Potential Mitigation Measures

Sound Transit's policy [Executive Order No. 1, Establishing a Sustainability Initiative for Sound Transit (2007)] on ecosystem mitigation is to avoid impacts on environmentally sensitive resources and provide adequate mitigation to ensure no net loss of ecosystem function and acreage as a result of agency projects. The proposed project would mitigate impacts on ecosystem resources in accordance with the mitigation sequencing requirements established by the National Environmental Policy Act (NEPA), Washington State Environmental Policy Act (SEPA), the Clean Water Act (CWA), the Migratory Bird Treaty Act (MBTA), and local critical areas ordinances (CAOs).

According to NEPA (40 Code of Federal Regulations [CFR] 1508.20), mitigation for ecosystems impacts is based on a hierarchy of first avoiding the impact, then minimizing the impact by limiting the degree or magnitude of the action, rectifying the impact by restoring, repairing, or rehabilitating the affected environment, reducing or eliminating the impact over time, and finally compensating for any remaining unavoidable adverse impacts by providing substitute resources or environments.

As described below, the build alternatives for the proposed project would avoid or minimize potential impacts on ecosystems resources whenever practicable, and Sound Transit is committed to providing compensatory mitigation when avoidance is not practicable.

5.1 Avoidance and Minimization

The avoidance and minimization of impacts was a guiding principle in the preliminary design of the build alternatives. The build alternatives for the proposed project would avoid or minimize potential impacts on ecosystems resources whenever practicable. Sound Transit would comply with standard specifications, best management practices (BMPs), and applicable federal, state, and local mitigation requirements during design, construction, and post construction activities. To comply with MBTA regulations, schedule restrictions will be established for clearing activities. To the extent possible, contractors would schedule clearing activities outside migratory bird nesting periods. In the event that this is not feasible, Sound Transit would work with qualified staff at the U.S. Department of Agriculture to conduct preconstruction surveys. Surveys would determine the presence of nesting migratory birds in the corridor. If old nests are present, they would be removed to prevent future use of those nests. If an active nest is found during construction, buffer zones may be established until the young birds fledge. If removing an active nest or other action is recommended, Sound Transit would consult with the U.S. Fish and Wildlife Service (USFWS) to perform such activities in accordance with USFWS procedures and appropriate permit conditions. Sound Transit would meet all regulatory requirements and continue to implement proactive avoidance and minimization measures related to these BMPs in adherence with federal, state, and local regulations.

5.1.1 Construction Best Management Practices

BMPs have been developed to avoid and minimize impacts during construction. These BMPs involve implementing the anticipated conditions that are likely to be set forth in project permits, including the Hydraulic Project Approval (HPA) from Washington Department of Fish and Wildlife (WDFW),

as per Washington Administrative Code (WAC) 220-110-070, for installing culverts during construction; Section 401 and Section 404 permits under the CWA; and the National Pollutant Discharge Elimination System (NPDES) permit. BMPs would also be included in the development of a Stormwater Pollution Prevention Plan (SWPPP) that prescribes the implementation of measures for identifying, reducing, eliminating, or preventing on-site sediment and erosion problems that could affect aquatic resources, wetlands, and associated wildlife habitat.

Sound Transit or its construction contractor would also implement construction BMPs that would apply to all ecosystem sensitive areas. These include delineating construction limits with fencing and signage to prevent inadvertent impacts on riparian vegetation, wetlands, upland vegetation to be preserved, or other sensitive sites outside of construction limits and development of a Temporary Erosion and Sediment Control (TESC) plan to address the potential for erosion during construction. Example BMPs that would be implemented under the TESC plan include silt fences, protective ground covers, and straw bales in drainage features.

