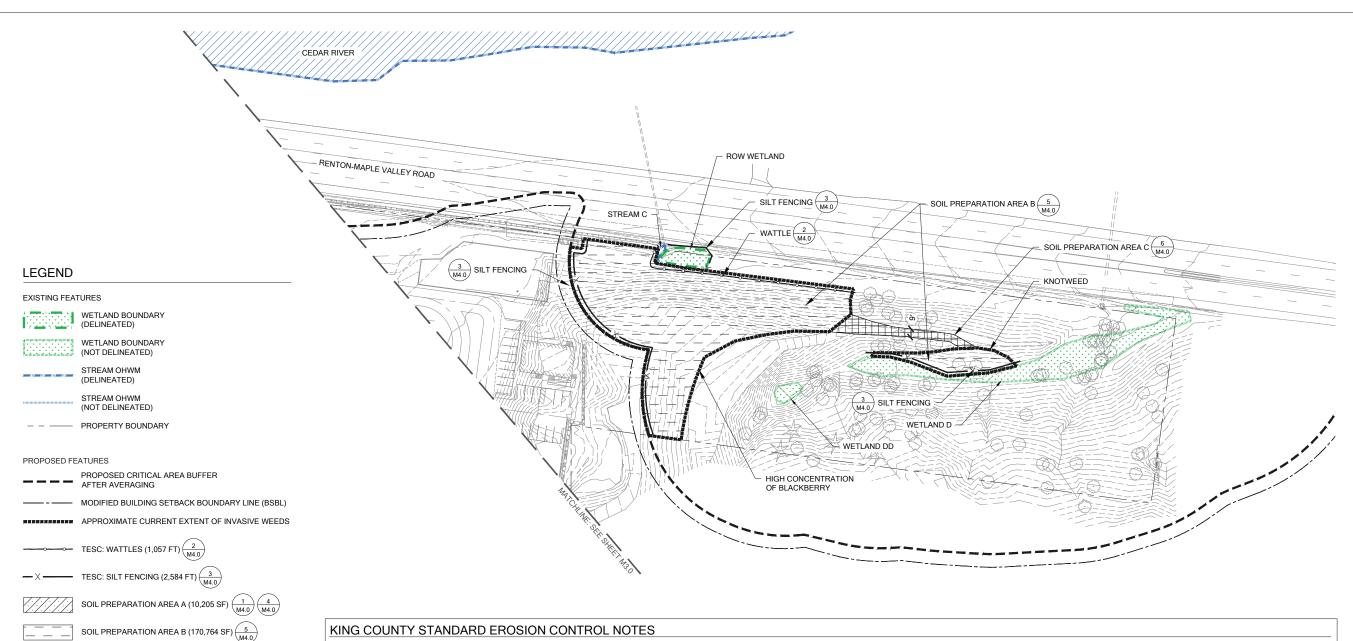
SHEET SIZE: ORIGINAL PLAN IS 24" X 36". SCALE ACCORDINGLY.

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

160414

SHEET NUMBER: M2.1 OF 10





KING COUNTY STANDARD EROSION CONTROL NOTES

- 1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC.) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTEOS, CHANNELS, RETENTION FACILITIES,
- 2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
- 3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (SWDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND
- 4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.
- 5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, FLOW CONTROL BMP LOCATIONS (EXISTING AND PROPOSED), AND ADJACENT PROPERTIES IS MINIMIZED.

- 8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
- 9. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
- 10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH DURING THE DRY SEASON, BY-MONTHLY DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT
- 11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH
- 12. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE KING COUNTY SURFACE WATER DESIGN MANUAL
- 13. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE DPER INSPECTOR.

SOIL PREPARATION AREA C (1,873 SF) $\frac{6}{M4.0}$

- 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.
- 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 AREAS SHALL BE SURVEYED FOR INVASIVE WEEDS AND THOSE WEEDS REMOVED. SEE NOXIOUS WEED REMOVAL AND CONTROL NOTES ON SHEET M4.0 FOR SPECIFICATIONS ON CONTROLLING INDIVIDUAL SPECIES.
- ALL WORK IS WITHIN BUFFERS ONLY. NO WORK SHALL BE PERFORMED WITHIN ANY STREAM OR WETLAND.
- SEE KING COUNTY STANDARD EROSION CONTROL NOTES ON





COMPANY 750 Sixth Street South Kirkland WA 98033 Science & Design VALLEY ASPHALT FACILIT LAN : INDUSTRIES IGATION PLA LAKESIDE I

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NOT FOR CONSTRUCTION

SCALE ACCORDINGLY.

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

SHEET NUMBER:

M3.1 OF 10

NOXIOUS WEED REMOVAL & CONTROL NOTES

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

REMOVE JAPANESE KNOTWEED:

- I. 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.
- REVEGETATE PER PLANTING PLAN. COVER WITH WOOD CHIP 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:

- . 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
- 3. AFTER REED CANARYGRASS HAS BEEN REMOVED, AREA SHOULD BE MULCHED AND PLANTED PER PLAN.
- 4. DISPOSE OF REMOVED MATERIAL OFF-SITE AT A PROFESSIONAL FACILITY.

REMOVE HIMALAYAN/EVERGREEN BLACKBERRY

- 1. CUT ABOVE GROUND PORTION OF BLACKBERRY AND REMOVE OFF-SITE. ENSURE THAT NO NATIVE PLANTS ARE REMOVED.
 2. CANES SHALL BE REMOVED FROM CANOPY OF TREES TO REMAIN TO
- THE EXTENT FEASIBLE AS DETERMINED BY THE RESTORATION SPECIALIST.
- 3. DIG UP OR PULL THE REMAINING ROOT BALL, ENSURE THAT NO NATIVE PLANT ROOTS ARE DAMAGED.
- 4. REPLACE ANY DIVOTS CREATED WHEN REMOVING THE PLANT WITH APPROVED TOPSOIL
- 5. 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.
- 6. REVEGETATE PER PLANTING PLAN. COVER WITH WOOD CHIP MULCH FOUR INCHES DEEP.
- MONITOR SITE THROUGHOUT GROWING SEASON FOR EMERGING CANES AND GRUB OUT AND REMOVE ANY NEW PLANTS. CONTINUE TO CUT BACK CANES TEN (10) FEET FROM THE PLANTING AREA.

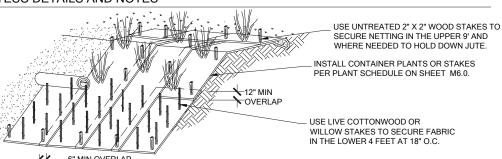
REMOVE ENGLISH IVY:

- PHYSICALLY REMOVE ALL ENGLISH IVY VINES AND ROOTS FROM THE PLANTING AREA.
- 2. IF GROWING ON TREE TRUNKS, CUT VINES TO HEIGHT OF 4' OFF GROUND DO NOT PULL DOWN FROM TREE CROWNS
- 3. IVY CAN RESPROUT FROM BELOW-GROUND PORTIONS, SO 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' 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:

- I. FOR SMALL PLANTS, DIG OR PULL UP PLANT, TAKING CARE THAT ROOTS ARE REMOVED.
- FOR LARGER PLANTS, CUT TREE AT BASE
- 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

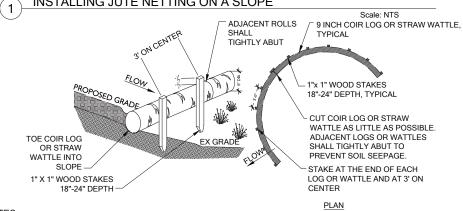
TESC DETAILS AND NOTES



- 6" MIN OVERLAF

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

INSTALLING JUTE NETTING ON A SLOPE

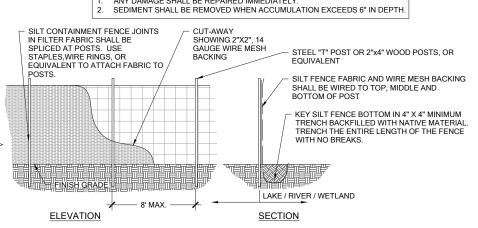


- COIR LOG OR STRAW WATTLE SHALL BE 9 INCH IN DIAMETER
- STAKING: WOODEN STAKES ARE RECOMMENDED TO SECURE THE COIR LOG OR STRAW WATTLE. BE SURE TO USE A STAKE THAT IS LONG ENOUGH TO PROTRUDE SEVERAL INCHES ABOVE THE COIR LOG OR STRAW WATTLE: 18" IS A GOOD LENGTH FOR HARD, ROCKY SOIL: FOR SOFT LOAMY SOIL USE A 24" STAKE
- WHEN INSTALLING RUNNING LENGTHS OF COIR LOG OR STRAW WATTLE, BUTT THE SECOND LOG TIGHTLY AGAINST THE FIRST; DO NOT OVERLAP THE ENDS.
- STAKE THE LOGS OR WATTLES AT EACH END AND THREE (3) FEET ON CENTER. STAKES SHOULD BE DRIVEN OUTSIDE THE THE COIR LOG OR STRAW WATTLE, BUT CLOSE ENOUGH TO HOLD IT IN PLACE. LEAVE 2 - 3 INCHES OF THE STAKE PROTRUDING ABOVE THE COIR LOG OR STRAW WATTLE. A HEAVY SEDIMENT LOAD WILL TEND TO PICK UP THE COIR LOG OR STRAW WATTLE AND COULD PULL IT OFF THE STAKES IF THEY ARE DRIVEN DOWN TOO LOW
- WHEN COIR LOG OR STRAW WATTLE ARE USED FOR FLAT GROUND APPLICATIONS, DRIVE THE STAKES STRAIGHT DOWN WHEN INSTALLING COIR LOG OR STRAW WATTLE ON SLOPES, DRIVE THE STAKES PERPENDICULAR TO THE SLOPE. DRIVE THE FIRST END STAKE OF THE SECOND COIR LOG OR STRAW WATTLE AT AN ANGLE TOWARD THE FIRST COIR LOG OR STRAW WATTLE IN ORDER TO HELP ABUT THEM TIGHTLY TOGETHER

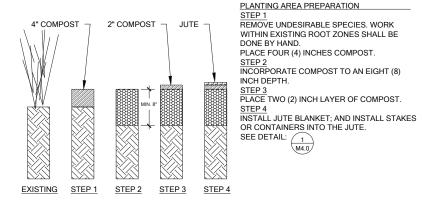
WATTLE INSTALLATION (2)



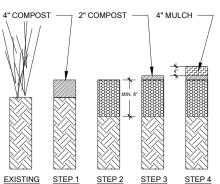
Scale: NTS



SOIL PREPARATION DETAILS AND NOTES



SOIL PREPARATION AREA A: AMEND TOPSOIL & INSTALL JUTE



PLANTING AREA PREPARATION REMOVE UNDESIRABLE SPECIES AND DECOMPACT SOILS. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND. PLACE FOUR (4) INCHES COMPOST

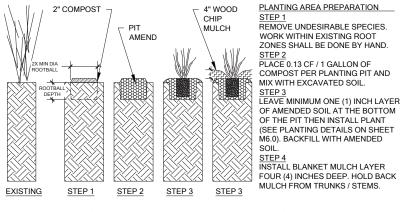
INCORPORATE COMPOST TO AN EIGHT (8) INCH DEPTH.

PLACE TWO (2) INCH LAYER OF COMPOST.

INSTALL MULCH LAYER FOUR (4) INCHES DEEP AND INSTALL PLANTS. (SEE PLANTING DETAILS ON SHEET M6.0.)

SOIL PREPARATION AREA B: AMEND TOPSOIL

Scale: NTS



SOIL PREPARATION AREA C: PIT AMEND EXISTING

Scale: NTS

COMPANY

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Science & Desigr

(NEAR RENTON) INDUSTRIES

SPHALT FACILIT

4

VALLEY

MAPLE

VALLEY RD WA 98058 (N Ш GATION PI LAKESIDE ON MAPLE COUNTY, RENTON D KING CC MITIC KAREN DEAL, I 18825 RI UNINCORPORATED

GENERAL NOTE

SCALE ACCORDINGLY.

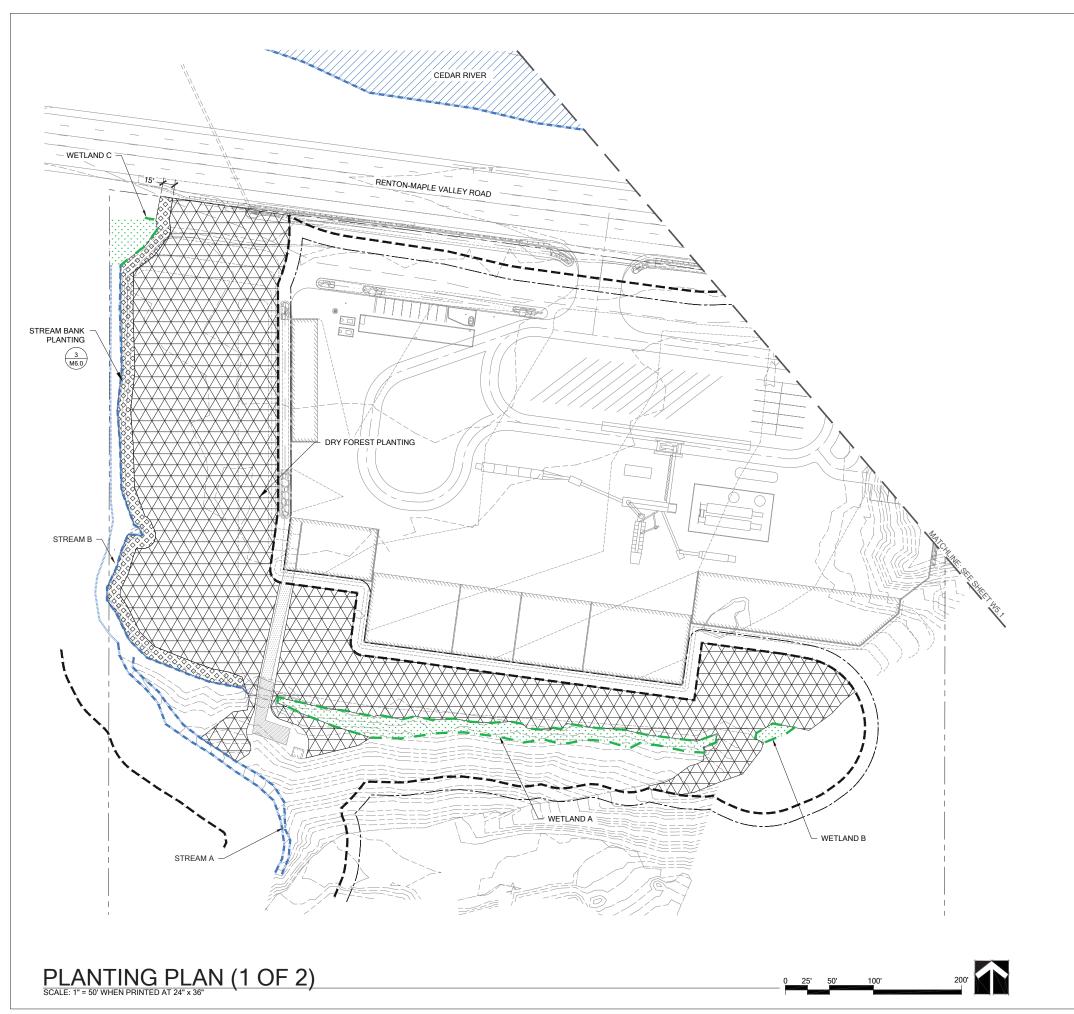
NOT FOR CONSTRUCTION

PROJECT MANAGER: HM DESIGNED: SS/NL/AAN DRAFTED AAM CHECKED: SS/AM

JOB NUMBER 160414 SHEET NUMBER

NOXIOUS WEED REMOVAL & CONTROL NOTES AND TESC AND SOIL PREPARATION NOTES

SILT FENCE INSTALLATION



LEGEND

EXISTING FEATURES

WETLAND BOUNDARY (DELINEATED)

WETLAND BOUNDARY

STREAM OHWM (DELINEATED)

> STREAM OHWM (NOT DELINEATED)

PROPERTY BOUNDARY

PROPOSED FEATURES

PROPOSED CRITICAL AREA BUFFER AFTER AVERAGING

MODIFIED BUILDING SETBACK BOUNDARY LINE (BSBL)

DRY FOREST RESTORATION AREA (167,799 SF)

STREAM BANK RESTORATION AREA (10,205 SF)

WET FOREST RESTORATION AREA (2,960 SF)

UNDERSTORY PLANTING AREA (1,872 SF)

PLANTING NOTES

- SEE SHEET M4.0 FOR SITE PREPARATION NOTES.
 SEE SHEET M6.0 FOR PLANT SCHEDULE 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.



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Science & Design

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

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: JOB NUMBER:

160414

SHEET NUMBER: M5.0 OF 10



PLANTING NOTES

- SEE SHEET M4.0 FOR SITE PREPARATION NOTES.
 SEE SHEET M6.0 FOR PLANT SCHEDULE AND PLANTING DETAILS.
- 3. 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.