BMPs would be implemented to limit soil compaction in sensitive areas, and temporary work bridges could be used in extremely sensitive areas, such as the Scriber Creek wetland complex. If access through sensitive areas cannot be avoided, temporary construction roads may be used. Such use would be limited to the minimal footprint necessary for access. BMPs would be employed for fish and aquatic habitat protection. In-water and over water work will be avoided as practicable, except for under the SR 520 Alternative, which would require piping a portion of Goff Creek and placing the support columns for the Lynnwood Link Extension elevated guideways in portions of the Lynnwood wetland (N1-1) where Scriber Creek has diffuse flow. However, most construction activities will be conducted in the dry, before the stream reach is diverted. Efforts will be conducted to rescue fish, prior to dewatering or diverting any stream reaches. Disturbed or temporarily cleared riparian vegetation will be replanted, as soon as practicable, with suitable native species.

If an HPA from WDFW is required, all work would comply with the terms and conditions set forth in the permit. Seasonal restrictions (i.e., work windows) would apply to work conducted below the ordinary high water mark (if any should be required). If any culverts need to be installed or extended on fish-bearing or potentially fish-bearing streams (e.g., during mitigation for Goff Creek impacts), design and construction would comply with WAC 220-110-070 regarding fish passage requirements. Any affected streambeds and stream banks would be restored after in-water work.

For water quality protection, the project would obtain a construction stormwater general permit for coverage under the NPDES permit program, which is required for certain construction activities. The goal of the permit is to reduce or eliminate stormwater pollution and other impacts on surface waters from construction sites. The project must also develop a construction SWPPP that implements BMPs for identifying, reducing, eliminating, or preventing sediment and erosion problems on site. The SWPPP would include a TESC plan; spill prevention, control, and countermeasures plan; concrete containment and disposal plan; dewatering plan; and a fugitive dust plan.

Measures would be implemented before and during project construction to avoid or minimize effects on vegetation and wildlife resources, including birds that are protected under the MBTA. To comply with MBTA regulations, schedule restrictions would be established for clearing activities. To the extent possible, contractors would schedule clearing activities outside the bird nesting period. In the event that this is not feasible, Sound Transit would work with qualified staff at the U.S. Department of Agriculture to conduct preconstruction surveys. Surveys would determine the

presence of nesting migratory birds in the corridor. If old nests are present, they would be removed to prevent future use of those nests. If an active nest is found during construction, buffer zones may be established until the young birds fledge. If removing an active nest or other action is recommended, Sound Transit would perform such activities in accordance with USFWS procedures and appropriate permit conditions. These strategies, along with others designed to avoid or minimize effects on other resources, such as streams, wetlands, and soils, would be implemented to effectively minimize the potential impacts on sensitive ecosystem resources. Examples of such additional strategies include minimizing vegetation clearing, restoring temporarily affected areas, preparing and implementing a revegetation plan, and implementing construction methods to avoid impacts on migratory birds. In accordance with federal, state, and local requirements and guidance, Sound Transit would also implement appropriate measures to minimize the risk of introduction and spread of noxious and invasive plant and animal species.

5.1.2 Design and Operation Best Management Practices

Sound Transit would also implement design and operation BMPs for permanent stormwater runoff treatment and flow control. These could include natural or engineered dispersion BMPs; biofiltration BMPs such as vegetated filter strips, biofiltration swales, or ecology embankments; wetpool BMPs; and infiltration BMPs. The project would route drainage to maintain existing stream basin contributing areas.

5.2 Rectifying and Reducing Impacts over Time

To the extent that impacts cannot be avoided or minimized through BMPs, Sound Transit would implement restoration measures to rectify temporary impacts and reduce their effects over time. Immediately following construction in each project segment, Sound Transit would begin restoring temporarily disturbed wetlands, streams (if any work occurs below the ordinary high water mark [OHWM] of any streams), and buffer areas. The length of time that would be required for site restoration to effectively replace habitat functions would vary. Temporarily disturbed wetlands, streams, and their buffers would be restored to preconstruction conditions, or better, where feasible and planted with appropriate native species when construction activities are finished. Sound Transit will conduct detailed site surveys to reestablish topography. Restoration will include soil amendment and vegetation replacement. Upland forested vegetation disturbed within construction staging areas will be revegetated with native species generally within 1 year following construction. Invasive, nonnative vegetation will be removed permanently from temporarily affected areas to improve the overall habitat for wildlife.

5.3 Compensatory Mitigation

To the extent that impacts cannot be avoided or minimized through BMPs, or rectified after construction, Sound Transit would implement additional measures to reduce adverse effects and provide compensatory mitigation measures where adverse effects are unavoidable.

Each of the alternatives has the potential to permanently affect wetland and wetland buffer habitats. Sound Transit has committed to achieving no net loss of wetland function and area on a project-wide basis. Compensatory mitigation would be conducted in accordance with applicable federal, state, and local requirements and guidelines. These include the federal *Final Compensatory*

Mitigation Rule (40 CFR Part 230); interagency guidance prepared by the Washington State Department of Ecology, the U.S. Army Corps of Engineers, and U.S. Environmental Protection Agency in Wetland Mitigation in Washington State (Washington State Department of Ecology et al. 2006); and local CAOs for the Cities of Bellevue and Lynnwood.

The federal *Final Compensatory Mitigation Rule* (*Federal Register* CFR Part 230, Volume 73 No. 70, 19594–1970540) specifies that, from the perspective of federal permitting under the Clean Water Act, the selection of wetland mitigation sites should be conducted with a watershed approach and that compensatory mitigation for wetland impacts should be accomplished preferentially with the use of approved mitigation banks, then the use of in-lieu fee programs, and finally through permittee-responsible, project-specific mitigation. However, local CAOs often prioritize that wetland mitigation projects be located in the same subbasin or basin as the impact.

The City of Bellevue has acknowledged a general lack of feasible and suitable compensatory wetland mitigation sites in the West Tributary of Kelsey Creek basin. Bellevue Municipal Code (BMC) 20.25H.105 contains provisions for off-site (outside of the drainage basin) mitigation. Lynnwood Municipal Code (LMC) 17.10.055 specifies that wetland mitigation occur in same drainage area, as defined by the City's comprehensive flood and drainage management plan.

Mitigation for unavoidable impacts on other resources (e.g., streams, stream buffers, and fish and wildlife habitat/habitat for species of local importance) that are protected under local CAOs would also be conducted in accordance with the requirements of those ordinances (i.e., BMC 20.25H.080 and 20.25H.085 for streams and 20.25H.160 for habitat associated with species of local importance; LMC 17.10.064 for streams and 17.10.081 for wildlife). Sound Transit will also adhere to local ordinances regarding tree replacement ratios (e.g., replacement of significant trees per the LMC).

Habitat improvements to mitigate for effects on aquatic resources will provide the most benefits if they occur downstream of existing anadromous fish passage barriers (i.e., downstream of Bel-Red Road for impacts on Goff Creek or West Tributary of Kelsey Creek, and the lower reaches of Scriber Creek). Sound Transit will work with the Cities of Bellevue or Lynnwood to define appropriate mitigation that is consistent with, and complimentary to, local plans for ecosystem restoration. Mitigation could be also accomplished through a combination of site-specific actions as well as basin-wide or programmatic actions, such as creating wider stream or riparian buffers; restoring wetlands or native riparian areas; removing nonnative, invasive vegetation; supporting environmental education; and improving stormwater management.

5.3.1 Approved Mitigation Bank

Currently, there are no approved mitigation banks with service areas that include the subbasins in which wetland impacts would occur under the action alternatives. Although it is possible that a bank could become certified with service in the project area in the future, mitigation banking projects take considerable lead time for planning and approval.