COMPANY

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Science & Design

SUBMITTALS & REVISIONS

SUBMITTALS & REVISIONS

NO. DATE DESCRIPTION

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SO ST-18 DRAFT PERMIT SET ARM

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DRAFT NOT FOR CONSTRUCTION

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

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

160414

SHEET NUMBER: M5.1 OF 10

DEVELOPEST DI ANTINIS (167 700 SEV	STREAM BANK DI ANTING (10 205 SE)	IINDERSTORY PLANTING (1872 SE)	WET FOREST PLANTING	ANTING (2,960 SF)	THE
	CUZ,UI) DAII INATA ANAO MEANING	7/0/1			OTHER DIFF
l	TREES QTY SPACING				COMPANY
ABIES GRANDIS/ 620 9FT O.C. 2 GAL. GRAND FIR	ACER WACROPHYLLUM/ 28 9FT O.C. 2 GAL. BIGLEAF MAPLE	CORYLUS CORNUTA/ 10 6FT O.C. 1 GAL. WESTERN HAZEL	PICEA SITCHENSIS/ SITKA SPRUCE	17 9FT O.C. 2 GAL.	750 Sixth Street South Kirkland WA 98033
ACER MACROPHYLLUM/ 620 9FT O.C. 2 GAL. BIGLEAF MAPLE	ALNUS RUBRA 28 9FT O.C. 2 GAL. RED ALDER	MAHONIA AQUIFOLIUM 10 6FT O.C. 1 GAL. TALL OREGON GRAPE	THUJA PLICATA WESTERN RED CEDAR	17 9FT O.C. 2 GAL.	p 425.822.5242 f 425.827.8136 www.watershedco.com
PRUNUS EMARGINATA/ 620 9FT O.C. 2 GAL. BITTER CHERRY	POPULUS BALSAMIFERA 28 9FT O.C. 2 GAL. BLACK COTTONWOOD	OEMLERIA CERASIFORMIS/ 10 6FT O.C. 1 GAL. INDIAN PLUM	SHRUBS		Science & Design
PSEUDOTSUGA MENZIESII/ 620 9FT O.C. 2 GAL. DOLIGI AS FIR	THUJA PLICATA/ 28 9FT O.C. 2 GAL. WESTFRIN RED CEDAR	SAMBUCUS RACEMOSA/ 10 6FT O.C. 1 GAL. RED ELDERBERRY	CORNUS SERICEA/ RED-OSIER DOGWOOD	13 6FT O.C. 1 GAL.	((
SHRUBS	SHRUBS	GROUNDCOVERS	PHYSOCARPUS CAPITATUS/ PACIFIC NINEBARK	S/ 13 6FT O.C. 1 GAL.	
ACER CIRCINATUM/ 360 6FT O.C. 1 GAL. VINE MAPLE	ACER CIRCINATUM/ 22 6FT O.C. 1 GAL. VINE MAPLE	DICENTRA FORMOSA 50 3FT O.C. 1 GAL. BLEEDING HEART	RUBUS PARVIFLORUS/ THIMBLEBERRY	13 6FT O.C. 1 GAL.	S
CORYLUS CORNUTA/ 360 6FT O.C. 1 GAL. WESTERN HAZEL	OEMLERIA CERASIFORMIS/ 22 6FT O.C. 1 GAL. INDIAN PLUM	TELLIMA GRANDIFLORA/ 50 3FT O.C. 1 GAL. FRINGECUP	GROUNDCOVERS		E BIE
HOLODISCUS DISCOLOR/ 360 6FT O.C. 1 GAL. OCEANSPRAY	PHILADELPHUS LEWISII/ 22 6FT O.C. 1 GAL. MOCK OPANGE	NOTES		100 3FT O.C.	TSL s as
MAHONIA AQUIFOLIUM/ 360 6FT O.C. 1 GAL. TALL OREGON GRAPE	PHYSOCARPUS CAPITATUS/ 22 6FT O.C. 1 GAL. PACIFIC NINEBARK	 PLANT SHRUBS AND GROUNDCOVERS TO FILL IN GAPS IN THE NATIVE UNDERSTORY CREATED BY ACCESS TO THE KNOTWEED REMOVAL AREA AND WET FOREST 		100 3FT O.C. 1 GAL.	ΓΕΛΙ ИDΓ ⁄/И
RHAMNUS PURSHIANA/ 360 6FT O.C. 1 GAL. CASCARA	ROSA NUTKANA/ 22 6FT O.C. 1 GAL. NOOTKA ROSE	BUFFER PLANTING AREA. 2. ALL SHRUBS AND GROUNDCOVERS SHOULD BE CLUMPED IN GROUPS OF 5 TO 7 INDIVIDUALS PER	L <u>IVESTAKES</u> SALIX LUCIDA	170 18" O.C. 3" MIN.	: AVF DE 1
ROSA GYMNOCARPA/ 360 6FT O.C. 1 GAL. WOOD ROSE	RUBUS SPECTABILIS/ 22 6FT O.C. 1 GAL. SALMONBERRY	סידונות.		170 18" O.C. 3" MIN.	VESI LIOV
RUBUS PARVIFLORUS/ 360 6FT O.C. 1 GAL. THIMBLEBERRY			SITKA WILLOW	LENGTH	TAE YAJ M M
SYMPHORICARPOS ABLUS/ 360 6FT O.C. 1 GAL.	DESCHAMPSIA CESPITOSA/ 225 3FT O.C. 1 GAL. TUFTED HAIRGRASS		NOTES 1. THE NEAREST 4 FEE	NOTES 1. THE NEAREST 4 FEET TO THE BOUNDARY OF WETLAND D	Τ - - Τ
GROUNDCOVERS	FRAGARIA CHILOENSIS/ 225 3FT O.C. 1 GAL. COASTAL STRAWBERRY		SHOULD BE PLANTEL TRIANGULAR SPACIN 2. THE REMAINDER OF	D WITH LIVE STAKES USING NG. THIS PLANTING AREA SHOULD BE	e BE DE'
ACHILLEA MILLEFOLIUM/ 3000 SEE NOTE 1 GAL.	<u>LIVE STAKES</u>		PLANTED WITH CONT 3. ALL SHRUBS AND GR	TAINERIZED PLANT STOCK. ROUNDCOVERS SHOULD BE	NE
CHAMAENERION 3000 SEE NOTE 1 GAL. ANGUSTIFOLIUM	RA/ 695 18" O.C.		CLUMPED IN GROUP: SPECIES.	'S OF 5 TO 7 INDIVIDUALS PER	ІЈЧ / ІЯАЖ ПРОР
FIREWEED LUPINUS POLYPHYLLUS/ 3000 SEE NOTE 1 GAL.	SALIX SCOULERIANA 695 18" O.C. 3" MIN. SCOULER WILLOW				
BIG-LEAF LUPINE POLYSTICHUM MUNITUM 3000 SEE NOTE 1 GAL.	NOTES 1. THE NEAREST 4 FEET TO THE STREAM'S OHWM SHOULD BE 7. PLANTED AND SECURED WITH LIVE STAKES USING TRIANGULAR				NΠ
	SPACING. 2. THE REMAINING 11 FEET OF STREAM BUFFER SHOULD BE PANTED WITH CONTAINERIZED PLANT STOCK.				
1. ALL SHRUBS SHOULD BE CLUMPED IN GROUPS OF 5 TO 10 INDIVIDUALS PER SPECIES. 2. PLACE GROUNDCOVERS IN CLUSTERS OF 30 TO 40 PLANTS, 3'-0" O.C. THROUGHOUT PLANTING AREA.	ALL STAKES, SHRUBS, AND GROUNDCOVERS SHOULD BE CLUMPED IN GROUPS OF 5 TO 7 INDIVIDUALS PER SPECIES.				MAA MAA
NOTES: 1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE COOTEDLIST COOTEDLIST. 2. LOOSEN SIDES AND BOTTOM OF PLANT PIT STEMOVE FROM POT 8 ROLIGHUP ROOT BALL BEFORE NISTALLING. IF PLANT TIS EXCEPTIONALLY PROOT-BOUND OR CONTAINS CHICLING. IF PLANT TIS EXCEPTIONALLY PROOT-BOUND OR CONTAINS CHICLING ROOTS, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTENATIVE. IF 888 STOCK, REMOVE ALL TWINNEWIRE. 8 REMOVE BURLAP FROM CONTAINER STOCK PREFERRED. 4. SOAK PLANTING PIT AFTER PLANTING (NOTE: CONTAINER STOCK PREFERRED.) 4. SOAK PLANTING PIT AFTER PLANTING BEDS. HOLD BACK MULCH FROM TRUNK/STEMS 4. SOAK PLANTING OF PLANTING BEDS. HOLD BACK MULCH FROM TRUNK/STEMS 4. SOAK PLANTING CHORE YEAR AFTER INITIAL PLANTING 2. XMIN DIA ROOTBALL MIT APPLANTING 2. XMIN DIA ROOTBALL MIT APPLANTING CONTAINER PLANTING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT THING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT THING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT CONTAINER PLANTING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT CONTAINER PLANTING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT THING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT THING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT THERM UP SOIL AROUND PLANT CONTAINER PLANTING ON A SLOPE SCHEIL SAGE NOTE AROUND PLANT THE SAGE NOTE AROUND PLANT	TIVE SOIL. 2 CONTAINER PLANTING	NOTES: 1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA 2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT 3. SOAK PLANTING PIT AFTER PLANTING BEMOVE FROM POT OR BURLAP & ROUGH-UP ROOT BALL BEFORE INSTALLING ROOT BUNCH BE ROOTS - PRUNE IF NECESSARY. IF PLANT IS EXCEPTIONALLY ROOT BAULCH LAYER. HOLD BACK MULCH SPECIFIED MULCH LAYER. HOLD BACK MULCH FROM TRUNK'STEMS FROM TRUNK'STEMS REMOVE DEBRIS AND LARGE ROCKS FROM PLANTING PIT AND SCARIFY SIDES AND BASE. BACKFILL WITH SPECIFIED SOIL. FIRM UP SOIL AROUND PLANT. SCAB: NTS SCAB: NTS A. LIVE A. LIVE A. LIVE A. LIVE A. LIVE A. LIVE B. LIVE B. LIVE A. LIVE B. LIVE B. LIVE A. LIVE B. LIVE	TALL HARDWOOD THANGS SHALL BE: TITALL SO MIN. 278 WHEDULE FOR SPACH WHO SOIL AROUN TER AFTER PLANT THE AFTER P	CUTTINGS DURING THEIR DORMANCY. DO NOT ALLOW THEM TO DRY OUT. 18" TO 1" IN DIAMETER OR APPROVED EQUIVALENT. 19 SO SEPTH INTO SOIL. USE TRIANGULAR SPACING. SEE PLANTING 18 REPORTING UP. 19 INSTALLED CUTTING. 10 INSTALLED CUTTING. 11 ENSURE NO LIVE BUDS 12 EXPOSED ABOVE GROUND. 13 ENSURE NO AIR POCKETS 14 SPECIFIED MULCH LAYER 15 SPECIFIED MULCH LAYER 16 ENSURE NO AIR POCKETS 16 SPECIFIED MULCH LAYER 17 ENSURE NO AIR POCKETS 18 SPECIFIED MULCH LAYER 18 SPECIFIED 19 SPECIFIED MULCH LAYER 19 SPECIFIED MULCH LAYER 10 SPECIFIED MULCH LAYER 10 SPECIFIED MULCH LAYER 10 SPECIFIED MULCH LAYER 10 SPECIFIED MULCH LAYER 11 SPECIFIED MULCH LAYER 11 SPECIFIED MULCH LAYER 11 SPECIFIED MULCH LAYER 12 SPECIFIED MULCH LAYER 13 SPECIFIED MULCH LAYER 14 SPECIFIED MULCH LAYER 14 SPECIFIED MULCH LAYER 15 SPECIFIED MULCH LAYER 16 SPECIFIED MULCH LAYER 17 SPECIFIED MULCH LAYER 17 SPECIFIED MULCH LAYER 18 SPECIFIED MULCH LAYER 18 SPECIFIED MULCH LAYER 18 SPECIFIED MULCH LAYER 19 SPECIFIED MULCH LAYER 10 SPECIFIED MULCH LAYER 11 SPECIFIED MULCH LAYER 12 SPECIFIED MULCH LAYER 13 SPECIFIED MULCH LAYER 14 SPECIFIED MULCH LAYER 15 SPECIFIED MULCH LAYER 16 SPECIFIED MULCH LAYER 17 SPECIFIED MULCH LAYER 17 SPECIFIED MULCH LAYER 18 SPECIFIED MULCH LAYER 18 SPECIFIED MULCH LAYER 18 SPECIFIED MULCH LAYER 19 SPECIFIED MULCH LAYER 19 SPECIFIED MULCH LAYER 10 SP	SUBMITTALS & REVISIONS GENERAL NOT FOR ORIGINAL PLANIES BY CHECKED: SSNILAAM REPROPERTY SSNILAAM REPROPERTY ON STRUCTION NOT FOR NOT FOR SSNILAAM REPROPERTY SSNILAAM REPROPERTY OB NUMBER: 1 08-27-18 DRAFT PERMIT SET ONGIGINAL PLANIES BY TO 00-27-18 DRAFT PERMIT SET ONGIGINAL PLANIES BY TO 08-27-18 DRAFT PERMIT SET ONGIGINAL PROPERTY PERMIT SET ONGIGINAL PROPERTY PERM

MITIGATION NOTES

PROJECT SUMMARY

182.821 SQUARE FEET OF STREAM BUFFER AND WETLAND BUFFER WILL BE ENHANCED THROUGH REMOVAL OF INVASIVE VEGETATION, PLANTING OF NATIVE VEGETATION, AND MONITORING AND MAINTENANCE OF PLANTED VEGETATION 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.

- 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.

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

PS 1 SOILS:

- A. SOILS WILL BE DECOMPACTED PRIOR TO PLANTING.
- B. SOILS 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.
- B. 80% SURVIVAL OF ALL WOODY PLANTINGS AT THE END OF YEAR TWO. THIS STANDARD MAY BE MET THROUGH ESTABLISHMENT OF INSTALLED PLANTS OR BY REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS. SURVIVAL BEYOND YEAR TWO 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 60% COVER OF NATIVE WOODY SPECIES BY THE END OF YEAR 3. 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 IN ANY OF THE PLANTING AREAS. IN ANY MONITORING YEAR, MORE THAN 5% COVER OF INVASIVE WEEDS IN ANY YEAR WILL TRIGGER MAINTENANCE WEEDING.

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- AND SECOND-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 TWO MONITORING YEARS. REPLACE PLANTS AS DIRECTED IN SUBSEQUENT MONITORING REPORTS.
- 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
- 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 WOOD CHIPS AS NECESSARY TO MAINTAIN A 4-INCH-THICK MULCH LAYER AND KEEP DOWN WEEDS.

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

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE

- 1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL
- 2. 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).
- 3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED, WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
- 4 NOMENCI ATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 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

- 1. 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
- 2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

- 1. 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
- 2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT
- 3. 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.
- 4. 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

1. 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

- 2. 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
- 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

- 1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT
- 2. 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
- 3 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

1. 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

- 1. 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.
- 2. 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

- 1. 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.
- 2. 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.
- 3. 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
- 4. 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

- 1. 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
- 2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE

PLANT MATERIAL

GENERAL

- 1. 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.
- 2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH

SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT

- 1. 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
- 2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
- 3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

COMPANY

750 Sixth Street South Kirkland WA 98033

Science & Design

-AN INDUSTRIES VALLEY RD WA 98058 (N P. EY ASPE IGATION I LAKESID N MAPLE, COUNTY, MITI DEAL, 18825 R UNINCORPORATED KAREN

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GENERAL NOTE NOT FOR CONSTRUCTION

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

PROJECT MANAGER: HM DESIGNED: SS/NL/AAN DRAFTED: AAM CHECKED: SS/AM

160414 SHEET NUMBER: M7.0 OF 10

JOB NUMBER

MITIGATION NOTES AND PLANT INSTALLATION SPECIFICATIONS

APPENDIX B

Wetland Ratings

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

ī		• •
Name of wetland: Renton Maple Valley SE – Wetland:	and A	Date of Site visit: <u>1/10/2017</u>
Rated by: Nell Lund, Anna Hoenig Trained by Eco	ology? Yes	S⊠ No \Box Date of Training: $\underline{10/2008}$, $\underline{10/2015}$
SEC: 19 TWNSHP: 23N RNGE: 16 Is S/T/R in Apper		
SUMMAR		
Category based on FUNCTIONS provide I □ II □ III □ IV ☒ Category I = Score ≥70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Sco	re for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions 15
Category based on SPECIAL CHARA I □ II □ Does not Apply ⊠ Final Category (choose the		TX7
Check the appropriate type and cla		
Estuarine		Depressional
Natural Heritage Wetland		Riverine
Bog		Lake-fringe
Mature Forest		Slope
Old Growth Forest		Flats
Coastal Lagoon		Freshwater Tidal
Interdunal		
None of the above		Check if unit has multiple HGM classes present □

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. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X*
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? 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. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		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)? \boxtimes NO – go to 2 \square 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 \boxtimes NO – go to 3 \square 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 (<i>slope can be very gradual</i>), ☐ 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

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.
	\boxtimes NO - go to 6 \square 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. \square NO – go to 7 \square 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. \boxtimes NO – go to 8 \square YES – The wetland class is Depressional
0	V 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

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.

HGM classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	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: ☐ Unit is a depression with no surface water leaving it (no outlet)points = 3 ☐ Unit has an intermittently flowing, or highly constricted permanently flowing outletpoints = 2 ☑ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	1
	☐ 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 (If ditch is not permanently flowing treat unit as "intermittently flowing")	
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). \Box YES points = 4 \boxtimes NO points = 0	0
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): □ Wetland has persistent, ungrazed, vegetation > = 95% of area	3
D	D1.4 Characteristics of seasonal ponding or inundation. 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. □ Area seasonally ponded is > ½ total area of wetland	0
_	NOTE: See text for indicators of seasonal and permanent inundation.	
D	Total for D 1 Add the points in the boxes above	4
D	 D 2. Does the wetland unit have the opportunity to improve water quality? 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? 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. □ Grazing in the wetland or within 150 ft 	(see p. 44)
	☐ Untreated stormwater discharges to wetland	1,11
	☐ Tilled fields or orchards within 150 ft of wetland	multiplier
	☐ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	2
	☐ Residential, urban areas, golf courses are within 150 ft of wetland	<u>2</u>
	☐ Wetland is fed by groundwater high in phosphorus or nitrogen	
	☑ Other: <u>industrial operations</u>	
	YES multiply score in D 1. by 2 NO multiply score in D 1. by 1	
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	8

D	Depressional and Flats Wetlands	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream of	
_	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 46)
D	D 3.1 Characteristics of surface water flows out of the wetland unit	
	☐ Unit is a depression with no surface water leaving it (no outlet)points = 4	
	☐ Unit has an intermittently flowing, or highly constricted permanently flowing outlet .points = 2	
	☐ Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	0
	outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	☐ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) ———————————————————————————————————	
D	D 3.2 Depth of storage during wet periods	
ע	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).	
	\square Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7	
	☐ The wetland is a "headwater" wetland"points = 5	2
	\square Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5	3
	\boxtimes Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3	
	☐ Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that	
	trap waterpoints = 1	
	\square Marks of ponding less than 0.5 ftpoints = 0	
D	D 3.3 Contribution of wetland unit to storage in the watershed	
	Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the	
	area of the wetland unit itself. \Box The area of the basin is less than 10 times the area of the unitpoints = 5	
	\Box The area of the basin is less than 10 times the area of the unit	0
	\square The area of the basin is more than 100 times the area of the unitpoints = 0	
	☐ Entire unit is in the FLATS class	
_	-	
D	Total for D 3 Add the points in the boxes above	3 (0)
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	(see p. 49)
	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.	
	Note which of the following conditions apply.	Multiplier
	☐ Wetland is in a headwater of a river or stream that has flooding problems	
	☑ Wetland drains to a river or stream that has flooding problems	2
	☐ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river	
	or stream that has flooding problems	
	□ Other	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	6

These questions apply to wetlands of all HGM of HABITAT FUNCTIONS - Indicators that wetland fun		
H 1. Does the wetland have the potential to provide hal		
H 1.1 Vegetation structure (see p. 72)	, <u>,</u> <u>,</u> <u>,</u>	
Check the types of vegetation classes present (as defined more than 10% of the area of the wetland if unit sma ☐ Aquatic bed ☐ Emergent plants ☐ Scrub/shrub (areas where shrubs have >30% cover	aller than 2.5 acres.	
\Box Forested (areas where trees have >30% cover)		
☐ Forested areas have 3 out of 5 strata (canopy, subthat each cover 20% within the forested polygon	canopy, shrubs, herbaceous, moss/ground-cover)	1
Add the number of vegetation types that qualify. If you	have:	
	4 structures or more	
H 1.2. Hydroperiods (see p. 73)		
Check the types of water regimes (hydroperiods) present cover more than 10% of the wetland or ¼ acre to count. □ Permanently flooded or inundated □ Occasionally flooded or inundated □ Occasionally flooded or inundated □ Saturated only □ Permanently flowing stream or river in, or adjacen □ Seasonally flowing stream in, or adjacent to, the w □ Lake-fringe wetland = 2 points □ Freshwater tidal wetland = 2 points	4 or more types present	1
H 1.3. Richness of Plant Species (see p. 75) Count the number of plant species in the wetland that species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, put If you counted: List species below if you want to:		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	1
[riparian braided channels] NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high".	
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.	1
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?	
H 2.1 <u>Buffers</u> (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." □ 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)	1
H 2.2 Corridors and Connections (see p. 81) 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? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) □ NO = go to H 2.2.2 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? □ YES = 2 points (go to H 2.3) □ NO = H 2.2.3 H 2.2.3 Is the wetland: □ within 5 mi (8km) of a brackish or salt water estuary OR □ within 3 mi of a large field or pasture (>40 acres) OR □ within 1 mi of a lake greater than 20 acres? □ YES = 1 point □ NO = 0 points	2