5.3.2 King County In-Lieu Fee Program (Mitigation Reserves Program)

King County has developed an in-lieu fee program called the Mitigation Reserves Program, which was approved by the Corps in March 2012 (King County 2013b). The program includes service areas within the watersheds affected by the OMSF (i.e., Cedar River/Lake Washington and

Sammamish River) that are located in King County. As of February 2012, the program was available throughout unincorporated King County. The program may be available to project proponents (such as Sound Transit) that work within incorporated cities. For example, use of the Mitigation Reserves Program has been allowed in the City of Bellevue, consistent with the provisions of the Bellevue Critical Areas Code (20.25H.105) for other essential public facility projects. Sound Transit may similarly be able to mitigate impacts from the Preferred Alternative, the BNSF Modified Alternative, the SR520 Alternative, or the BNSF Storage Yard component of the Lynnwood Alternative through the Mitigation Reserves Program as these alternatives would occur within King County.

5.3.3 Project-Specific Mitigation Developed by Sound Transit

Sound Transit may be required to mitigate for unavoidable impacts from the Preferred Alternative through permittee-responsible, project-specific mitigation in accordance with the mitigation ratios specified in the Lynnwood or Bellevue Critical Area Codes (as appropriate to the Preferred Alternative) and in accordance with the procedures outlined by the Washington State Department of Ecology (Ecology) and the U.S. Army Corps of Engineers (Corps) for selecting mitigation sites using a watershed approach (Hruby et al. 2009).

To meet federal and state CWA permitting and mitigation requirements, Sound Transit anticipates also using Ecology's credit/debit tool, in conjunction with the local jurisdiction's mitigation site selection and critical area mitigation ratio requirements, to determine the appropriate location, amount, and types of compensatory mitigation to compensate for the specific type and degree of functions affected by the Preferred Alternative appropriately (Hruby 2012). The credit/debit tool considers mitigation site selection relative to consistency with a basin plan and the potential for temporal loss of wetland function due to the timing of the mitigation compared with the impact. Higher mitigation ratios are ascribed for impacts on forested wetland communities that take longer to develop and mitigation that is concurrent or delayed in time relative to the impact (as opposed to occurring in advance of the impact).

5.3.3.1 Mitigation for Impacts from the Preferred Alternative, BNSF Modified Alternative, and SR 520 Alternative

The Bellevue Critical Areas Code (20.25H.105) requires compensatory mitigation for wetland impacts to occur according to their location requirements and the following order of preference.

- 1. Restoring wetlands on upland sites that were formerly wetlands.
- 2. Creating wetlands on disturbed upland sites.
- 3. Enhancing significantly degraded wetlands.

Compensatory mitigation is required to be either in-kind and on-site or in-kind and within the same drainage subbasin. Mitigation site selection must also include consideration of wetland mitigation replacement ratios, buffer conditions and proposed widths, hydrogeomorphic classes of on-site wetlands when restored, proposed flood storage capacity, and potential to mitigate stream fish and wildlife impacts (such as connectivity).

Mitigation actions may be conducted off-site and outside of the drainage subbasin if there are no reasonable on-site or drainage subbasin opportunities or the on-site or drainage subbasin opportunities do not have a high likelihood of success and if established watershed goals for water quality, flood or conveyance, habitat, or other wetland functions strongly justify the location of mitigation at another site.

Compensatory mitigation ratios are specified in the Bellevue Critical Areas Code (20.25H.105.C) by wetland category, assuming wetland creation or restoration on-site and in-kind, as well as concurrent with the impact, as follows:

• Category I: • 6:1

• Category II: • 3:1

• Category III: • 2:1

• Category IV: • 1.5:1

Consequently, permanent wetland impacts on 0.45 acre of Category III wetlands from the Preferred Alternative would require at least 0.90 acre of compensatory wetland mitigation if wetland creation or restoration were proposed and if mitigation could be accomplished on-site, in-kind, and concurrent with the impact. Bellevue also requires consideration of the particular functions provided by each wetland when choosing sites and designing wetland mitigation. Bellevue requires wetland buffer impacts to be mitigated and mitigation wetlands to have an appropriate buffer width, consistent with or greater than the category of wetland affected.