H 2.3 <u>1</u>	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)	
Wh	ich 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 (<i>full description in WDFW PHS report p. 152</i>)	
П	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 that 100%; crown cover may be less that 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)	4
\boxtimes	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.	4
	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	
	ote: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby etlands are addressed in question H2.4.	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) □ 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	3
☐ There is at least 1 wetland within ½ mile. points = 2 ☐ There are no wetlands within ½ mile. points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	10
TOTAL for H1 from page 14	5
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	15

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
criteria are met. SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
_	
☐ The dominant water regime is tidal,	
☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt.	
\Box YES = Go to SC 1.1	
⊠ NO, not an estuarine wetland	
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?	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?	Cat. I
☐ 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 Spartina 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 a f Spartina would be rated a Category II while the	Cat. II
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87)	
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.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)	Cat. I
□ S/T/R information from Appendix D – OR – ⊠ Accessed from WNHP/DNR web site □ YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 ⊠ NO	Cat. I
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? \Box YES = Category I	
⋈ NO = Not a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
 Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? 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. 1. 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.) □ Yes – go to Q.3 ⊠ NO – go to Q.2 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? □ Yes – go to Q.3 ⊠ NO – is not a bog for purpose of rating 3. 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)? □ Yes – Is a bog for purpose of rating □ NO – go to Q.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. 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 	Cat. I
as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? \[\sum \text{YES} = \text{Category I} \] \[\sum \text{NO} - \text{is not a bog for purpose of rating} \]	

SC 4.0 Forested Wetlands (see p. 90)	
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>	
☐ 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.	
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.	Cat. I
☐ 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 that that found in old-growth.	,
\square YES = Category 1 \square NO – not a forested wetland with special characteristics	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
☐ The lagoon in which the wetland is located contains surgace water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	Cat. I
☐ YES – Go to SC 5.1 ☐ NO – not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	Cat. II
Species on p. 74). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.	
☐ The wetland is larger than 1/10 acre (4350 square feet)	
☐ YES = Category I ☐ NO = Category II	
SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Westarn Boundary of Upland	
Ownership or WBUO)? □YES – go to SC 6.1 □ NO – not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas:	Cat. II
 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 SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? 	Cat. III
\square YES = Category II \square NO – go to SC 6.2 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?	
acre? ☐ YES = Category III	
Category of wetland based on Special Characteristics	NT A
Choose the "highest" rating if wetland falls into several categorie, and record on p. 1. If you answered NO for all types enter "Not Applicable" on p.1.	NA

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

•	1			
Name of wetland: Renton Maple Valley SE – Wetla	and B Date of Site visit: $1/10/2017$			
Rated by: Nell Lund, Anna Hoenig Trained by Ecol	logy? Yes⊠ No \square Date of Training: $\underline{10/2008}$, $\underline{10/2015}$			
SEC: 19 TWNSHP: 23N RNGE: 16 Is S/T/R in Append				
	Y OF RATING			
Category based on FUNCTIONS provided I □ II □ III □ IV ☒ Category I = Score ≥70 Category II = Score 51-69 Category III = Score 30-50	Score for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions 17			
Category IV = Score < 30	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) Check the appropriate type and class of wetland being rated.				
Wetland Type	Wetland Class			
Estuarine	□ Depressional ⊠			
Natural Heritage Wetland	Riverine			
Bog	☐ Lake-fringe ☐			
Mature Forest				
Old Growth Forest	☐ Flats ☐			
Coastal Lagoon	☐ Freshwater Tidal ☐			
Interdunal				
None of the above	☐ Check if unit has multiple HGM classes present			

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

^{*}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)? \boxtimes NO – go to 2 \square 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 \boxtimes NO – go to 3 \square 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 (<i>slope can be very gradual</i>), ☐ 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

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.
	\boxtimes NO - go to 6 \square 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. \square NO – go to 7 \square 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. \boxtimes NO – go to 8 \square 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.

HGM classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	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: □ Unit is a depression with no surface water leaving it (no outlet)points = 3 □ Unit has an intermittently flowing, or highly constricted permanently flowing outletpoints = 2 □ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)points = 1 □ 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 (If ditch is not permanently flowing treat unit as "intermittently flowing")	3
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions).	
D	$\Box \text{ YES} \qquad \text{points} = 4$ $\boxtimes \text{ NO} \qquad \text{points} = 0$	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
D	 ✓ Wetland has persistent, ungrazed, vegetation > = 95% of area	5
	D1.4 Characteristics of seasonal ponding or inundation.	
D	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. Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ½ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0 NOTE: See text for indicators of seasonal and permanent inundation.	0
D	Total for D 1 Add the points in the boxes above	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</u> into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? 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.	(see p. 44)
	Grazing in the wetland or within 150 ft	
	☐ Untreated stormwater discharges to wetland	multiplier
	☐ Tilled fields or orchards within 150 ft of wetland	
	☐ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	<u>2</u>
	☐ Residential, urban areas, golf courses are within 150 ft of wetland	<u></u>
	☐ Wetland is fed by groundwater high in phosphorus or nitrogen	
	☑ Other: industrial operations	
	YES multiply score in D 1. by 2 NO multiply score in D 1. by 1	
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	16

D	Depresssional and Flats Wetlands		
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream deg		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 46)	
D	D 3.1 Characteristics of surface water flows out of the wetland unit		
	☐ Unit is a depression with no surface water leaving it (no outlet)points = 4		
	\Box Unit has an intermittently flowing, or highly constricted permanently flowing outlet points = 2		
	☐ Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	4	
	outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1	-	
	(If ditch is not permanently flowing treat unit as "intermittently flowing")		
	☐ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)		
n	points = 0		
D	D 3.2 Depth of storage during wet periods 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).		
	\square Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7		
	☐ The wetland is a "headwater" wetland" points = 5		
	\square Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5	3	
	\boxtimes Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3		
	☐ Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that		
	trap waterpoints = 1		
	\square Marks of ponding less than 0.5 ftpoints = 0		
D	D 3.3 Contribution of wetland unit to storage in the watershed		
	Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the		
	area of the wetland unit itself.		
	☐ The area of the basin is less than 10 times the area of the unit	0	
	☐ The area of the basin is 10 to 100 times the area of the unit		
	☐ The area of the basin is more than 100 times the area of the unit		
	☐ Entire unit is in the FLATS classpoints = 5		
D	Total for D 3 Add the points in the boxes above	7	
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)	
	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.		
	Note which of the following conditions apply.	Multiplier	
	☐ Wetland is in a headwater of a river or stream that has flooding problems		
	☐ Wetland drains to a river or stream that has flooding problems	2	
	☐ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river	-	
	or stream that has flooding problems		
	□ Other		
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	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 hab		ııaı	
H 1.1 Vegetation structure (see p. 72)	itat for many species:		
Check the types of vegetation classes present (as defined more than 10% of the area of the wetland if unit smal		re or covers	
☐ Aquatic bed			
⊠ Emergent plants			
☐ Scrub/shrub (areas where shrubs have >30% cover)			
\boxtimes Forested (areas where trees have >30% cover)			
☐ Forested areas have 3 out of 5 strata (canopy, sub-c that each cover 20% within the forested polygon	anopy, shrubs, herbaceous, moss/	ground-cover)	1
Add the number of vegetation types that qualify. If you h	agve:		
That the number of vegetation types that qualify. If you h	4 structures or more		
	2 structures		
	1 structure		
1110 11 1 1 1 (72)		1	
H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) present	t within the wetland. The water re	agima has to	
cover more than 10% of the wetland or ½ acre to count.			
☐ Permanently flooded or inundated	4 or more types present	-	
 ✓ Seasonally flooded or inundated 	3 types present	_	
☐ Occasionally flooded or inundated	2 types present	-	
 ✓ Secasionary flooded of infundated ✓ Saturated only 		points = 0	1
•	1 types present	points – 0	
☐ Permanently flowing stream or river in, or adjacent			
☐ Seasonally flowing stream in, or adjacent to, the we	etland		
☐ Lake-fringe wetland = 2 points			
\Box Freshwater tidal wetland = 2 points			
H 1.3. <u>Richness of Plant Species</u> (<i>see p. 75</i>) Count the number of plant species in the wetland that of	cover at least 10 ft ² . (different pai	tches of the same	
species can be combined to meet the size threshold)			
You do not have to name the species.			
Do not include Eurasian milfoil, reed canarygrass, put	- ·		
	-	points = 2	
List species below if you want to:	_	points = 1	
	\square < 5 species	points = 0	
			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 [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. 	0
H 1. TOTAL Score - potential for providing habitat <i>Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</i>	4

H 2. Does the wetland have the opportunity to provide habitat for many species?	
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." □ 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)	4
H 2.2 Corridors and Connections (see p. 81) 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? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) ⋈ NO = go to H 2.2.2 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? ⋈ YES = 2 points (go to H 2.3) □NO = H 2.2.3 H 2.2.3 Is the wetland: □ within 5 mi (8km) of a brackish or salt water estuary OR □ within 3 mi of a large field or pasture (>40 acres) OR □ within 1 mi of a lake greater than 20 acres? □ YES = 1 point □ NO = 0 points	2

H 2.3 <u>1</u>	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)	
Wh	ich 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 (<i>full description in WDFW PHS report p. 152</i>)	
П	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 that 100%; crown cover may be less that 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.)	
\boxtimes	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 (<i>full descriptions in WDFW PHS report p. 161</i>)	4
\boxtimes	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.	4
	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	
	ote: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby etlands are addressed in question H2.4.	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) □ 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	3
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	13
TOTAL for H1 from page 14	4
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	17

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
criteria are met. SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
_	
☐ The dominant water regime is tidal,	
☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt.	
\Box YES = Go to SC 1.1	
⊠ NO, not an estuarine wetland	
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?	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?	Cat. I
☐ 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 Spartina 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 a f Spartina would be rated a Category II while the	Cat. II
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual rating I/II
mater, or configuous frontwater mediands.	

SC 2.0 Natural Heritage Wetlands (see p. 87)	
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.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)	Cat. I
□ S/T/R information from Appendix D – OR – ⊠ Accessed from WNHP/DNR web site □ YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 ⊠ NO	Cat. I
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? \Box YES = Category I	
⋈ NO = Not a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
 Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? 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. 1. 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.) □ Yes – go to Q.3 ⊠ NO – go to Q.2 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? □ Yes – go to Q.3 ⊠ NO – is not a bog for purpose of rating 3. 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)? □ Yes – Is a bog for purpose of rating □ NO – go to Q.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. 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 	Cat. I
as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? \[\sum \text{YES} = \text{Category I} \] \[\sum \text{NO} - \text{is not a bog for purpose of rating} \]	

SC 4.0 Forested Wetlands (see p. 90)	
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>	
☐ 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.	
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.	Cat. I
☐ 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 that that found in old-growth.	,
\square YES = Category 1 \square NO – not a forested wetland with special characteristics	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
☐ The lagoon in which the wetland is located contains surgace water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	Cat. I
☐ YES – Go to SC 5.1 ☐ NO – not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	Cat. II
Species on p. 74). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.	
☐ The wetland is larger than 1/10 acre (4350 square feet)	
☐ YES = Category I ☐ NO = Category II	
SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Westarn Boundary of Upland	
Ownership or WBUO)? □YES – go to SC 6.1 □ NO – not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas:	Cat. II
 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 SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? 	Cat. III
\square YES = Category II \square NO – go to SC 6.2 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?	
acre? ☐ YES = Category III	
Category of wetland based on Special Characteristics	NT A
Choose the "highest" rating if wetland falls into several categorie, and record on p. 1. If you answered NO for all types enter "Not Applicable" on p.1.	NA

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 Vall	ley SE – Wetland C	Date of Site visit: 1/1	12/2017
Rated by: Nell L	und. Anna Hoenig	Trained by Ecology? Yes	s⊠ No□ Date of Training	: <u>10/2008</u> , <u>10/2015</u>
•		, ,,	_	
SEC: <u>19</u> TWNS	HP: <u>23N</u> RNGE: <u>16</u> Is	s S/T/R in Appendix D? Y	es 🗆 No 🗵	
Category ba I □		UMMARY OF IONS provided by		
Category 1 Category 1	I = Score ≥70 II = Score 51-69 III = Score 30-50 IV = Score < 30	Sco	re for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions TOTAL score for functions	16 6 22 44
	ased on SPECIA		ISTICS of wetland	
•	Final Category		est" category from abov	re) III
[Wetla	nd Type	Wetland Class	
	Estuarine		Depressional	\boxtimes
	Natural Heritage V	Vetland \Box	Riverine	\boxtimes
	Bog		Lake-fringe	
	Mature Forest		Slope	
	Old Growth Forest		Flats	
	Coastal Lagoon		Freshwater Tidal	
	Interdunal			

Check if unit has multiple

HGM classes present

None of the above

 \boxtimes

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

^{*}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)? \boxtimes NO – go to 2 \square 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 \boxtimes NO – go to 3 \square 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 (<i>slope can be very gradual</i>), ☐ 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

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.
	\boxtimes NO - go to 6 \square 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. \square NO – go to 7 \square 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. \boxtimes NO – go to 8 \square YES – The wetland class is Depressional
0	
8	Your wetland unit seems to be difficult to classify and probably contains several different HGM classes

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.

HGM classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	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: ☐ Unit is a depression with no surface water leaving it (no outlet)points = 3 ☐ Unit has an intermittently flowing, or highly constricted permanently flowing outletpoints = 2 ☐ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)points = 1 ☐ 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 (If ditch is not permanently flowing treat unit as "intermittently flowing")	1	
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions).		
D		0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		
D			
	\square Wetland has persistent, ungrazed, vegetation $> = 1/2$ of areapoints = 3	5	
	\square Wetland has persistent, ungrazed vegetation $> = 1/10$ of areapoints $= 1$		
	\square Wetland has persistent, ungrazed vegetation <1/10 of areapoints = 0		
D	D1.4 Characteristics of seasonal ponding or inundation. 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. \square Area seasonally ponded is $> \frac{1}{2}$ total area of wetland	2	
	NOTE: See text for indicators of seasonal and permanent inundation.		
D	Total for D 1 Add the points in the boxes above	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? 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.	(see p. 44)	
	☐ Grazing in the wetland or within 150 ft		
	☐ Untreated stormwater discharges to wetland	multiplier	
	☐ Tilled fields or orchards within 150 ft of wetland		
	☐ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	<u>2</u>	
	☐ Residential, urban areas, golf courses are within 150 ft of wetland	<u> </u>	
	☐ Wetland is fed by groundwater high in phosphorus or nitrogen		
	☐ Other: industrial operations		
	YES multiply score in D 1. by 2 NO multiply score in D 1. by 1		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	16	

D	Depresssional and Flats Wetlands	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream	
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 46)
D	D 3.1 Characteristics of surface water flows out of the wetland unit	
	\Box Unit is a depression with no surface water leaving it (no outlet)points = 4	
	\Box Unit has an intermittently flowing, or highly constricted permanently flowing outlet .points = 2	
	☐ Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	0
	outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1	U
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	☐ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)	
	points = 0	
D	D 3.2 Depth of storage during wet periods	
İ	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	\square Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7	
I	☐ The wetland is a "headwater" wetland"points = 5	2
i	\square Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5	3
I	\boxtimes Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3	
I	☐ Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that	
I	trap waterpoints = 1	
l <u></u>	\square Marks of ponding less than 0.5 ft	
D	D 3.3 Contribution of wetland unit to storage in the watershed	
	Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the	
I	area of the wetland unit itself.	
	☐ The area of the basin is less than 10 times the area of the unit	0
	\Box The area of the basin is 10 to 100 times the area of the unitpoints = 3	
	\boxtimes The area of the basin is more than 100 times the area of the unitpoints = 0	
I	☐ Entire unit is in the FLATS classpoints = 5	
D	Total for D 3 Add the points in the boxes above	3
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)
	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.	
	Note which of the following conditions apply.	Multiplier
	☐ Wetland is in a headwater of a river or stream that has flooding problems	
		2
	☐ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river	2
	or stream that has flooding problems	
1	□ Other	
ſ	YES multiplier is 2 □ NO multiplier is 1	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 **Add score to table on p. 1	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 habit H 1.1 <u>Vegetation structure</u> (see p. 72)	nat for many species?	
Check the types of vegetation classes present (as defined more than 10% of the area of the wetland if unit small		
☐ Aquatic bed		
☐ Emergent plants		
Scrub/shrub (areas where shrubs have ≥30% cover)		
\boxtimes Forested (areas where trees have >30% cover)		
☑ Forested areas have 3 out of 5 strata (canopy, sub-c that each cover 20% within the forested polygon	canopy, shrubs, herbaceous, moss/ground-cover)	2
Add the number of vegetation types that qualify. If you h	nave:	
	4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0	
H 1.2. Hydroperiods (see p. 73)		
Check the types of water regimes (hydroperiods) present cover more than 10% of the wetland or ¼ acre to count. □ Permanently flooded or inundated □ Occasionally flooded or inundated □ Saturated only □ Permanently flowing stream or river in, or adjacent □ Seasonally flowing stream in, or adjacent to, the we □ Lake-fringe wetland = 2 points □ Freshwater tidal wetland = 2 points	(see text for descriptions of hydroperiods) 4 or more types presentpoints = 3 3 types presentpoints = 2 2 types presentpoints = 1 1 types presentpoints = 0 t to, the wetland	2
H 1.3. Richness of Plant Species (see p. 75) Count the number of plant species in the wetland that conspecies can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, pur If you counted: List species below if you want to:		
		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	2
NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high". 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 (>30 degree 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	10

H 2. Does the wetland have the opportunity to provide habitat for many species?	
H 2.1 <u>Buffers</u> (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." □ 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) □ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference	3
H 2.2 Corridors and Connections (see p. 81) 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? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) □ NO = go to H 2.2.2 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? □ YES = 2 points (go to H 2.3) □ NO = H 2.2.3 H 2.2.3 Is the wetland: □ within 5 mi (8km) of a brackish or salt water estuary OR □ within 3 mi of a large field or pasture (>40 acres) OR □ within 1 mi of a lake greater than 20 acres? □ YES = 1 point □ NO = 0 points	2

H 2.3 <u>1</u>	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)	
Wh	ich 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 (<i>full description in WDFW PHS report p. 152</i>)	
П	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 that 100%; crown cover may be less that 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)	4
\boxtimes	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.	4
	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	
	ote: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby etlands are addressed in question H2.4.	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) ☐ 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	
☐ The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile	3
☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed	
☐ The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ milepoints = 3	
☐ There is at least 1 wetland within ½ milepoints = 2	
\Box There are no wetlands within ½ milepoints = 0	
H 2 . TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	
TOTAL for H1 from page 14	10
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	22

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
criteria are met. SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
_	
☐ The dominant water regime is tidal,	
☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt.	
\Box YES = Go to SC 1.1	
⊠ NO, not an estuarine wetland	
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?	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?	Cat. I
☐ 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 Spartina 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 a f Spartina would be rated a Category II while the	Cat. II
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87)	
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.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)	Cat. I
□ S/T/R information from Appendix D – OR – ⊠ Accessed from WNHP/DNR web site □ YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 ⊠ NO	Cat. I
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? \Box YES = Category I	
⋈ NO = Not a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
 Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? 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. 1. 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.) □ Yes – go to Q.3 ⊠ NO – go to Q.2 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? □ Yes – go to Q.3 ⊠ NO – is not a bog for purpose of rating 3. 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)? □ Yes – Is a bog for purpose of rating □ NO – go to Q.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. 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 	Cat. I
as a significant component of the ground cover (>30% coverage of the total shrub/herbaceous cover)? \[\sum \text{YES} = \text{Category I} \] \[\sum \text{NO} - \text{is not a bog for purpose of rating} \]	

SC 4.0 Forested Wetlands (see p. 90)	
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>	
☐ 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.	
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.	Cat. I
☐ 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 that that found in old-growth.	
\square YES = Category 1 \square NO – not a forested wetland with special characteristics	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
☐ The lagoon in which the wetland is located contains surgace water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	Cat. I
☐ YES – Go to SC 5.1 ☐ NO – not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	Cat. II
☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.	
☐ The wetland is larger than 1/10 acre (4350 square feet)	
☐ YES = Category I ☐ NO = Category II	
SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Westarn Boundary of Upland Ownership or WRLO)?	
Ownership or WBUO)? □YES – go to SC 6.1 ⊠ NO – not an interdunal wetland for rating	
If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas:	Cat. II
 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 	
SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? \[\sum \text{YES} = \text{Category II} \text{NO} - \text{go to SC 6.2} \]	Cat. III
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?	
☐ YES = Category III	
Category of wetland based on Special Characteristics Choose the "highest" rating if wetland falls into several categorie, and record on p. 1.	NT A
If you answered NO for all types enter "Not Applicable" on p.1.	NA

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: <u>1/12/2017</u>
Rated by: <u>Sarah Sandstrom</u> , <u>Roen Hoehfield</u> Trained b	y Ecology? Yes⊠ No□ Date of Training: <u>4/2012</u>
SEC: 19 TWNSHP: 23N RNGE: 16 Is S/T/R in Appendix D? Y	
SUMMARY OF	
Category based on FUNCTIONS provided by I \square II \boxtimes III \square IV \square	y wetland
Category I = Score ≥70 Sco	ore for Water Quality Functions 12
Category II = Score 51-69	Score for Hydrologic Functions 16
Category III = Score 30-50 Category IV = Score < 30	Score for Habitat Functions 23
Category IV = Score < 30	TOTAL score for functions 51
I □ II □ Does not Apply ⊠ Final Category (choose the "higher Check the appropriate type and class of we	etland being rated.
Wetland Type Estuarine	Wetland Class Depressional
Natural Heritage Wetland	Riverine
Bog	
Mature Forest	Slope 🖂
Old Growth Forest	Flats
Coastal Lagoon	Freshwater Tidal
Interdunal	
None of the above	Check if unit has multiple

HGM classes present

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	YES	NO
recommended for its category)	ILS	110
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or		
Endangered animal or plant species (T/E species)?		X*
For the purposes of this rating system, "documented" means the wetland is on the appropriate state		Α.
or federal database.		
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered		
animal species?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state		X*
database. Note: Wetlands with State listed plant species are categorized as Category I Natural		
Heritage Wetlands (see p. 19 of data form).		
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the		
state?		X*
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the		
wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a		X
local management plan as having special significance.		

^{*}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)? \boxtimes NO – go to 2 \square 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 □ 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 (<i>slope can be very gradual</i>), ⊠ 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			

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.
	\boxtimes NO - go to 6 \square 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. <i>This means that any outlet, if present, is higher than the interior of the wetland.</i> \boxtimes NO – go to 7 \boxtimes 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. \boxtimes NO – go to 8 \square 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.

HGM classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	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.

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: ☐ Unit is a depression with no surface water leaving it (no outlet)	1	
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). \square YES points = 4 \boxtimes NO points = 0	0	
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):		
D	 ✓ Wetland has persistent, ungrazed, vegetation > = 95% of area	5	
D	D1.4 Characteristics of seasonal ponding or inundation. 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. □ Area seasonally ponded is > ½ total area of wetland		
D.	NOTE: See text for indicators of seasonal and permanent inundation.		
D	Total for D 1 Add the points in the boxes above	6 (see p. 44)	
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</u> into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? 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.		
	☐ Grazing in the wetland or within 150 ft		
	☐ Untreated stormwater discharges to wetland	multiplier	
	☐ Tilled fields or orchards within 150 ft of wetland		
	☐ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	<u>2</u>	
	Residential, urban areas, golf courses are within 150 ft of wetland	<u> </u>	
	☐ Wetland is fed by groundwater high in phosphorus or nitrogen		
	 ✓ Other: industrial operations 		
	YES multiply score in D 1. by 2 NO multiply score in D 1. by 1		
D	<u>TOTAL</u> - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	12	

D	Depresssional and Flats Wetlands		
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream degr		
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 46)	
D	D 3.1 Characteristics of surface water flows out of the wetland unit		
	\square Unit is a depression with no surface water leaving it (no outlet)points = 4		
	\boxtimes Unit has an intermittently flowing, or highly constricted permanently flowing outlet .points = 2		
	☐ Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	2	
	outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1	_	
	(If ditch is not permanently flowing treat unit as "intermittently flowing")		
	☐ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)		
n	points = 0		
D	D 3.2 Depth of storage during wet periods 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).		
	\square Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7		
	☐ The wetland is a "headwater" wetland"points = 5	2	
	\square Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5	3	
	\boxtimes Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3		
	☐ Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that		
	trap waterpoints = 1		
	\square Marks of ponding less than 0.5 ftpoints = 0		
D	D 3.3 Contribution of wetland unit to storage in the watershed		
	Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the		
	area of the wetland unit itself.		
	☐ The area of the basin is less than 10 times the area of the unit	3	
	☐ The area of the basin is 10 to 100 times the area of the unit		
	\Box The area of the basin is more than 100 times the area of the unitpoints = 0		
	☐ Entire unit is in the FLATS classpoints = 5		
D	Total for D 3 Add the points in the boxes above	8	
D	D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?	(see p. 49)	
	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.		
	Note which of the following conditions apply.	Multiplier	
	☐ Wetland is in a headwater of a river or stream that has flooding problems		
	☑ Wetland drains to a river or stream that has flooding problems	2	
	☐ Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river	2	
	or stream that has flooding problems		
	□ Other		
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	16	
	Add score to table on p. 1		

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 Vegetation structure (see p. 72) Check the types of vegetation classes present (as defined more than 10% of the area of the wetland if unit small. ☐ Aquatic bed ☐ Emergent plants ☐ Scrub/shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) ☐ Forested areas have 3 out of 5 strata (canopy, subtate each cover 20% within the forested polygon Add the number of vegetation types that qualify. If you have	canopy, shrubs, herbaceous, moss/ground-cover)	2	
	2 structurespoints = 1		
	1 structurepoints = 0		
H 1.2. Hydroperiods (see p. 73) Check the types of water regimes (hydroperiods) present cover more than 10% of the wetland or ¼ acre to count. □ Permanently flooded or inundated □ Occasionally flooded or inundated □ Saturated only □ Permanently flowing stream or river in, or adjacent □ Seasonally flowing stream in, or adjacent to, the wetland = 2 points □ Freshwater tidal wetland = 2 points	4 or more types present	1	
H 1.3. Richness of Plant Species (see p. 75) Count the number of plant species in the wetland that conspecies can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, pur If you counted: List species below if you want to:		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	1
NOTE: If you have four or more vegetation types or three vegetation types and open water the rating is always "high". 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.	
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? H 2.1 <u>Buffers</u> (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." □ 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)	
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." □ 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)	
open water >95% circumference	3
H 2.2 Corridors and Connections (see p. 81) 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? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) □ NO = go to H 2.2.2 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? □ YES = 2 points (go to H 2.3) □ NO = H 2.2.3 H 2.2.3 Is the wetland: □ within 5 mi (8km) of a brackish or salt water estuary OR □ within 3 mi of a large field or pasture (>40 acres) OR □ within 1 mi of a lake greater than 20 acres? □ YES = 1 point □ NO = 0 points	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 <u>http://wdfw.wa.gov/hab/phslist.htm</u>)	
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 that 100%; crown cover may be less that 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 (<i>full descriptions in WDFW PHS report p. 161</i>)	4
☑ 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.	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) □ 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	5
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	7
TOTAL for H1 from page 14	16
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	23

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
criteria are met.	
SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
☐ The dominant water regime is tidal,	
☐ Vegetated, and	
☐ With a salinity greater than 0.5 ppt.	
\square YES = Go to SC 1.1	
☑ NO, not an estuarine wetland	
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?	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions?	Cat. I
□ NO = Category II □ 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 Spartina 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 Spartina would be rated a Category II while the	Cat. II
relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual rating I/II
water, or contiguous resulvater wettailus.	

SC 2.0 Natural Heritage Wetlands (see p. 87)	
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.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)	Cat. I
□ S/T/R information from Appendix D – OR – ⊠ Accessed from WNHP/DNR web site □ YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 ⊠ NO	Cat. I
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?	
⋈ NO = Not a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? 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.	
1. 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.)	
\square Yes – go to Q.3	
\boxtimes NO – go to Q.2	
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?	
\square Yes – go to Q.3	
NO – is not a bog for purpose of rating 2. Description of the state	
3. 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	Cat. I
vegetation (more than 30% of the total shrub and herbaceous cover consists species in Table	
3)?	
☐ Yes – Is a bog for purpose of rating	
\square NO – go to Q.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that	
criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
4. 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)?	
\square YES = Category I	
□ NO – is not a bog for purpose of rating	

SC 4.0 Forested Wetlands (see p. 90)	'
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? If you answer yes you will still need to rate the wetland based on its functions.	
☐ Old growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/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.	
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.	Cat. I
☐ 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 quanitity of large downed material is generally less that found in old-growth.	
☐ YES = Category 1 ☐ NO – not a forested wetland with special characteristics	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	!
☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	_
☐ The lagoon in which the wetland is located contains surgace water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to	Cat. I
be measured near the bottom) ☐ YES – Go to SC 5.1	
SC 5.1 Does the wetland meet all of the following three conditions?	
☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	Cat. II
☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-	
grazed or un-mowed grassland. ☐ The wetland is larger than 1/10 acre (4350 square feet)	
$\Box \text{ YES} = \text{Category I} \qquad \Box \text{ NO} = \text{Category II}$	
SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Westarn Boundary of Upland Ownership or WBUO)?	
\square YES – go to SC 6.1 \square NO – not an interdunal wetland for rating	Cat II
If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: Long Boach Popingula, Londo west of SP 103	Cat. II
 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 SC 6.1 Is the westend 1 agree or larger or is it in a mossic of westends that is 1 agree or larger?	
SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? $\square \text{ YES} = \text{Category II} \qquad \square \text{ NO} - \text{go to SC 6.2}$ 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	Cat. III
acre? ☐ YES = Category III	
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categorie, and record on p. 1. If you answered NO for all types enter "Not Applicable" on p.1.	NA

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

ī		• •	
Name of wetland: Renton Maple Valley SE – Wetlar	nd DD	Date of Site visit: 7/	/23/2018
Rated by: Sarah Sandstrom, Roen Hoehfield Tr	ained by Ecolo	ogy? Yes⊠ No□ Da	ate of Training: 4/2012
SEC: 19 TWNSHP: 23N RNGE: 16 Is S/T/R in Append	ix D? Yes□ N	Io ⊠	
SUMMARY			
Category based on FUNCTIONS provide I □ II □ III ⋈ IV □ Category I = Score ≥70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Score Sc TO	Water Quality Functions for Hydrologic Functions ore for Habitat Functions FAL score for functions	s 14 21
I □ II □ Does not Apply ⊠	TERISTI	.CS of wetland	
Final Category (choose the " Check the appropriate type and clas			ve) III
Wetland Type		Wetland Class	
Estuarine		ressional	
Natural Heritage Wetland	Rive		
Bog		e-fringe	
Mature Forest			
Old Growth Forest	☐ Flat		
Coastal Lagoon	☐ Fres	hwater Tidal	
Interdunal			
None of the above	Chec	ck if unit has multiple	

HGM classes present

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	YES	NO
recommended for its category)	ILS	110
SP1. Has the wetland unit been documented as a habitat for any Federally listed Threatened or		
Endangered animal or plant species (T/E species)?		X*
For the purposes of this rating system, "documented" means the wetland is on the appropriate state		Α.
or federal database.		
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered		
animal species?		
For the purposes of this rating system, "documented" means the wetland is on the appropriate state		X*
database. Note: Wetlands with State listed plant species are categorized as Category I Natural		
Heritage Wetlands (see p. 19 of data form).		
SP3. Does the wetland unit contain individuals of Priority species listed by the WDFW for the		
state?		X*
SP4. Does the wetland unit have a local significance in addition to its functions? For example, the		
wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a		X
local management plan as having special significance.		

^{*}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)? \boxtimes NO – go to 2 \square 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 \boxtimes NO – go to 3 \square 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 (<i>slope can be very gradual</i>), ⊠ 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

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 flood			
	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.		
	\boxtimes NO - go to 6 \square 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.		
	\boxtimes NO – go to 7 \boxtimes 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.		
	\boxtimes NO – go to 8 \square YES – The wetland class is Depressional		
	≥ 110 - go to o = 125 - The wettaild 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.

HGM classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	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: □ Unit is a depression with no surface water leaving it (no outlet)points = 3 □ Unit has an intermittently flowing, or highly constricted permanently flowing outletpoints = 2 □ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 □ 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 (If ditch is not permanently flowing treat unit as "intermittently flowing")	3			
D	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions). \Box YES points = 4 \boxtimes NO points = 0	0			
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): □ Wetland has persistent, ungrazed, vegetation > = 95% of area	1			
D	D1.4 Characteristics of seasonal ponding or inundation. 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. □ Area seasonally ponded is > ½ total area of wetland				
D	NOTE: See text for indicators of seasonal and permanent inundation. Total for D 1 Add the points in the boxes above	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</u> into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? 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.				
	 □ Grazing in the wetland or within 150 ft □ Untreated stormwater discharges to wetland □ Tilled fields or orchards within 150 ft of wetland 	multiplier			
	 ✓ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ☐ Residential, urban areas, golf courses are within 150 ft of wetland 	2			
	 □ Wetland is fed by groundwater high in phosphorus or nitrogen □ Other: YES multiply score in D 1. by 2 NO multiply score in D 1. by 1 				
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 Add score to table on p. 1	8			

D	•			
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream deg			
	D 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 46)		
D	D 3.1 Characteristics of surface water flows out of the wetland unit			
	☐ Unit is a depression with no surface water leaving it (no outlet)points = 4			
	\Box Unit has an intermittently flowing, or highly constricted permanently flowing outlet points = 2			
	☐ Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	4		
	outflow and no obvious natural outlet , and/or outlet is a man-made ditchpoints = 1			
	(If ditch is not permanently flowing treat unit as "intermittently flowing")			
	☐ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)			
n	points = 0			
D	D 3.2 Depth of storage during wet periods 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).			
	\square Marks of ponding are at least 3 ft or more above the surface or bottom of outletpoints = 7			
	☐ The wetland is a "headwater" wetland"points = 5	2		
	\square Marks of ponding between 2 ft to < 3 ft from surface or bottom of outletpoints = 5	3		
	\boxtimes Marks are at least 0.5 ft to < 2 ft from surface or bottom of outletpoints = 3			
	☐ Unit is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that			
	trap waterpoints = 1			
	\square Marks of ponding less than 0.5 ftpoints = 0			
D	D 3.3 Contribution of wetland unit to storage in the watershed			
	Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the			
	area of the wetland unit itself.			
	\Box The area of the basin is less than 10 times the area of the unitpoints = 5	0		
	☐ The area of the basin is 10 to 100 times the area of the unit			
	☐ The area of the basin is more than 100 times the area of the unit			
_	☐ Entire unit is in the FLATS class			
D	Total for D 3 Add the points in the boxes above	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	(see p. 49)		
	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.			
	Note which of the following conditions apply.	Multiplier		
	☐ Wetland is in a headwater of a river or stream that has flooding problems			
	☐ Wetland drains to a river or stream that has flooding problems	2		
		_		
	□ Other			
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 Add score to table on p. 1	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 habi			
H 1.1 Vegetation structure (see p. 72)	nut for many species.		
Check the types of vegetation classes present (as defined more than 10% of the area of the wetland if unit small ☐ Aquatic bed ☐ Emergent plants ☐ Scrub/shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) ☐ Forested areas have 3 out of 5 strata (canopy, subcathat each cover 20% within the forested polygon	ler than 2.5 acres.	0	
Add the number of vegetation types that qualify. If you h	ave:		
	4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0		
H 1.2. Hydroperiods (see p. 73)			
Check the types of water regimes (hydroperiods) present cover more than 10% of the wetland or ¼ acre to count. □ Permanently flooded or inundated □ Occasionally flooded or inundated □ Saturated only □ Permanently flowing stream or river in, or adjacent □ Seasonally flowing stream in, or adjacent to, the we □ Lake-fringe wetland = 2 points □ Freshwater tidal wetland = 2 points	(see text for descriptions of hydroperiods) 4 or more types presentpoints = 3 3 types presentpoints = 2 2 types presentpoints = 1 1 types presentpoints = 0 2 to, the wetland	1	
H 1.3. Richness of Plant Species (see p. 75)			
Count the number of plant species in the wetland that c species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, pur			
		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. Solve 1 point	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?	
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." □ 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 □ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. Points = 4 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 □ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >25% circumference. Points = 3 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >50% circumference. Points = 3 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >50% circumference. Points = 3 □ 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 □ No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2 □ Heavy grazing in buffer. Points = 1 □ Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference	3
(e.g. tilled fields, paving, basalt bedrock extend to edge of wetland	
H 2.2 Corridors and Connections (see p. 81) 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? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) □ NO = go to H 2.2.2 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? □ YES = 2 points (go to H 2.3) □ NO = H 2.2.3 H 2.2.3 Is the wetland: □ within 5 mi (8km) of a brackish or salt water estuary OR □ within 3 mi of a large field or pasture (>40 acres) OR □ within 1 mi of a lake greater than 20 acres? □ YES = 1 point □ NO = 0 points	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 that 100%; crown cover may be less that 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 (<i>full descriptions in WDFW PHS report p. 161</i>)	4
☑ 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.	