To mitigate for the anticipated 0.42 acre of wetland buffer impact from the Preferred Alternative and achieve a buffer of at least 60 feet (consistent with a Category III wetland) around a created wetland, a mitigation site of at least 3 acres would most likely be needed if mitigation solely through wetland creation were to be proposed. If wetland enhancement, or a combination of wetland creation and enhancement, were to be proposed, higher ratios, consistent with those outlined in *Wetland Mitigation in Washington State* (Washington State Department of Ecology et al. 2006), could be required (e.g., ratios ranging up to 4:1 for wetland enhancement proposed in combination with wetland creation). This could result in the need for a site of sufficient size to accommodate another acre or more of mitigation.

Sound Transit has conducted extensive work to date to identify and evaluate suitable and feasible wetland mitigation sites in the Kelsey Creek basin for the East Link project. The developed nature of the Preferred Alternative site creates a lack of ecologically viable opportunities for accomplishing wetland creation or enhancement on-site. Thus, Sound Transit explored potential mitigation opportunities within both the West Tributary subbasin and the larger Kelsey Creek subbasin and looked for opportunities for wetland restoration, creation, and enhancement (albeit within the context of these highly urbanized areas).

Undeveloped parcels of approximately 3 to 5 acres in size were considered in the context of their location, connectivity to other habitats, and potential to support successful wetland restoration, creation, or enhancement. Considering this past work for East Link and the mitigation area that would needed for the OMSF Preferred Alternative, it appears that additional feasible mitigation sites in the West Tributary Kelsey Creek basin are lacking.

Opportunities

A specific proposal for compensatory mitigation for unavoidable impacts on wetlands, wetland buffers, stream corridors, and other ecosystem resources will be determined during final design and project permitting. Removing barriers to anadromous fish passage is generally viewed to be one of the more cost-effective approaches to riverine habitat restoration in Pacific Northwest ecosystems (Beechie et al. 2010). However, in watersheds that are highly fragmented by numerous fish-passage barriers and degraded by extensive urban development, barrier removal may not realize substantial benefit unless it is implemented in the context of a broader restoration strategy. Sound Transit would coordinate with federal, state, and local agencies and Tribes to identify habitat mitigation measures that would provide the greatest benefit to ecosystem function in the Kelsey Creek watershed.

Currently identified opportunities include the potential for improving fish passage within the West Tributary Kelsey Creek, implementing other habitat restoration and water quality improvements within the basin or subbasin, and/or accomplishing compensatory mitigation through a combination of wetland restoration, creation, or enhancement at one or more sites within the West Tributary subbasin or the Kelsey Creek basin.

5.3.3.2 Mitigation for Impacts from the Lynnwood Alternative

The Lynnwood Critical Areas Code (17.10.055) requires compensatory mitigation for wetland impacts to occur within the same drainage area, as defined by the City's comprehensive flood and drainage management plan. Sound Transit would utilize the wetland mitigation ratios specified in the Lynnwood Critical Areas Code (17.10.055) to propose mitigation for unavoidable wetland impacts. Compensatory mitigation ratios are specified by wetland category, assuming wetland creation or restoration in the same drainage area as defined by the City's comprehensive flood and drainage management plan, as follows.

• Category I: • 6:1

• Category II: • 3:1

• Category III: • 2:1

• Category IV: • 1.5:1

Consequently, the 2.12acres of permanent impact on the Scriber Creek wetland (Wetland N1-1, Category II) and the 0.43 acre of impact on Wetlands N1-2, N1-3 and PWLY2 (Category III) would require at least 7.22 acres of mitigation, according to the Lynnwood requirements.