Wetland name or number: $\boldsymbol{Wetland\ DD}$

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits)	
(see p. 84)	
☑ 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 developmentpoints = 5	
☐ The wetland is Lake-fringe on a lake with little disturbance and there are 3 other	
lake-fringe wetlands within ½ milepoints = 5	5
☐ There are at least 3 other wetlands within ½ mile, BUT the connections between them	
are disturbedpoints = 3	
☐ The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe	
wetland within ½ milepoints = 3	
\Box There is at least 1 wetland within ½ milepoints = 2	
\Box There are no wetlands within ½ mile	
H 2. TOTAL Score - opportunity for providing habitat	5
Add the scores from H2.1, H2.2, H2.3, H2.4	
TOTAL for H1 from page 14	16
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	21

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met. SC 1.0 Estuarine wetlands (see p. 86) Does the wetland unit meet the following criteria for Estuarine wetlands? □ The dominant water regime is tidal, □ Vegetated, and □ With a salinity greater than 0.5 ppt. □ YES = Go to SC 1.1 □ NO, not an estuarine wetland SC 1.1 Is the wetland 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? □ YES = Category I □ NO = go to SC 1.2 SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? □ YES = Category I □ NO = Category II □ 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 Spartina 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 Spartina 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 Spartina in determining the size threshold of 1 acre. □ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. □ The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Wetland Type	Category
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conditions? ☐ YES = Category I ☐ NO = Category II ☐ 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 Spartina 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 Spartina 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 Spartina in determining the size threshold of 1 acre. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. ☐ The wetland has at least 2 or the following features: tidal channels, depressions with open	Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-151?	Cat. I
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	however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 34 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland.	0

Wetland name or number: $\boldsymbol{Wetland\ DD}$

SC 2.0 Natural Heritage Wetlands (see p. 87)	
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.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)	Cot I
 □ S/T/R information from Appendix D – OR – ⊠ Accessed from WNHP/DNR web site □ YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 ⋈ NO 	Cat. I
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? \Box YES = Category I	
⊠ NO = Not a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs?	
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.	
1. 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.)	
\square Yes – go to Q.3	
\boxtimes NO – go to Q.2	
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?	
\square Yes – go to Q.3	
☑ NO – is not a bog for purpose of rating	
3. 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)?	Cat. I
\square Yes – Is a bog for purpose of rating	
\square NO – go to Q.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that	
criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
4. 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)?	
\square YES = Category I	
□ NO – is not a bog for purpose of rating	

SC 4.0 Forested Wetlands (see p. 90)	'
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>	
☐ 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.	
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.	Cat. I
☐ 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 quanitity of large downed material is generally less that found in old-growth.	,
☐ YES = Category 1 ☐ NO – not a forested wetland with special characteristics	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91)	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
☐ The lagoon in which the wetland is located contains surgace water that is saline or	Cat. I
brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
☐ YES – Go to SC 5.1 ☐ NO – not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	Cat. II
☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-	
grazed or un-mowed grassland. ☐ The wetland is larger than 1/10 acre (4350 square feet)	
☐ YES = Category I ☐ NO = Category II	
SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Westarn Boundary of Upland Ownership or WBUO)?	
\square YES – go to SC 6.1 \square NO – not an interdunal wetland for rating	Cat II
If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: Long Beach Popinsula, Londo weet of SP 103	Cat. II
 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 	
SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? \square YES = Category II \square NO – go to SC 6.2 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	Cat. III
acre? ☐ YES = Category III	
Category of wetland based on Special Characteristics	
Choose the "highest" rating if wetland falls into several categorie, and record on p. 1. If you answered NO for all types enter "Not Applicable" on p.1.	NA

Wetland name or number: $\boldsymbol{Wetland\ DD}$

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

•		1 2		
Name of wetland: Renton Maple Valley	y SE – Wetland RO	<u>W</u> Dat	te of Site visit:	1/12/2017
Rated by: Nell Lund, Anna Hoenig	Trained by Ecology?	Yes⊠ No□ Dat	te of Training:	10/2008, 10/2015
SEC: <u>19</u> TWNSHP: <u>23N</u> RNGE: <u>16</u>	Is S/T/R in Appendix	D? Yes□ No ⊠		
SU	MMARY OF	RATING		
Category based on FUNCTION I □ II ⋈ III □ IV Category I = Score ≥70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30 Category based on SPECIAL	Sco	ore for Water Quality Score for Hydrologic Score for Habitat TOTAL score for	Functions Functions functions	16 22 15 53
I □ II □ Does not A Final Category (c	pply ⊠			II
Check the appropriate	type and class of we	tland being rated.		_
Wetland	d Туре	Wetland (Class	
Estuarine		Depressional		_
Natural Heritage We		Riverine		_
Bog Mature Forest		Lake-fringe		_
Old Growth Forest		Slope Flats		_
Coastal Lagoon		Freshwater Tidal		_
Interdunal		FICSHWAREI HUAI	Ш	-
None of the above		Check if unit has mu HGM classes presen	1 Y	1

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. Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X*
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? 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. Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		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.

Are the water levels in the wetland unit usually controlled by tides (i.e. except during floods)? \square NO – go to 2 \square 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.).
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 \square NO – go to 3 \square YES – The wetland class is Flats
If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands.
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)
Does the entire wetland unit meet all of the following criteria? ☐ The wetland is on a slope (<i>slope can be very gradual</i>), ☐ 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

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.
	\square NO - go to 6 \square 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. \square NO – go to 7 \square 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. \square NO – go to 8 \square 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

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.

HGM classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	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.

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?	(see p. 52)
R	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a	
	flooding event:	
	$\Box \text{ Depressions cover} > 3/4 \text{ area of wetland} \dots \text{points} = 8$	2
	\Box Depressions cover > 1/2 area of wetlandpoints = 4	2
	\boxtimes Depressions present but cover < 1/2 area of wetlandpoints = 2	
	\square No depressions presentpoints = 0	
R	R 1.2 Characteristics of the vegetation in the wetland (areas with > 90% cover at person height):	
	\Box Forest or shrub > 2/3 the area of the wetlandpoints = 8	
	\Box Forest or shrub > 1/3 area of the wetland	_
	\boxtimes Ungrazed, emergent plants > 2/3 area of wetlandpoints = 6	6
	\Box Ungrazed emergent plants > 1/3 area of wetlandpoints = 3	
	\Box Forest, shrub, and ungrazed emergent < 1/3 area of wetlandpoints = 0	
R	Total for R 1 Add the points in the boxes above	8
R	R 2. Does the wetland have the opportunity to improve water quality? (see p. 53) 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? Note which of the following conditions provide the sources of pollutants. □ Grazing in the wetland or within 150 ft ☑ Untreated stormwater discharges to wetland □ Tilled fields or orchards within 150 ft of wetland □ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging □ Residential, urban areas, golf courses are within 150 ft of wetland □ 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 □ Other	multiplier
R	TOTAL - Water Quality Functions Multiply the score from R 1 by R 2	16
	Add score to table on p. 1	10

Comments

R	Riverine and Freshwater Tidal Fringe Wetlands	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream e	
	R 3. Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p. 54)
R	R 3.1 Characteristics of the overbank storage the wetland provides: 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). ☐ If the ratio is more than 20	4
R	R 3.2 Characteristics of vegetation that slow down water velocities during floods: 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) □ Forest or shrub for >1/3 area OR Emergent plants > 2/3 area	7
R	Total for R 3 Add the points in the boxes above	11
R	R 4. Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? (see p. 57) 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. Note which of the following conditions apply. \[\textstyle{\textstyle{1}}\] There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding.	(see p. 57)
	☐ There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding	multiplier
	□ Other	<u>2</u>
	(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) YES multiplier is 2 NO multiplier is 1	_
R	TOTAL - Hydrologic Functions Multiply the score from R 3 by R 4 Add score to table on p. 1	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 Vegetation structure (see p. 72)	nat for many species.	
Check the types of vegetation classes present (as defined more than 10% of the area of the wetland if unit smal ☐ Aquatic bed ☐ Emergent plants ☐ Scrub/shrub (areas where shrubs have >30% cover) ☐ Forested (areas where trees have >30% cover) ☐ Forested areas have 3 out of 5 strata (canopy, subcthat each cover 20% within the forested polygon	ller than 2.5 acres.	0
Add the number of vegetation types that qualify. If you h	ave: 4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0	
H 1.2. Hydroperiods (see p. 73)		
Check the types of water regimes (hydroperiods) present cover more than 10% of the wetland or ¼ acre to count. □ Permanently flooded or inundated □ Seasonally flooded or inundated □ Occasionally flooded or inundated □ Saturated only □ Permanently flowing stream or river in, or adjacent □ Seasonally flowing stream in, or adjacent to, the well acceptable to the companion of the seasonally flowing stream in t	(see text for descriptions of hydroperiods) 4 or more types present	1
H 1.3. Richness of Plant Species (see p. 75)		
Count the number of plant species in the wetland that of species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, put		
		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	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?	
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." □ 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 □ 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4 □ 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 3 □ 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference. Points = 3	3
If buffer does not meet any of the criteria above □ No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK	
H 2.2 Corridors and Connections (see p. 81) 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? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). □ YES = 4 points (go to H 2.3) □ NO = go to H 2.2.2 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? □ YES = 2 points (go to H 2.3) □ NO = H 2.2.3 H 2.2.3 Is the wetland: □ within 5 mi (8km) of a brackish or salt water estuary OR □ within 3 mi of a large field or pasture (>40 acres) OR □ within 1 mi of a lake greater than 20 acres? □ YES = 1 point □ NO = 0 points	2

	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)	
Wh	ich 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 (<i>full description in WDFW PHS report p. 152</i>)	
	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 that 100%; crown cover may be less that 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.)	
\boxtimes	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 (<i>full descriptions in WDFW PHS report p. 161</i>)	4
\boxtimes	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.	4
	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	
	ote: All vegetated wetland are by definition a priority habitat but are not included in this list. Nearby etlands are addressed in question H2.4.	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84) □ 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	3
There is at least 1 wetland within ½ mile. points = 2 ☐ There are no wetlands within ½ mile. points = 0	
H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	12
TOTAL for H1 from page 14	3
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	15

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
criteria are met. SC 1.0 Estuarine wetlands (see p. 86)	
Does the wetland unit meet the following criteria for Estuarine wetlands?	
☐ The dominant water regime is tidal,	
□ Vegetated, and	
☐ With a salinity greater than 0.5 ppt. ☐ YES = Go to SC 1.1	
⊠ NO	
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?	Cat. I
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? □ YES = Category I □ NO = Category II	Cat. I
☐ 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 Spartina 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 a f Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not,	Cat. II
however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed wetland. The wetland has at least 2 or the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87)	
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.	
SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR)	Cat. I
 □ S/T/R information from Appendix D – OR – ⋈ Accessed from WNHP/DNR web site □ YES – contact WNHP/DNR (see p. 79) and go to SC 2.2 ⋈ NO 	
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? \[\subseteq \text{YES} = \text{Category I} \]	
⊠ NO = Not a Heritage Wetland	
SC 3.0 Bogs (see p. 87)	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? 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.	
1. 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.)	
\square Yes – go to Q.3	
⊠ NO – go to Q.2	
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?	
\square Yes – go to Q.3	
\boxtimes NO – is not a bog for purpose of rating	
3. Does the wetland have more than 70% cover of mosses at ground level, AND other plants, if	Cat. I
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)?	
\square Yes – Is a bog for purpose of rating	
\square NO – go to Q.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that	
criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
4. 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)?	
\square YES = Category I	
\square NO – is not a bog for purpose of rating	

SC 4.0 Forested Wetlands (see p. 90)	
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>	
☐ 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.	
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.	Cat. I
☐ 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 that that found in old-growth.	
\square YES = Category 1 \boxtimes NO – not a forested wetland with special characteristics	
SC 5 0 Westley Ja in Coastel I account (see p. 01)	
SC 5.0 Wetlands in Coastal Lagoons (see p. 91) Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.	
☐ The lagoon in which the wetland is located contains surgace water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	Cat. I
☐ YES – Go to SC 5.1 ☐ NO – not a wetland in a coastal lagoon	
SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).	Cat. II
☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland.	
☐ The wetland is larger than 1/10 acre (4350 square feet)	
\square YES = Category I \square NO = Category II	
CC (A V. Angles of Western In (co. or 02)	
SC 6.0 Interdunal Wetlands (see p. 93) Is the wetland unit west of the 1889 line (also called the Westarn Boundary of Upland Ownership or WBUO)?	
☐YES – go to SC 6.1 ☐ NO – not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas:	Cat. II
 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 	
SC 6.1 Is the wetland 1 acre or larger, or is it in a mosaic of wetlands that is 1 acre or larger? \[\sum \text{YES} = \text{Category II} \sum \text{NO} - \text{go to SC 6.2} \] 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	Cat. III
acre?	
☐ YES = Category III	
Category of wetland based on Special Characteristics Choose the "highest" rating if wetland falls into several categorie, and record on p. 1. If you answered NO for all types enter "Not Applicable" on p. 1.	NA

APPENDIX C Wetland Data Forms



Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 1

					<u> </u>			
Project Site:	Lakeside - 18825	Renton Map	le Vallev S	E	Sampling Date:	1/10/2017		
Applicant/Owner:	Lakeside Industr				Sampling Point:	DP- 1		
Investigator:	Nell Lund, Anna				City/County:	Renton		
Sect., Township, Range:	S 19 T	23N R	06E		State:	WA		
Landform (hillslope, terrace,				Slope (%): <5		ve, convex, none):	convex	
	cio). Be iiii			. , ,	,	ve, convex, none).		
Subregion (LRR): A				Lat:	Long:		Datum:	
Soil Map Unit Name: Urba	n land				NWI classification:	none		
Are climatic/hydrologic cond	itions on the site typica	al for this time of	fyear?	⊠ Yes □ No	(If no, explain in re	marks.)		
Are "Normal Circumstances"	present on the site?			☐ Yes ☐ No				
Are Vegetation□, Soil □, or	•	antly disturbed?						
Are Vegetation□, Soil □, or	, ,, ,	•			(If needed, explain	any answers in Re	emarks.)	
	,	, p			I			
SUMMARY OF FINDING	S - Attach site ma	ap showing s	ampling po	oint locations, trans	sects, important f	eatures, etc.		
Hydrophytic Vegetation Pres	ont?	Yes 🗵	No \square					
, , , ,	CHE	_				_	_	
Hydric Soils Present?		Yes	No 🗵	Is the Sampling Poi	nt within a Wetland	? Yes _	No	\boxtimes
Wetland Hydrology Present?	•	Yes	No 🗵					
Remarks: Behind e	cology block wall	on berm						
VEGETATION – Use sci	entific names of p	lants.						
Tree Stratum (Plot size: 5m	diam.)	Absolute 9			Dominance Te	st Worksheet		
		Cover	Specie		ļ			
1. Salix sp.		5	Y	es FAC	Number of Domin that are OBL, FAC		5	
2.								(A)
3.					Total Number of D		5	
4.					Species Across A			(B)
		5	= Total (Cover	Percent of Domina		100	
					that are OBL, FAC	CW, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plo	ot size: 3m diam.)							_ ` ′
1. Alnus rubra (sapl	ina)	5	Y	es FAC	Prevalence Inc	lex Worksheet		
2. Rubus armeniacu		20		es FAC		Cover of	Multiply	<u>v bv</u>
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 =	
Herb Stratum (Plot size: 1m	diam.)				Column totals	(A)	(B)	
1. Phalaris arundina	,	80	Y	es FACW		()		
2. Ranunculus repe		60		es FACW	Prevalence I	ndex = B / A =		
3.	10		-	co i Aon	1 TOVAICHOC I	IIIGCX B770		
4.					Hydrophytic V	egetation Indica	ators	
5.						test is > 50%	11013	
6.						test is ≤ 3.0 *		
							aravida auppartin	~
7.					⊣'. *	cal Adaptations * (parks or on a separa		y
8.							,	
9.						on-Vascular Plants		
10.					☐ Problemation	c Hydrophytic Vege	tation * (explain)	
11.								
		1440	= Total (Cover		Iric soil and wetland		be
		<u> </u>			present, unless di	sturbed or problem	atic	
Woody Vine Stratum (Plot s	size:)							
1.								
2.					Hydrophytic V	egetation Ye	es 🕅 No	,
			= Total (Cover	Presen	it?	22 🔽	, П
% Bare Ground in Herb Stra	tum:							
Remarks:					•			

SOIL							Sampling Point – DI	P-1
Profile Descri	ption: (Describe to the	depth need	ed to document the indicato	r or confirn	n the absence o	f indicators	;,)	
Depth	Matrix			edox Featur			<u>-,</u> I	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 2/2	100	, , , , , , ,		71.		Sandy loam	Some OM
8-12	10YR 2/2	100					Gravelly sandy loam	cobbles
							, ,	
¹Type: C=Con	centration, D=Depletion,	RM=Reduce	ed Matrix, CS=Covered or Coa	ated Sand G	rains ² Loc: PL	=Pore Linin	g, M=Matrix	
-			ınless otherwise noted.)		_		lematic Hydric Soils ³	
☐ Histosol (A	•		Sandy Redox (S5)			Muck (A10		
☐ Histic Epip			Stripped Matrix (S6)			l Parent Mat	` '	
Black Histi	` ,		oamy Mucky Mineral (F1) (ex	cept MLRA	-	er (explain ir	n remarks)	
	Sulfide (A4)		oamy Gleyed Matrix (F2)					
	Below Dark Surface (A11	•	Depleted Matrix (F3)		2			
☐ Thick Dark	Surface (A12)	☐ F	Redox Dark Surface (F6)				phytic vegetation and wetland	d hydrology must
☐ Sandy Mu	cky Mineral (S1)		Depleted Dark Surface (F7)		be prese	ent, uniess a	isturbed or problematic	
☐ Sandy Gle	eyed Matrix (S4)		Redox Depressions (F8)					
Restrictive Lay	ver (if present):						_	
Type:					Hydric soil	present?	Yes	No 🔀
Depth (inches)):							
Primary Indic Surface w High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S	ology Indicators: nators (minimum of one reparter (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4)	S	ck all that apply): Eparsely Vegetated Concave Strater-Stained Leaves (exception of the context (B11) Equatic Invertebrates (B13) Elydrogen Sulfide Odor (C1) Exidized Rhizospheres along Leavence of Reduced Iron (C4) Execut Iron Reduction in Tilled Stunted or Stressed Plants (D1) Ether (explain in remarks)	wing Roots Soils (C6)	, 4A & 4B) (B9)	□ Watt □ Drai □ Dry- □ Satu □ Geo □ Shal □ FAC □ Rais	Indicators (2 or more require er-Stained Leaves (B9) (MLF nage Patterns (B10) Season Water Table (C2) Irration Visible on Aerial Imag morphic Position (D2) Illow Aquitard (D3) E-Neutral Test (D5) Ited Ant Mounds (D6) (LRR Ast-Heave Hummocks	RÁ 1, 2, 4A & 4B) ery (C9)
Field Observa	ations							
Surface Water		No 🛭	□ Depth (in):					
Water Table P		No 2			Wetlend Hede	Nogy Decs-	nt2 Voc 🗆	No 🔀
Saturation Pre (includes capil	sent? Yes	No 2	_ ' ' '.		Wetland Hydro	ology Prese	nt? Yes	No 🔀
		e, monitoring	well, aerial photos, previous	inspections)	, if available:			
Remarks:								



Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- 2

Desired Otto	- !- - 4000F F		0	_	0 D-4	4/40/0047			
Project Site:	Lakeside - 18825 R				Sampling Date:	1/10/2017			
Applicant/Owner:	Lakeside Industrie		Karen De	aı	Sampling Point:	DP- 2			
Investigator:	Nell Lund, Anna Ho				City/County:	Renton			
Sect., Township, Range:		3N R (06E		State:	WA			
Landform (hillslope, terrace,	etc): ditch			Slope (%): 5	Local relief (concav	e, convex, none):	concave		
Subregion (LRR): A				Lat:	Long:		Datum:		
				Lut.			Datam.		
Soil Map Unit Name: Urba	n land				NWI classification:	none			
Are climatic/hydrologic condi	itions on the site typical f	or this time of y	/ear?	🛚 Yes 🗌 No	(If no, explain in ren	narks.)			
Are "Normal Circumstances"	present on the site?			☐ Yes ☐ No					
Are Vegetation□, Soil □, or	· · Hvdrology □ significant	lv disturbed?							
Are Vegetation□, Soil □, or					(If needed, explain	any answers in Rer	marks.)		
7 o regetation = , con = , co	, a. o. o. gy = a. ta. ta. y p				<u> </u>				
SUMMARY OF FINDING	S - Attach site map	showing sa	mpling po	int locations, tran	sects, important fe	atures, etc.			
						•			
Hydrophytic Vegetation Pres	ent?	∕es ⊠	No 🗆						
Hydric Soils Present?	Y	∕es ⊠ ∣	No \square	Is the Sampling Po	int within a Wetland?	Yes 🔀] No		
Wetland Hydrology Present?	>	∕es ⊠ ∣	No 🗆	io ino camping i c	int within a wonding.	100]	ш	
Wedana Hydrology Frederic.	•								
Remarks: Wetland	A. Adiacout to DD 4								
Nemarks. Wetland	A; Adjacent to DP-1								
VEGETATION – Use sci	entific names of pla	nts.							
Tree Stratum (Plot size: 5m	diam.)	Absolute %	Domina	ant Indicator	Dominance Tes	t Worksheet			
		Cover	Species	s? Status					
1. Salix sp.		5	Y	es FAC	Number of Domina		4		
2.					that are OBL, FAC	W, or FAC:	4	(A)	
3.					Total Number of D	ominant		_ ` ′	
4.					Species Across All Strata: 4				
		5	= Total (S				_ (D)	
				,over	Percent of Domina	nt Snaciae			
			- TOTAL C	over	Percent of Domina		100		
			Total C	cover	Percent of Domina that are OBL, FAC		100	(A/B)	
Sapling/Shrub Stratum (Plo	ot size: 3m diam.)		Total C	∠over			100	_ (A/B)	
Sapling/Shrub Stratum (Plo	· · · · · · · · · · · · · · · · · · ·	25		es FAC		W, or FAC:	100	(A/B)	
	ıs		 		that are OBL, FAC Prevalence Inde	W, or FAC:	100	`	
1 Rubus armeniacu	ıs	25	 	es FAC	that are OBL, FAC Prevalence Inde	w, or FAC:		`	
Rubus armeniacu Alnus rubra (sapla 3.	ıs	25	 	es FAC	that are OBL, FAC Prevalence Inde Total % OBL species	w, or FAC:	Multiply	`	
Rubus armeniacu Alnus rubra (sapli 3. 4.	ıs	25	 	es FAC	Prevalence Index Total % OBL species FACW species	w, or FAC:	Multiply x 1 = x 2 =	`	
Rubus armeniacu Alnus rubra (sapla 3.	ıs	25 5	Y	es FAC lo FAC	Prevalence Inde Total % OBL species FACW species FAC species	w, or FAC:	Multiply x 1 = x 2 = x 3 =	`	
Rubus armeniacu Alnus rubra (sapli 3. 4.	ıs	25	 	es FAC lo FAC	that are OBL, FAC Prevalence Inde	w, or FAC:	Multiply x 1 = x 2 = x 3 = x 4 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5.	us ling)	25 5	Y	es FAC lo FAC	that are OBL, FAC Prevalence Inde Total % OBL species FACW species FAC species FACU species UPL species	ex Worksheet Cover of	Multiply x 1 = x 2 = x 3 = x 4 = x 5 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m)	us ling)	25 5	= Total (es FAC lo FAC	that are OBL, FAC Prevalence Inde	w, or FAC:	Multiply x 1 = x 2 = x 3 = x 4 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina	n diam.)	25 5 30	= Total (es FAC lo FAC Cover	that are OBL, FAC Prevalence Inde	ex Worksheet Cover of (A)	Multiply x 1 = x 2 = x 3 = x 4 = x 5 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei	n diam.) acea ns	25 5	Y N	es FAC Cover Es FACW Lo FAC	that are OBL, FAC Prevalence Inde	ex Worksheet Cover of	Multiply x 1 = x 2 = x 3 = x 4 = x 5 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina	n diam.) acea ns	25 5 30	Y N	es FAC lo FAC Cover	that are OBL, FAC Prevalence Inde	ex Worksheet Cover of (A)	Multiply x 1 = x 2 = x 3 = x 4 = x 5 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei	n diam.) acea ns	25 5 30 60 20	= Total (es FAC Cover Es FACW Lo FAC	that are OBL, FAC Prevalence Inde	ex Worksheet Cover of (A) andex = B / A =	Multiply x 1 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officin	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde	ex Worksheet Cover of (A) andex = B / A =	Multiply x 1 =	`	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officin 4. Ludwigia palustri 5.	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde Total % OBL species FACW species FAC species UPL species Column totals Prevalence Ir Hydrophytic Ve	ex Worksheet Cover of (A) andex = B / A = getation Indicate	Multiply x 1 =	`	
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1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officin 4. Ludwigia palustri 5. 6. 7.	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde Total % OBL species FACW species FAC species UPL species Column totals Prevalence Ir Hydrophytic Ve Dominance Prevalence Morphologic	W, or FAC: Ex Worksheet Cover of (A) Index = B / A = getation Indicates is > 50% Itest is ≤ 3.0 * al Adaptations * (pi	Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (B)	/ by	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officin 4. Ludwigia palustri 5. 6.	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde	(A) (A) (Betation Indicates is > 50% (Betations * (purks or on a separates)	Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (B)	/ by	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officin 4. Ludwigia palustri 5. 6. 7.	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde	W, or FAC: Ex Worksheet Cover of (A) Index = B / A = getation Indicates is > 50% Itest is ≤ 3.0 * al Adaptations * (pi	Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (B)	/ by	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officir 4. Ludwigia palustri 5. 6. 7.	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde Total % OBL species FACW species FACU species UPL species Column totals Prevalence Ir Hydrophytic Ve	(A) (A) (Betation Indicates is > 50% (Betations * (purks or on a separates)	Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (B)	/ by	
1. Rubus armeniacu 2. Alnus rubra (sapli 3. 4. 5. Herb Stratum (Plot size: 1m 1. Phalaris arundina 2. Ranunculus repei 3. Nasturtium officir 4. Ludwigia palustri 5. 6. 7. 8. 9.	n diam.) acea ns	25 5 30 60 20 40	= Total (es FAC Cover es FACW Io FAC es OBL	that are OBL, FAC Prevalence Inde Total % OBL species FACW species FACU species UPL species Column totals Prevalence In Hydrophytic Ve Dominance Morphologic data in rema	ex Worksheet Cover of (A) dex = B / A = getation Indicates is > 50% dest is < 3.0 * al Adaptations * (properties of the content of the con	Multiply x 1 = x 2 = x 3 = x 4 = x 5 = (B)	/ by	
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SOIL Sampling Point - DP-2 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Depth (inches) Color (moist) Color (moist) Type¹ Texture Remarks Mulch 0-15 10YR 2/1 100 Loamy sand 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.) Indicators for Problematic Hydric Soils³ ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2cm Muck (A10) ☐ Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) ☐ Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) \boxtimes Other (explain in remarks) Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) Depleted Matrix (F3) ³ Indicators of hydrophytic vegetation and wetland hydrology must ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) be present, unless disturbed or problematic ☐ Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (if present): Type: X Hydric soil present? Yes No Depth (inches): Remarks: OM masking redox

HYDROLOGY

Wetland Hydrology Indicators:								
Primary Indicators (minimum of one req	uired: cl	heck all that apply):			Seco	ndary Indicators (2 or more required):		
☐ Surface water (A1)		Sparsely Vegetated C	oncave Surface (B8	3)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)		
		Water-Stained Leaves	(except MLRA 1,	2, 4A & 4B) (B9)		Drainage Patterns (B10)		
		Salt Crust (B11)				Dry-Season Water Table (C2)		
☐ Water Marks (B1)		Aquatic Invertebrates	(B13)			Saturation Visible on Aerial Imagery (C9)		
☐ Sediment Deposits (B2)	\boxtimes	Hydrogen Sulfide Odd	or (C1)			Geomorphic Position (D2)		
☐ Drift Deposits (B3)		Oxidized Rhizosphere	s along Living Root	s (C3)		Shallow Aquitard (D3)		
☐ Algal Mat or Crust (B4)		Presence of Reduced	Iron (C4)			FAC-Neutral Test (D5)		
☐ Iron Deposits (B5)		Recent Iron Reduction	n in Tilled Soils (C6))		Raised Ant Mounds (D6) (LRR A)		
☐ Surface Soil Cracks (B6)		Stunted or Stressed P	Plants (D1) (LRR A)			Frost-Heave Hummocks		
☐ Inundation Visible on Aerial Imagery (B7)		Other (explain in rema	arks)					
Field Observations								
Surface Water Present? Yes □	No							
Water Table Present? Yes ⊠	No	☐ Depth (in):	4" BGS	Wetland Hydro	ology	Present? Yes X No		
Saturation Present? Yes 🖂 (includes capillary fringe)	No	☐ Depth (in):	2" BGS					
Describe Recorded Data (stream gauge,	monitor	ing well, aerial photos, p	previous inspections	s), if available:				
Remarks:								



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

DP- 3

D : 10"				_		: 5 :	4/40/004=				
Project Site:	Lakeside - 18825 Re					npling Date:	1/10/2017				
Applicant/Owner:	Lakeside Industries	· · · · · · · · · · · · · · · · · · ·	Karen De	aı		npling Point:	DP- 3				
Investigator:	Nell Lund, Anna Ho		·CE			/County:	Renton				
Sect., Township, Range:	S 19 T 23	N R 0	6E		Stat		WA				
Landform (hillslope, terrace,	etc): nilisiope			Slope (%): >10	Loca	,	ve, convex, none):				
Subregion (LRR): A				Lat:		Long:		Datum:			
Soil Map Unit Name: Urba	ın land				NWI	classification:	none				
Are climatic/hydrologic cond	litions on the site typical fo	or this time of ye	ear?	☑ Yes □ N	lo (If no	(If no, explain in remarks.)					
Are "Normal Circumstances"	" present on the site?			Yes 🗆 1	10						
Are Vegetation□, Soil □, or	r Hydrology significantly	y disturbed?									
Are Vegetation \square , Soil \square , or	r Hydrology 🗌 naturally pr	roblematic			(If ne	eeded, explain	any answers in R	emarks.)			
SUMMARY OF FINDING	SS – Attach site map	showing sar	npling po	int locations, t	ransects,	important f	eatures, etc.				
Hydrophytic Vegetation Proc	oont? V	es 🗵 N	4o 🗆								
Hydrophytic Vegetation Pres			_				_	_	,	_	
Hydric Soils Present?		_	No 🗆	Is the Sampling	Point with	nin a Wetland	? Yes L		No		
Wetland Hydrology Present?	? Y	es 🗵 N	No 🗆								
Remarks: Wetland	В										
VEGETATION – Use sci	ientific names of plar	nts.									
						_					
Tree Stratum (Plot size: 5m	ı diam.)	Absolute % Cover	Domina Specie			minance Te	st Worksheet				
1. Alnus rubra		35		es FA		nber of Domina	ant Species				
2.		- 33		53 IA		are OBL, FAC		4		(A)	
3.					Tota	al Number of D)ominant			(A)	
4.						cies Across Al		4		(B)	
		35	= Total (Cover	Per	cent of Domina	ant Species			(D)	
						that are OBL_FACW_or_FAC: 100					
								100		(A/R)	
Sapling/Shrub Stratum (Pk	ot size: 3m diam.)							100		(A/B)	
Sapling/Shrub Stratum (Plo		25		es FA	that	are OBL, FAC	CW, or FAC:	100		(A/B)	
1 Rubus armeniacu		25	Y	es FA	that	are OBL, FAC	ex Worksheet				
1. Rubus armeniacu		25	Y	es FA	that	are OBL, FAC evalence Ind Total %	CW, or FAC:		fultiply by		
1. Rubus armeniacu 2.		25	Y	es FA	that	are OBL, FAC	ex Worksheet	<u>N</u>			
1. Rubus armeniacu		25		es FA	C Pre	evalence Ind Total % L species	ex Worksheet	x 1 =			
1. Rubus armeniacu 2. 3. 4.		25	Y = Total (C Pre OBI	evalence Ind Total % L species CW species	ex Worksheet	x 1 = x 2 =			
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1. Rubus armeniacu 2. 3. 4. 5. Herb Stratum (Plot size: 1m 1. Ranunculus repei 2. Equisetum telmat 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10. 11. Woody Vine Stratum (Plot size: 1m 1. Ranunculus repei 2. Equisetum telmat 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8.	n diam.) ns teia acea	25 10 25 2 5	= Total (es FAC es FAC lo FAI lo FCI	OBI FACE UPI Col W W CO W S S S S S S S S S S S S S S S S S S	evalence Ind Total % L species CW species CU species Species Uspecies Uspecies Uspecies Uspecies Unit of the species Unit of t	ex Worksheet Cover of (A) (A) (A) (A) (A) (A) (A) (A	x 1 = x 2 = x 3 = x 4 = x 5 = (B) ators provide sup ate sheet) * etation * (ex d hydrology natic	porting plain) must be		
1. Rubus armeniacu 2. 3. 4. 5. Herb Stratum (Plot size: 1m 1. Ranunculus repei 2. Equisetum telmati 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10. 11. Woody Vine Stratum (Plot size: 1m 1. Ranunculus repei 2. Equisetum telmati 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10.	n diam.) ns teia acea	25 10 25 2 5	= Total (es FAC es FAC lo FAI lo FCI	OBI FACE UPI Col W W CO W S S S S S S S S S S S S S S S S S S	evalence Ind Total % L species CW species CW species CU species CU species L	ex Worksheet Cover of (A) (A) (A) (A) (A) (A) (A) (A	x 1 = x 2 = x 3 = x 4 = x 5 = (B) ators provide sup ate sheet) * etation * (ex d hydrology natic	porting plain) must be		
1. Rubus armeniacu 2. 3. 4. 5. Herb Stratum (Plot size: 1m 1. Ranunculus repe 2. Equisetum telmat 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10. 11. Woody Vine Stratum (Plot size: 1m 1. Ranunculus repe 2. Equisetum telmat 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10.	n diam.) ns teia acea	25 10 25 2 5	= Total (es FAC es FAC lo FAI lo FCI	OBI FACE UPI Col W W CO W S S S S S S S S S S S S S S S S S S	evalence Ind Total % L species CW species CW species CU species CU species L	ex Worksheet Cover of (A) (A) (A) (A) (A) (A) (A) (A	x 1 = x 2 = x 3 = x 4 = x 5 = (B) ators provide sup ate sheet) * etation * (ex d hydrology natic	porting plain) must be		
1. Rubus armeniacu 2. 3. 4. 5. Herb Stratum (Plot size: 1m 1. Ranunculus repei 2. Equisetum telmati 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10. 11. Woody Vine Stratum (Plot size: 1m 1. Ranunculus repei 2. Equisetum telmati 3. Holcus lanatus 4. Phalaris arundina 5. 6. 7. 8. 9. 10.	n diam.) ns teia acea	25 10 25 2 5	= Total (es FAC es FAC lo FAI lo FCI	OBI FACE UPI Col W W CO W S S S S S S S S S S S S S S S S S S	evalence Ind Total % L species CW species CW species CU species CU species L	ex Worksheet Cover of (A) (A) (A) (A) (A) (A) (A) (A	x 1 = x 2 = x 3 = x 4 = x 5 = (B) ators provide sup ate sheet) * etation * (ex d hydrology natic	porting plain) must be		

SOIL								Sampli	ng Point – DP	-3	
Profile Descri	ption: (Describe to	o the de	pth need	ed to document the inc	dicator or confi	rm the absence o	f indicators	s.)			
Depth	Ma	trix			Redox Feat	ıres					
(inches)	Color (moist)		%	Color (moist)	%	Type ¹	Loc ²	Т	exture	Re	emarks
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 m	nulch		
¹Type: C=Cond	centration, D=Deple	etion, RM	/I=Reduce	d Matrix, CS=Covered o	or Coated Sand	Grains ² Loc: PL	=Pore Linin	g, M=Matrix			
-		ble to al		nless otherwise noted	l.)			lematic Hydi	ric Soils³		
☐ Histosol (A	,			andy Redox (S5) stripped Matrix (S6)			n Muck (A10) I Parent Mat	•			
☐ Histic Epip				. ,	1) (avaant MI D			,			
☐ Black Histi				oamy Mucky Mineral (F		A 1) ⊠ Oth	er (explain ir	i ieiliaiks)			
, ,	Sulfide (A4)	(111)		oamy Gleyed Matrix (F2	<u>~)</u>						
•	Below Dark Surface	(A11)		Pepleted Matrix (F3)		3 Indicate	ara of budron	abutia va aata	tion and wetland	h, drole	au munat
	Surface (A12)			Redox Dark Surface (F6)				isturbed or pi		riyaroic	gy must
I	cky Mineral (S1)			epleted Dark Surface (F	-7)	be prese	int, unicoo u	istarbed or pr	obicinatio		
☐ Sandy Gle	yed Matrix (S4)			dedox Depressions (F8)							
Restrictive Lay	er (if present):										
Type:						Hydric soil	present?	Yes	\boxtimes	No	
Depth (inches)	:										
Primary Indic ☐ Surface w ☐ High Wate ☐ Saturation ☐ Water Ma	ology Indicators: ators (minimum of o rater (A1) er Table (A2)	one requ	□ S □ W □ S □ A	k all that apply): parsely Vegetated Conc /ater-Stained Leaves (e. alt Crust (B11) quatic Invertebrates (B1	xcept MLRA 1,	•	☐ Wate	er-Stained Le nage Pattern Season Wate	er Table (C2) e on Aerial Image	Å 1, 2,	
☐ Drift Depo	sits (B3)			xidized Rhizospheres a		s (C3)	_	Ilow Aquitard			
	or Crust (B4)			resence of Reduced Iron		• ,		-Neutral Tes			
☐ Iron Depo				ecent Iron Reduction in	` ,				nds (D6) (LRR A)		
•	oil Cracks (B6)		□s	tunted or Stressed Plan	ts (D1) (LRR A)			st-Heave Hun	. , , ,		
	n Visible on Aerial I	magery		ther (explain in remarks	. , . ,						
Field Observa											
Surface Water	Present? Yes		No 🗵	Depth (in):							
Water Table P	resent? Yes		No 🗆	Depth (in):	4" BGS	Wetland Hydro	ology Prese	nt? Ye	es 🔀	No	
Saturation Pre (includes capill		S	No 🗆	Depth (in):	surface						
Describe Reco	rded Data (stream	gauge, r	monitoring	well, aerial photos, prev	vious inspections	s), if available:					
Remarks:											



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DP- 4

						<u> </u>			
Project Site:	Lakeside - 18825	5 Renton Ma	ıple Valle	ev SE	:	Sampling Date:	1/10/2017		
Applicant/Owner:	Lakeside Industr					Sampling Point:	DP- 4		
Investigator:	Nell Lund, Anna					City/County:	Renton		
Sect., Township, Range:		23N R	06E			State:	WA		
Landform (hillslope, terrace,					Slope (%): <5	Local relief (concar		none	
	cto). terruoc			-+	,	,	ve, convex, none).		
Subregion (LRR): A					Lat:	Long:		Datum:	
Soil Map Unit Name: Urba	n land					NWI classification:	none		
Are climatic/hydrologic cond	itions on the site typica	al for this time	of year?	\boxtimes] Yes □ No	(If no, explain in re	marks.)		
Are "Normal Circumstances"	present on the site?] Yes □ No				
Are Vegetation□, Soil □, or	•	antly disturbed	?						
Are Vegetation□, Soil □, or		•				(If needed, explain	any answers in R	emarks.)	
	.,) 							
SUMMARY OF FINDING	S - Attach site ma	ap showing	samplin	g poi	int locations, trans	ects, important f	eatures, etc.		
Hydrophytic Vegetation Pres	ont?	Yes 🗵	No [
, , , ,	ent						_	_	
Hydric Soils Present?		Yes \square		\boxtimes	Is the Sampling Poir	nt within a Wetland	? Yes		No 🔀
Wetland Hydrology Present?	!	Yes 🗌	No [\boxtimes			_	<u> </u>	_
Remarks:									
VEGETATION – Use sci	entific names of p	olants.							
Tree Stratum (Plot size: 5m	diam.)	Absolute	∍% Do	ominar	nt Indicator	Dominance Tes	st Worksheet		
		Cover	Sp	ecies'					
1. Alnus rubra		30		Ye	es FAC	Number of Domina		3	
2.						that are OBL, FAC	JW, or FAC:	<u> </u>	(A)
3.						Total Number of D		3	
4.			•			Species Across Al	Il Strata:	3	(B)
	,	30	= T	Total Co	over	Percent of Domina		400	
						that are OBL, FAC	CW, or FAC:	100	(A/E
Sapling/Shrub Stratum (Plo	ot size: 3m diam.)								
1. Rubus armeniacu	ıs	10		Ye	s FAC	Prevalence Ind	ex Worksheet		
2.	<u>- </u>						Cover of	Mu	Itiply by
3.						OBL species		x 1 =	
4.						FACW species		x 2 =	
5.						FAC species		x 3 =	
		10	= T	Total Co	over	FACU species		x 4 =	
						UPL species		x 5 =	
Herb Stratum (Plot size: 1m	ı diam)					Column totals	(A)	(B)	
1. Phalaris arundina	· · · · · · · · · · · · · · · · · · ·	100		Ye	es FACW	- Column totalo	()	(5)	
2 Ranunculus repe		100		No		Prevalence I	ndex = B / A =		
3.	13				<u> </u>	- Trevalence i	ndex - b / A -		
4.						Hydrophytic Ve	egetation Indic	ators	
5.							test is > 50%	ators	
							test is ≤ 3.0 *		
6.								(
7.						⊣	cal Adaptations * (ining
8.						4 [—]	arks or on a separ	•	
9.						☐ Wetland No	on-Vascular Plants	s *	
10.						☐ Problemation	c Hydrophytic Veg	etation * (expla	ain)
11.									
		110	= T	Total Co	over	* Indicators of hyd	iric soil and wetlan	nd hydrology m	nust be
						present, unless di	sturbed or problen	natic	
Woody Vine Stratum (Plot s	size:)								
1.									
2.						Hydrophytic V	egetation	. 🔽	
			= T	Total Co	over	Presen		′es ⊠	No
% Bare Ground in Herb Stra	hum:								
% Bare Ground in Herb Stra	tum:								
% Bare Ground in Herb Stra Remarks:	tum:								

SOIL Sampling Point - DP-4 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Redox Features Color (moist) Color (moist) Texture Remarks (inches) Type¹ 7.5YR 2.5/2 0-10 100 **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.) Indicators for Problematic Hydric Soils3 ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2cm Muck (A10) ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2) ☐ Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Other (explain in remarks) Loamy Gleyed Matrix (F2) ☐ Hydrogen Sulfide (A4) ☐ Depleted Below Dark Surface (A11) Depleted Matrix (F3) П ³ Indicators of hydrophytic vegetation and wetland hydrology must ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) be present, unless disturbed or problematic ☐ Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8) Restrictive Layer (if present): Type: X Hydric soil present? Yes No Depth (inches): Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply): Secondary Indicators (2 or more required): Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B) ☐ Surface water (A1) Sparsely Vegetated Concave Surface (B8) П Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) ☐ High Water Table (A2) Drainage Patterns (B10) Saturation (A3) Salt Crust (B11) Dry-Season Water Table (C2) П Water Marks (B1) Aquatic Invertebrates (B13) Saturation Visible on Aerial Imagery (C9) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Shallow Aguitard (D3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) FAC-Neutral Test (D5) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Raised Ant Mounds (D6) (LRR A) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Frost-Heave Hummocks Inundation Visible on Aerial Imagery Other (explain in remarks) (B7)Field Observations Surface Water Present? Depth (in): Yes \square No 🏻 Water Table Present? Yes \boxtimes Depth (in): Nο X Wetland Hydrology Present? Saturation Present? Depth (in):

(includes capillary fringe)

Remarks:

Yes

No ⊠

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



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DP- 5

Drain at Cita	alsocials 4000(F Danton Manla	. Vallan C	_	Committee Date:	4/40/0047			
Project Site:	Lakeside - 18825				Sampling Date: 1/10/2017 Sampling Point: DP- 5				
Applicant/Owner:	Lakeside Indust		Karen De	eal	Sampling Point:				
Investigator:	Nell Lund, Anna				City/County:	Renton			
Sect., Township, Range:	S 19 T	23N R 0)6E		State:	WA			
Landform (hillslope, terrace,	etc): terrace			Slope (%): <5	Local relief (conca	ve, convex, none):	none		
Cubrasian (LDD): A				Lat:	Long:		Datum:		
Subregion (LRR): A				Ldl.			Datum.		
Soil Map Unit Name: Urba	n land				NWI classification:	none			
Are climatic/hydrologic cond	itions on the site typic	al for this time of y	ear?	☐ Yes ☐ No	(If no, explain in remarks.)				
Are "Normal Circumstances"		,		☐ Yes ☐ No	, , ,	,			
Are Vegetation□, Soil □, or	•	antly disturbed?	_	000					
	, ,,	•			(If needed, explain	any answers in R	emarks)		
Are Vegetation□, Soil □, or	Hydrology \square natural	y problematic			(ii riocaca, expiaii	any unovoio in it	omano.,		
SUMMARY OF FINDING	S _ Attach site m	an showing sar	mnling ne	nint locations trans	sacts important f	eatures etc			
COMMENT OF THE BITC	O - Attach Site in	ap snowing sai	iipiiiig pe	Jiii locations, tran-	scots, important i	catares, etc.			
Hydrophytic Vegetation Pres	sent?	Yes 🗵 🗈	No 🗆						
		-	_			15	_		
Hydric Soils Present?				Is the Sampling Po	int within a Wetland	? Yes	\times	No	
Wetland Hydrology Present?	?	Yes 🗵 🗈	No 🗌			_			
Remarks: Wetland	C inpit								
	·p								
VEOFTATION III		-11-							
VEGETATION – Use sc	entific names of p	iants.			•				
Tree Stratum (Plot size: 5m	diam.)	Absolute %	Domina	ant Indicator	Dominance Te	st Worksheet			
·	•	Cover	Specie	s? Status					
1. Populus balsamit	era	15	Y	es FAC	Number of Domin	ant Species			
2.					that are OBL, FAC	CW, or FAC:	4		(A)
3.					Total Number of D	Onminant			(71)
							4		
4.					Species Across Air Strata. (B)				
		15	= Total (Cover	Percent of Dominant Species that are OBL_EACW_or EAC: 100				
					that are OBL, FACW, or FAC: 100 (A/B)				(A/B)
Sapling/Shrub Stratum (Pl	ot size: 3m diam.)								, ,
	<u> </u>	10		es FAC	Prevalence Inc	lov Workshoot			
	18								
2. Rosa sp.		10	<u> </u>	es FAC	_	Cover of		lultiply by	<u>y</u>
3.					OBL species		x 1 =		
4.					FACW species		x 2 =		
5.					FAC species		x 3 =		
		20	= Total (Cover	FACU species		x 4 =		
			_		UPL species		x 5 =		
Herb Stratum (Plot size: 1m	diam \				Column totals	(A)	(B)		
				FAOW	Columnitionals	(A)	[(D)		
1. Phalaris arundina		80		es FACW					
2. Solanum dulcama	ara	10	<u> </u>	lo FAC	Prevalence I	ndex = B / A =			
3.									
4.					Hydrophytic V	egetation Indic	ators		
5.						e test is > 50%			
6.					 □ Prevalence	test is ≤ 3.0 *			
7.					⊣'. °	cal Adaptations * (orting	
8.					☐ data in rem	arks or on a separ	ate sheet)		
9.			-			on-Vascular Plants	; *		
10.					☐ Problemation	c Hydrophytic Veg	etation * (exp	olain)	
						,,	(
11.			- Total (20104					
		90	= Total (Jover		Iric soil and wetlan		must be	
					present, unless al	sturbed or problen	natic		
Woody Vine Stratum (Plot	size:)								
1.									
2.					Hydrophytic V	egetation .	. 🔽		
			= Total (Cover	Presen		′es 🔀	No	Ш
% Bare Ground in Herb Stra	tum:								
Remarks:									

SOIL								Sampling	Point - DP	-5	
Profile Descri	ption: (Describ	e to the d	epth need	ed to document the indi	cator or confi	m the absence o	of indicators	s.)			
Depth		Matrix			Redox Featu	ıres					
(inches)	Color (mo	oist)	%	Color (moist)	%	Type ¹	Loc ²	Text	ure	Rema	arks
0-2	10YR 2/2		100					Sandy Ioan	n		
2-3	10YR 2/1		100					Sandy loan	n	High O	M
3-10	2.5Y 2.5/1		100					Gravelly sa	ndy loam		
¹Type: C=Cond	centration, D=D	epletion, R	M=Reduce	d Matrix, CS=Covered or	Coated Sand (Grains ² Loc: Pl	_=Pore Linin	g, M=Matrix			
☐ Histosol (A	A1)	licable to		nless otherwise noted.) andy Redox (S5) tripped Matrix (S6)		□ 2cm	ors for Probl n Muck (A10 d Parent Mat	•	Soils ³		
☐ Histic Epip				. ,	\(\alpha\)			, ,			
☐ Black Histi				oamy Mucky Mineral (F1)		=	er (explain ir	n remarks)			
⊠ Hydrogen				oamy Gleyed Matrix (F2)							
•	Below Dark Surf	ace (A11)		epleted Matrix (F3)		2					
	Surface (A12)			edox Dark Surface (F6)				ohytic vegetation		hydrology	must
	cky Mineral (S1)			epleted Dark Surface (F7	7)	be prese	ent, uniess a	isturbed or prob	iematic		
☐ Sandy Gle	yed Matrix (S4)			edox Depressions (F8)							
Restrictive Lay	er (if present):										
Type:						Hydric soil	present?	Yes	\times	No	
Depth (inches)	:										
Remarks:	OM masking	redox, F	6 presum	ed.							
HYDROLOGY											
	ology Indicato		quired: chec	k all that apply):			Secondary	Indicators (2 or	more required	d):	
☐ Surface w				parsely Vegetated Conca	ve Surface (B8	3)	☐ Wat	er-Stained Leav	es (B9) (MLR .	Á 1, 2, 4A	& 4B)
	er Table (A2)		□ W	ater-Stained Leaves (exc	cept MLRA 1,	2, 4A & 4B) (B9)	□ Drai	inage Patterns (l	B10)		•
				alt Crust (B11)	,	, , (- ,		Season Water	-		
☐ Water Ma	` '			quatic Invertebrates (B13	3)		•	uration Visible or		rv (C9)	
	Deposits (B2)			ydrogen Sulfide Odor (C1	-			morphic Positio	•	., (,	
☐ Drift Depo			_	xidized Rhizospheres alo	-	s (C3)	_	llow Aquitard (D			
	or Crust (B4)			resence of Reduced Iron		3 (00)		C-Neutral Test (E	•		
_					. ,			,	,		
☐ Iron Depo				ecent Iron Reduction in T	, ,			sed Ant Mounds			
	oil Cracks (B6) n Visible on Aeri	ial Imagan		tunted or Stressed Plants ther (explain in remarks)	(D1) (LRR A)		☐ Fros	st-Heave Humm	OCKS		
☐ Inundation (B7)	I VISIBLE OII ACII	iai iiiiayei y	/ 0	ther (explain in remarks)							
Field Observa	ntions										
Surface Water		Yes □	No 🗵	Depth (in):							
Water Table P					" BGS						
		Yes ⊠	No 🗆	_ '		Wetland Hydro	ology Prese	ent? Yes	\boxtimes	No	
Saturation Pre (includes capill		Yes	No 🗆] Depth (in): s	surface						
Describe Peco	orded Data (stre	am dalide	monitoring	well, aerial photos, previo	oue inenactions	t) if available:					
Describe Neco	ilueu Dala (Sile	am gauge,	monitoring	well, aeriai priotos, previo	ous mapections	o), ii avallabie.					
Remarks:											



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DP- 6

Project Site:	Lakeside - 18825	Renton Mani	e Valley Si	=		Sampling Date:	1/10/2017		
Applicant/Owner:	Lakeside Industr					Sampling Point:	DP- 6		
Investigator:	Nell Lund, Anna		. italeli De	ui .		City/County:	Renton		
•			06E			, ,	WA		
Sect., Township, Range:		23N R	UOE			State:			
Landform (hillslope, terrace,	etc): nilisiope			Slope (%): 5		Local relief (concave	, convex, none):	none	
Subregion (LRR): A				Lat:		Long:		Datum:	
Soil Map Unit Name: Urba	n land		<u> </u>			NWI classification: n	one		
		al for this time of	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7 Vac					
Are climatic/hydrologic cond	= =	al for this time of	-			(If no, explain in rema	arks.)		
Are "Normal Circumstances"	•		L	☐ Yes ☐ N	No				
Are Vegetation□, Soil □, or		•							
Are Vegetation□, Soil □, or	Hydrology naturally	y problematic				(If needed, explain ar	ny answers in Ren	narks.)	
OLIMAN ARY OF FINISHE	O A 11 11 11					-1- !			
SUMMARY OF FINDING	5 – Attach site ma	ap snowing sa	ampling po	int locations, t	ranse	cts, important rea	itures, etc.		
Hydrophytic Vegetation Pres	ent?	Yes 🗵	No \square						
, , , ,	Ont:							•	
Hydric Soils Present?		Yes \square	No 🗵	Is the Sampling	g Point	within a Wetland?	Yes	No	\cdot \times
Wetland Hydrology Present?		Yes	No 🗵						
Remarks:									
VEGETATION - Use sci	entific names of p	lants.							
Tree Stratum (Plot size: 5m	diam)	Absolute %	6 Domina	nt Indicat	tor	Dominance Test	Workshoot		
Tree Stratum (1 lot size. 5m	ulaili.)	Cover	Species			Dominance rest	WOIKSHEEL		
1.		00101	Ороско	otatuo		Number of Dominan	t Species		
2.						that are OBL, FACW		2	(A)
3.						Total Number of Dor	minant		(A)
						Species Across All S		2	(D)
4.			= Total (`avor		•			(B)
			= 10tar C	ovei		Percent of Dominant that are OBL, FACW		100	
						tilat ale ODL, i ACM	7, 01 1 AC.		(A/B)
Sapling/Shrub Stratum (Plo	ot size: 3m diam.)								
1. Rubus armeniacu	s	70	Y	es FA	С	Prevalence Index	k Worksheet		
2.						Total % C	over of	Multip	ly by
3.						OBL species		x 1 =	
4.						FACW species		x 2 =	
5.						FAC species		x 3 =	
		70	= Total C	Cover		FACU species		x 4 =	
					-	UPL species		x 5 =	
Harb Stratum (Blot size: 1m	diam \				-		΄Λ\		
Herb Stratum (Plot size: 1m				540	NA/	Column totals ((A)	(B)	
1. Phalaris arundina	cea	80	T ·	es FAC	, VV		. 5/4		
2.						Prevalence Inc	iex = B / A =		
3.									
4.						Hydrophytic Veg		ors	
5.							est is > 50%		
6.						☐ Prevalence te	st is ≤ 3.0 *		
7.						Morphological	Adaptations * (pr	ovide supportir	ng
8.							ks or on a separat		Ū
						_	Vascular Plants *	,	
9.								-ti * /l-i	`
10.						☐ Problematic F	lydrophytic Vegeta	ation " (explain)
11.									
		80	= Total 0	Cover		* Indicators of hydric			t be
					L	present, unless distu	irbed or problema	tic	
Woody Vine Stratum (Plot s	size:)								
1.									
2.						Hydrophytic Veg	etation		
			= Total 0	Cover		Present?		۱ 🔼 ن	/o
		-							
% Bare Ground in Herb Stra	tum:				- 1				
Remarks:					1				
Nomano.									