Given the high functions of the Scriber Creek wetland (Wetland N1-1), its forested components, and the potential for impacts on an area that may be compensatory mitigation for past wetland impacts, a larger area of mitigation could be required under Lynnwood Critical Areas Code (17.10.055), consistent with functional replacement and temporal loss considerations in Ecology's credit/debit tool.

Opportunities

Sound Transit identified preliminarily opportunities for compensatory wetland and stream mitigation in the Scriber Creek vicinity near the Lynnwood Transit Center. Mitigation opportunities exist on parcels that are under both public and private ownership, including parcels that could be acquired by Sound Transit because they intersect with areas needed for the Lynnwood Link Extension light rail right-of-way.

Because impacts from the BNSF Storage Tracks component of the Lynnwood Alternative would occur in Bellevue, mitigation for those impacts could potentially be accomplished through the Mitigation Reserves Program, or via mitigation opportunities previously described for the other build alternatives located in Bellevue.

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Attachment A

Best Management Practices for Sensitive Ecosystem Resources

Best Management Practices for Sensitive Ecosystem Resources

The following list of measures is a compilation of best management practices (BMPs) that can be used to avoid and minimize temporary construction and permanent operational impacts of the East Link project on sensitive ecosystem resources. These BMPs are either required by state or federal agencies to obtain permits required for the project or may be required to comply with typical permit conditions. They are based on Sound Transit's knowledge of permit requirements and experience with conducting environmental compliance and permitting for numerous other projects in the Puget Sound area.

Construction-Related BMPs

General BMPs for All Sensitive Areas

The project would delineate construction limits for vegetated and habitat areas that may be disturbed during construction. The intent is to prevent unintended impacts on riparian vegetation, wetlands, woodlands, and other sensitive sites outside of the construction limits. The construction limits would be clearly marked with high-visibility construction fencing prior to any ground-disturbing or construction-related activities. There would be no direct site disturbance outside of the construction limits.

Soil or rock stockpiles, excavated materials, or excess soil materials would be prevented from eroding into sensitive habitats, including stream channels, wetlands, and riparian areas outside of the construction limits by high water or storm runoff. Sound Transit or its construction contractor would develop a Temporary Erosion and Sediment Control plan that would be implemented during construction. This TESC plan would address potential erosion during construction. The contractor would implement the plan before discharging or allowing runoff from the site. Monitoring requirements specified in the TESC would provide feedback to make sure that the erosion control practices are operating properly and effectively. BMPs would be implemented to limit soil compaction in sensitive areas.

Fish and Aquatic Habitat Protection

All work would comply with the terms and conditions set forth in the Hydraulic Project Approval (HPA) issued for the project by the Washington Department of Fish and Wildlife (WDFW). The HPA program is the vehicle through which WDFW regulates activities that affect the bed or flow of waters of the state for the protection of fish life. An HPA is required for construction or structural work associated with any bridge structure or culvert construction within or below the ordinary high water mark (OHWM) of waters of the state.

Seasonal restrictions (i.e., work windows) applied to work conducted below the OHWM would be as required by an HPA issued by WDFW and by the Section 404 permit issued by the U.S. Army Corps of Engineers (USACE).

In accordance with typical requirements of an HPA, when large woody debris must be moved to allow the reasonable use of an over-water or in-water facility, the large woody debris would be returned to the water downstream, where it would continue to provide aquatic habitat function.

All newly installed culverts would be in compliance with Washington Administrative Code (WAC) 220-110-070_(http://wdfw.wa.gov/hab/engineer/w2201170.htm) regarding fish passage requirements. Any affected streambeds, stream banks adjacent to culverts, and at the stream relocation reach, would be permanently restored after in-water work with plantings of native or approved woody and herbaceous species within one year of completion of each phase of construction. Bank protection would follow the guidelines set forth in WDFW's Integrated Streambank Protection Guidelines (http://wdfw.wa.gov/hab/ahg/ispgdoc.htm).

Water Quality

The federal Clean Water Act (CWA) (1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES) permit program, which is administered by the U.S. Environmental Protection Agency (EPA). EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 of the Revised Code of Washington (RCW), which defines the Washington State Department of Ecology (Ecology) authority and obligations in administering the wastewater discharge permit program.

Ecology's construction stormwater general permit is required for certain construction activities. The goal of the permit is to reduce or eliminate stormwater pollution and other impacts on surface waters from construction sites.

The project must complete a Notice of Intent (NOI) for coverage under the permit. The project must also develop a Stormwater Pollution Prevention Plan that implements BMPs for identifying, reducing, eliminating, or preventing sediment and erosion problems on site.

Any materials placed below the OHWM (e.g., cobble or boulders for energy dissipation at culvert ends, streambed gravel or other substrates) would be relatively clean and handled in a way to minimize turbidity. Methods would be used such that it is not expected the project would exceed state water quality standards at the point of compliance (WAC chapter 173-201A) when flow is restored to the work site. To the fullest extent practicable, culverts would be installed, modified, and/or replaced in isolation from stream flow (if there is flow during the work window) by means of a temporary bypass flume, diversion culvert, or by temporarily pumping flow around the in-water work zone. Any temporary dewatering of the in-water work zone would be preceded by work area isolation and fish removal/relocation (as necessary). Fish handling would be conducted by a trained and qualified biologist. Turbid water produced during the course of in-water work would be prevented from discharging to fish-bearing waters or wetlands. Turbid wastewater may be routed to temporary or permanent detention facilities, or to upland areas that provide adequate rates of infiltration.

In accordance with conditions of a typical HPA, heavy equipment used during the course of in-water work would operate from above the OHWM wherever possible. Use of equipment below the OHWM would be limited to that necessary to gain position for work. Drive mechanisms would not enter or operate below the OHWM, except under the terms of the HPA issued by WDFW.

Uncured concrete and/or concrete byproducts would be prevented from coming in contact with streams or water conveyed directly to streams during construction. Any water having direct contact with uncured concrete would be contained and treated or removed from the site (as appropriate) to prevent discharge to streams or wetlands.

Installation of permanent footings and all drilled or pile-driven shafts (and excavated spread footings) below the OHWM (e.g., for culvert endwalls) would be conducted in a manner consistent with Section 404 and other permits issued for the project by the USACE and other parties (as applicable). When constructing drilled shafts, the contractor would ensure that all drilling equipment, drill recovery and recycling pits, and any waste or spoil produced are properly contained to prevent discharge of drill wastes or fluids to any surface water or wetlands.

In accordance with typical Section 401 permit requirements, turbidity would be monitored if in-water work occurs when water is flowing in the streams. Equipment (excluding track-mounted equipment, large cranes, and other relatively immobile equipment) would be refueled and maintenance activities conducted at a distance from the nearest wetlands, ditches, and flowing or standing water approved by regulatory permits. Appropriate spill prevention measures and fuel containment systems would be designed and implemented to completely contain a potential spill as specified in the Spill Prevention and Control Countermeasure plan. If flooding of the work area is expected to occur within 24 hours, all equipment and material would be evacuated from near-stream construction sites. An exception would be for efforts to avoid or minimize resource damage. All equipment that is used for in-stream or in-wetland work would be cleaned prior to operations below the OHWM. Wash-water would not be discharged directly into any water body without pretreatment.

Weed Control

If herbicide use is required during the monitoring period, the type and application of the pesticide should be chosen based upon City of Seattle Tier Tables (http://www.seattle.gov/environment/Pesticides.htm) or other locally accepted methodology. Additionally, Sound Transit's Integrated Pest management Plan (IPM) would provide guidance regarding pesticide use and IPM practices.

Design and Operation BMPs

The project would install permanent storm water runoff treatment and flow control facilities where needed according to the requirements of the 2004 Ecology *Stormwater Management Manual for Western Washington* or the most recently adopted manual.