SOIL Sampling Point - DP-6 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Redox Features Color (moist) Color (moist) Texture Remarks (inches) Type¹ 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.) Indicators for Problematic Hydric Soils3 ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2cm Muck (A10) ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2) ☐ Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Other (explain in remarks) Loamy Gleyed Matrix (F2) ☐ Hydrogen Sulfide (A4) ☐ Depleted Below Dark Surface (A11) Depleted Matrix (F3) П ³ Indicators of hydrophytic vegetation and wetland hydrology must ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) be present, unless disturbed or problematic ☐ Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8) Restrictive Layer (if present): Type: X Hydric soil present? Yes No Depth (inches): Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply): Secondary Indicators (2 or more required): Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B) ☐ Surface water (A1) Sparsely Vegetated Concave Surface (B8) П Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) ☐ High Water Table (A2) Drainage Patterns (B10) Saturation (A3) Salt Crust (B11) Dry-Season Water Table (C2) П Water Marks (B1) Aquatic Invertebrates (B13) Saturation Visible on Aerial Imagery (C9) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Shallow Aguitard (D3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) FAC-Neutral Test (D5) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Raised Ant Mounds (D6) (LRR A) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Frost-Heave Hummocks Inundation Visible on Aerial Imagery Other (explain in remarks) (B7)Field Observations Surface Water Present? Depth (in): Yes \square No 🏻 Water Table Present? Yes \boxtimes Depth (in): Nο X Wetland Hydrology Present? Saturation Present? Depth (in): Yes No ⊠ (includes capillary fringe)

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

Remarks:

Moist, not saturated



Western Mountains, Valleys, and Coast Supplement to the 1987 COE Wetlands Delineation Manual

DP- X1

D : 10"	Lakeside - 18825			_	0 " 0 "	7/00/0040		
Project Site:	Sampling Date:	7/23/2018						
Applicant/Owner:	Lakeside Industr			al	Sampling Point:	DP- X1		
Investigator:	Sarah Sandstron	n, Roen Hohfi 23N R	eld 06E		City/County:	Renton		
Sect., Township, Range:	State:	WA						
Landform (hillslope, terrace,	etc): hillslope			Slope (%): 8	Local relief (concav	re, convex, none):	none	
Subregion (LRR): A				Lat:	Long:		Datum:	
				Lut.	T		Datam.	
Soil Map Unit Name: Urba					NWI classification:	none		
Are climatic/hydrologic condi	tions on the site typica	al for this time of	year?	☐ Yes 🗵 No	(If no, explain in rer	marks.)		
Are "Normal Circumstances"	present on the site?			☑ Yes □ No	WETs is drier than average			
Are Vegetation□, Soil □, or	Hydrology ☐ signification	antly disturbed?						
Are Vegetation□, Soil □, or					(If needed, explain	any answers in Re	marks.)	
		-						
SUMMARY OF FINDING	S - Attach site ma	ap showing sa	ampling po	oint locations, tran	sects, important fe	eatures, etc.		
Lludraphytic Vegetation Dree	ant?	Yes 🗵	No \square					
Hydrophytic Vegetation Pres	ent?						_	
Hydric Soils Present?		Yes 🗵	No \square	Is the Sampling Po	int within a Wetland?	Yes	No	
Wetland Hydrology Present?		Yes	No 🗵			_	_	
Remarks:								
VEGETATION – Use sci	entific names of n	lants						
VEGETATION - 036 3CI	chanc hames of p	nants.						
T 011 (Dist.) 5	Para N	Ab 1 t - 0	, D	L. P L.	1			
Tree Stratum (Plot size: 5m	diam.)	Absolute %			Dominance Tes	st Worksheet		
4		Cover	Specie	s? Status	Number of Domina	ent Species		
1.					that are OBL, FAC		4	
2.								(A)
3.					Total Number of D		4	
4.					Species Across All		•	(B)
			= Total (Cover	Percent of Domina		100	
					that are OBL, FAC	W, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plo	ot size: 3m diam.)					-		` ′
1.					Prevalence Inde	ex Worksheet		
2.						Cover of	Multip	ly hy
3.					OBL species	00101 01	x 1 =	<u>yy</u>
4.					FACW species		x 2 =	
					FAC species			
5.			= Total (Cover	<u>'</u>		x 3 =	
			= 10tal t	Jovei	FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size: 1m	,				Column totals	(A)	(B)	
1. Phalaris arundina	cea	80	Y	es FACW				
 Athyrium filix-fem 	ina	30	Y	es FAC	Prevalence Ir	ndex = B / A =		
 Equisetum telmat 	eia	30	Y	es FACW				
4. Convolvulus arve	nsis	20	Υ	es NI	Hydrophytic Ve	getation Indica	tors	
5.						test is > 50%		
6.					☐ Prevalence	test is ≤ 3.0 *		
7.						al Adaptations * (p	rovide supportir	na
					⊣	arks or on a separa		19
8.					- 	•	,	
9.						n-Vascular Plants *		
10.					Problematic	Hydrophytic Veget	tation * (explain)
11.								
		160	= Total (Cover	* Indicators of hydr	ric soil and wetland	hydrology mus	t be
						turbed or problema		
Woody Vine Stratum (Plot s	size:)						•	
1. Rubus armeniacu	'S	20	Y	es FAC				
2.					Hydrophytic Ve	egetation		
		20	= Total (Cover	Present		es 🔀 N	No
					1.000111			
0/ Dara Constant to the first								
% Bare Ground in Herb Strat	uiil.							
Remarks:								

OIL Sampling Point – DP-6										
Profile Descri	ption: (Describe to the	depth neede	ed to document the indicate	or or confi	rm the absence o	f indicators	i.)			
Depth Matrix Redox Features										
(inches)	Color (moist)	%	Color (moist)	% Type ¹		Loc ²	Texture	Remarks		
0-5	10YR 2/1	100					Sandy Ioam			
5-14	10YR3/1	97	10YR 4/6	3	С	М	Gravelly sandy loam			
¹ Type: C=Cond	centration, D=Depletion,	RM=Reduce	d Matrix, CS=Covered or Co	ated Sand	Grains ² Loc: PL	=Pore Linin	g, M=Matrix			
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2cm Muck (A10)										
☐ Histic Epip	•		tripped Matrix (S6)			Parent Mat	•			
☐ Black Histi		oamy Mucky Mineral (F1) (ex	,							
	Sulfide (A4)		oamy Gleyed Matrix (F2)			. (,			
, ,	Below Dark Surface (A1		epleted Matrix (F3)		_					
	Surface (A12)	•	ledox Dark Surface (F6)		3 Indicato	ors of hydror	hytic vegetation and wetland	hvdrology must		
	cky Mineral (S1)		epleted Dark Surface (F7)				sturbed or problematic	,		
-	yed Matrix (S4)		edox Depressions (F8)							
Restrictive Lay										
Type:	or (ii prodont).				Hydric soil	nresent?	Yes 🔀	No \square		
Depth (inches)					yu.io ooii	procent.	100 🔼			
Remarks:	•									
Nemarks.										
HYDROLOGY										
Wetland Hydr	ology Indicators:									
Primary Indica	ators (minimum of one r					Secondary	Indicators (2 or more required	d):		
☐ Surface w	rater (A1)		parsely Vegetated Concave S	Surface (B	88) Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)					
☐ High Wate	er Table (A2)	□ W	ater-Stained Leaves (excep	t MLRA 1,	1, 2, 4A & 4B) (B9)					
☐ Saturation	n (A3)	☐ S	Salt Crust (B11)							
☐ Water Ma	rks (B1)	□ A	quatic Invertebrates (B13)	c Invertebrates (B13) Saturation Visible on Aerial Imagery (C9)						
☐ Sediment	Deposits (B2)	☐ H	Hydrogen Sulfide Odor (C1)							
□ Drift Depo	osits (B3)	□ O	xidized Rhizospheres along	Living Roof	oots (C3)					
☐ Algal Mat	or Crust (B4)	☐ P	resence of Reduced Iron (C4	·)		⊠ FAC	-Neutral Test (D5)			
☐ Iron Depo	sits (B5)	□R	ecent Iron Reduction in Tilled	d Soils (C6)	☐ Rais	ed Ant Mounds (D6) (LRR A)			
☐ Surface S	oil Cracks (B6)	☐ Si	tunted or Stressed Plants (D	1) (LRR A)		☐ Fros	t-Heave Hummocks			
☐ Inundation (B7)	n Visible on Aerial Image	ery 🗌 O	ther (explain in remarks)							
Field Observa	ations									
Surface Water		No ⊠] Depth (in):							
Water Table P		No ⊠			Watland Hudra	James Draga	m42 Van 🗆	No 🔀		
Saturation Pres	100 🗀	No 🗵			Wetland Hydro	logy Prese	nt? Yes	No 🔀		
(includes capill		INO 🗠	g Bopan (m).							
December December	arded Date (started to	a markeder	wall porial phates are '	inone -ti- :	a) if available:					
Describe Reco	orded Data (stream gaug	e, monitoring	well, aerial photos, previous	inspection	s), if available:					
Remarks:	Moist, not saturated	d								



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

	Lakeside - 18825			_		7/23/2018		
Project Site:		Sampling Date:						
Applicant/Owner:	Lakeside Industr	ies, Inc., Attr	n: Karen De	eal	Sampling Point:	DP- X2		
Investigator:	Sarah Sandstron	n, Roen Hohf	ield		City/County:	Renton		
Sect., Township, Range:	S 19 T	23N R	06E		State:	WA		
Landform (hillslope, terrace,				Slope (%): <5	Local relief (concav		concave	-
, , , ,	etc). Depression			310pe (%). <3	Local Teller (Corica)	re, convex, none).	CONCAVE	
Subregion (LRR): A				Lat:	Long:		Datum:	
Soil Map Unit Name: Urba	n land				NWI classification:	none		
		16 11 11						
Are climatic/hydrologic condi		al for this time of	r year?	☐ Yes 🗵 No	(If no, explain in rer	marks.)		
Are "Normal Circumstances"	present on the site?			🛚 Yes 🗌 No	WETs is drier than	n average		
Are Vegetation□, Soil □, or	Hydrology ☐ significa	antly disturbed?						
Are Vegetation□, Soil □, or	Hydrology ☐ naturally	v problematic			(If needed, explain	any answers in Rem	narks.)	
, ,	, 0, ,							
SUMMARY OF FINDING	S - Attach site ma	p showing s	ampling po	oint locations, trans	sects, important fo	eatures, etc.		
Hydrophytic Vegetation Pres	ent?	Yes 🖾	No \square					
Hydric Soils Present?		Yes 🗵	No \square	Latin Committee But		. V	1	
,				is the Sampling Pol	nt within a Wetland?	? Yes 🔀] No	
Wetland Hydrology Present?		Yes 🗵	No \square					
Remarks:								
VEGETATION – Use sci	entific names of p	lants.						
Tree Stratum (Plot size: 5m	diam.)	Absolute 9	% Domina	ant Indicator	Dominance Tes	st Worksheet		
(Cover	Specie		20111111111100 100	,		
1.			•		Number of Domina	ant Species		
2.					that are OBL, FAC		2	(4)
								(A)
3.					Total Number of D Species Across Al		2	
4.					· ·			(B)
			= Total (Cover	Percent of Domina		400	
					that are OBL, FAC	;W, or FAC:	100	(A/B)
Sapling/Shrub Stratum (Plo	ot size: 3m diam)							(/05)
	7. SIZC. OIII didili.)							
1.					Prevalence Ind	ex Worksheet		
2.					Total %	Cover of	<u>Multipl</u>	ly by
3.					OBL species		x 1 =	
4.					FACW species		x 2 =	
5.					FAC species		x 3 =	
- C.			= Total (over	FACU species		x 4 =	
				Sover	UPL species			
							x 5 =	
Herb Stratum (Plot size: 1m	diam.)				Column totals	(A)	(B)	
 Phalaris arundina 	cea	80	Y	es FACW				
2. Equisetum telmat	eia	20	Y	es FACW	Prevalence II	ndex = B / A =		
3.								
4.					Hydrophytic Ve	egetation Indicate	ors	
						test is > 50%	<u> </u>	
5.								
6.					☐ Prevalence	test is ≤ 3.0 *		
7.					Morphologic	cal Adaptations * (pre	ovide supportin	ıg
8.					☐ data in rema	arks or on a separate	e sheet)	
9.						n-Vascular Plants *	,	
					- <u>- </u> - - - - - - - - - - - - -		. (/	
10.					Problematic	: Hydrophytic Vegeta	ation " (explain))
11.								
		100	= Total (Cover	* Indicators of hyd	ric soil and wetland I	hydrology must	t be
		-			present, unless dis	sturbed or problemat	tic	
Woody Vine Stratum (Plot s	size:)							
1.								
					†	4 . 4*		
2.					Hydrophytic Vo		s 🔀 N	4o 🗌
			= Total (Cover	Present	I.L	<u>r3</u>	
% Bare Ground in Herb Stra	tum:							
Remarks:								
cmano.								

SOIL Sampling Point - DP-X2 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Redox Features Color (moist) Color (moist) Texture Remarks (inches) Type¹ 0-6 10YR3/1 100 Sand 6-14 5YR4/1 95 10YR 4/6 5 С 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.) Indicators for Problematic Hydric Soils3 ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2cm Muck (A10) ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2) ☐ Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Other (explain in remarks) Loamy Gleyed Matrix (F2) ☐ Hydrogen Sulfide (A4) □ Depleted Below Dark Surface (A11) Depleted Matrix (F3) П ³ Indicators of hydrophytic vegetation and wetland hydrology must ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) be present, unless disturbed or problematic ☐ Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8) Restrictive Layer (if present): Type: X Hydric soil present? Yes No Depth (inches): Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply): Secondary Indicators (2 or more required): Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B) Surface water (A1) Sparsely Vegetated Concave Surface (B8) П Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) \boxtimes High Water Table (A2) Drainage Patterns (B10) \boxtimes Saturation (A3) Salt Crust (B11) Dry-Season Water Table (C2) Water Marks (B1) Aquatic Invertebrates (B13) Saturation Visible on Aerial Imagery (C9) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Shallow Aguitard (D3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) \boxtimes FAC-Neutral Test (D5) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Raised Ant Mounds (D6) (LRR A) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Frost-Heave Hummocks Inundation Visible on Aerial Imagery Other (explain in remarks) (B7)

Depth (in):

Depth (in):

Depth (in):

2"

0"

0"

Wetland Hydrology Present?

Field Observations
Surface Water Present?

Water Table Present?

(includes capillary fringe)

Saturation Present?

Remarks:

Yes 🏻

Yes 🗵

Yes ⊠

No \square

No \square

Nο

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



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DP- X3

D : 10"		O								
Project Site:	Lakeside - 18825					Sampling Date:	7/23/2018			
Applicant/Owner:	Lakeside Industri	es, Inc., At	tn: Karen D	eal		Sampling Point:	DP- X3			
Investigator:	Sarah Sandstrom					City/County:	Renton			
Sect., Township, Range:	S 19 T	23N R	06E			State:	WA			
Landform (hillslope, terrace, etc): hillslope Slope (%): 5						Local relief (concar	ve, convex, none):	none		
Subregion (LRR): A Lat:						Long:		Datum:		
	n land					T -	nono			
Soil Map Unit Name: Urba						NWI classification: none				
Are climatic/hydrologic cond		for this time	of year?	☐ Yes	⊠ No	(If no, explain in remarks.)				
Are "Normal Circumstances"	•				☐ No	WETs is drier than average				
Are Vegetation□, Soil □, or		•	?			(If needed, explain any answers in Remarks.)				
Are Vegetation□, Soil □, or	Hydrology ☐ naturally	problematic				(if needed, explain	any answers in Rer	пагкѕ.)		
SUMMARY OF FINDING	S - Attach site ma	n chowing	campling p	oint loc	ations trans	octe important f	oaturos oto			
SOMMAN OF THE BITTE	5 - Attach Site ma	p snowing	sampling p	OIIIL IOC	ations, trains	ects, important i	eatures, etc.			
Hydrophytic Vegetation Pres	ent?	Yes 🗵	No 🗆							
Hydric Soils Present?		Yes \square	No 🗵	lo tho	Compling Dai	nt within a Watland	, Voc [7 No.		
Wetland Hydrology Present?		Yes	No 🗵	is the	Sampling Poli	nt within a Wetland	? Yes	_ No		
Welland Hydrology Fresent!		165 🗀	NO 🖂							
Domorko										
Remarks:										
VEGETATION – Use sci	antifia namas of pl	lanta								
VEGETATION - USE SCI	entific names of pr	anis.				1				
						1				
Tree Stratum (Plot size: 5m	diam.)	Absolute			Indicator	Dominance Tes	st Worksheet			
4		Cover	Speci	es?	Status	Number of Domina	ant Species			
1.						that are OBL, FAC		3		
2.						<u> </u>			(A)	
3.						Total Number of D		3		
4.						Species Across A			(B)	
			= Total	Cover		Percent of Domina		100		
						that are OBL, FAC	JVV, OF FAC:	100	(A/B)	
Sapling/Shrub Stratum (Pla	ot size: 3m diam.)									
1.						Prevalence Ind	ex Worksheet			
2.						Total %	Cover of	Multip	ly by	
3.						OBL species		x 1 =		
4.						FACW species		x 2 =		
5.						FAC species		x 3 =		
			= Total	Cover		FACU species		x 4 =		
						UPL species		x 5 =		
Herb Stratum (Plot size: 1m	diam)					Column totals	(A)	(B)		
Phalaris arundina		80		res	FACW	Column totalo	(* ')	(5)		
2. Galium sp.	Cea	10		res	NI	Prevalence I	ndex = B / A =			
3. Equisetum telmat	oio	30		res	FACW	Fievalence	IIUEX - D / A -			
4.	eia			163	FACV	Hydrophytic V	agetation Indicat	toro		
							egetation Indicate test is > 50%	1015		
5.										
6.							test is ≤ 3.0 *			
7.							cal Adaptations * (pr		ng	
8.						☐ data in rem	arks or on a separa	te sheet)		
9.						☐ Wetland No.	n-Vascular Plants *			
10.						☐ Problemation	Hydrophytic Veget	ation * (explain)	
11.										
		120	= Total	Cover		* Indicators of hvd	ric soil and wetland	hvdrology mus	t be	
							sturbed or problema			
Woody Vine Stratum (Plot s	size:)									
1. Rubus armeniacu	ıs	10	•	Yes	FAC					
2.						Hydrophytic V	egetation			
		10	= Total	Cover		Presen		es 🔀 N	/o	
				-						
% Bare Ground in Herb Stra	tum:									
	MIII.					1				
Remarks:										
ii ee										

SOIL Sampling Point - DP-X3 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Redox Features Color (moist) Color (moist) Texture Remarks (inches) Type¹ 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.) Indicators for Problematic Hydric Soils3 ☐ Histosol (A1) ☐ Sandy Redox (S5) ☐ 2cm Muck (A10) ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6) ☐ Red Parent Material (TF2) ☐ Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Other (explain in remarks) Loamy Gleyed Matrix (F2) ☐ Hydrogen Sulfide (A4) ☐ Depleted Below Dark Surface (A11) Depleted Matrix (F3) П ³ Indicators of hydrophytic vegetation and wetland hydrology must ☐ Thick Dark Surface (A12) Redox Dark Surface (F6) be present, unless disturbed or problematic ☐ Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) ☐ Sandy Gleyed Matrix (S4) ☐ Redox Depressions (F8) Restrictive Layer (if present): Type: X Hydric soil present? Yes No Depth (inches): Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply): Secondary Indicators (2 or more required): Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B) ☐ Surface water (A1) Sparsely Vegetated Concave Surface (B8) П Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) ☐ High Water Table (A2) Drainage Patterns (B10) Saturation (A3) Salt Crust (B11) Dry-Season Water Table (C2) П Water Marks (B1) Aquatic Invertebrates (B13) Saturation Visible on Aerial Imagery (C9) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Shallow Aguitard (D3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) \boxtimes FAC-Neutral Test (D5) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Raised Ant Mounds (D6) (LRR A) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Frost-Heave Hummocks Inundation Visible on Aerial Imagery Other (explain in remarks) (B7)Field Observations Surface Water Present? Depth (in): Yes \square No 🏻 Water Table Present? Yes No ⊠ Depth (in): X Wetland Hydrology Present? Saturation Present? Depth (in): Yes No ⊠ (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Very dry