The project would incorporate stormwater conveyance and management facilities that promote infiltration where applicable.

The project would select, design, and install runoff treatment BMPs that are best suited to the site conditions and best capable of achieving the required levels of treatment (subject to negotiation with the local jurisdiction and/or Ecology). These would or may include natural or engineered dispersion BMPs; biofiltration BMPs such as vegetated filter strips, biofiltration swales, or ecology embankments; wet-pool BMPs; and infiltration BMPs.

The project would not reroute existing drainage configurations to the extent that stormwater from one basin or subbasins is conveyed and discharged to another.

The project would implement IPM techniques, in accordance with current Ecology water quality agreements, to minimize the impact on aquatic and terrestrial environments.

Attachment B

West Tributary Aquatic Habitat Survey

West Tributary Aquatic Habitat Survey

A screening level assessment of the West Tributary of Kelsey Creek was conducted by ICF International on December 15, 2014, to characterize baseline habitat conditions and obtain information necessary for the Hi-Run model dilution zone analysis (see Appendix E). Habitat parameters—including measured or estimated bankfull width, active channel width, bankfull depth, habitat type, and substrate characteristics—were recorded at a total of 16 transects using visual observations, a stadia rod, and measuring tape. Bankfull width was estimated for some transects where bankfull flows extended into thick vegetation that prevented accurate measurements.

The channel at and downstream of the proposed stormwater discharge point is composed of two discrete segments: a large pool that extends parallel to the east side of 120th Street from a piped section of the West Tributary channel, and the main channel of the West Tributary, which flows perpendicular from the approximate midpoint of this pool to the east. The pool is maintained by a relict beaver dam and accumulated large woody debris that forms a grade control and is sufficiently deep that it completely submerges the existing stormwater discharge outlets. Habitat characteristics were measured at 10 transects in the pool and 6 transects in the main channel downstream of the pool. Transect locations are shown in Exhibit B-1 and cross-sectional habitat features recorded at each transect are listed in Table B-1. Photographs of the study area and feature descriptions are provided below.

West Tributary headwater wetland E2-4 is located immediately north of the northern boundary of the project site. The southern edge of the wetland is potentially subject to short-term, construction-related turbidity impacts in areas immediately adjacent to the construction footprint. Photographs 12–15 depict representative habitat conditions along the southern shoreline of the wetland and its outlet channel. Habitat characteristics in the wetland were not extensively surveyed due to delays obtaining landowner permission and access difficulties.

TABLE B-1 Habitat Characteristics in the West Tributary by Survey Transect

Transect	Distance from Outfall (feet)	Bankfull Width (feet)	Active Channel Width (feet)	Bankfull Depth (feet)	Habitat Type	Substrate	Note
			Backwatered Poo	ol at Discharge	Outlet		
P-1	70 a	12	12	3.3	Pool	Gravel/sand	Pool is perpendicular to downstream channel. Formed by relict beaver dam and accumulated woody debris.
P-2	60 a	9	9	1.8	Pool		
P-3	50 a	18	12	2.5	Pool		
P-4	40 a	23	23	2.7	Pool		
P-5	30 a	28	28	3.2	Pool		
P-6	20 a	28	28	3.5	Pool		
P-7	10 a	28	28	3	Pool		
P-8	0	28	28	2.8	Pool		
P-9	10	22	22	2.5	Pool		
P-10	20	20	20	2.5	Pool		
			Main Channel	of West Tribut	ary		
M-1	48	Ind.	4.9	2.5	Glide	Sand	Short glide upstream of large pool formed by relict beaver dam.
M-2	58	46	3.9	2.6	Glide	Sand/gravel	
M-3	78	61	9.2	1.9	Pool	Sand/fines	Pool formed by relict beaver dam
M-4	98	24	1.6	2.6	Glide	Sand/gravel	Relatively narrow primary channel in broad vegetated floodplain.
M-5	118	28	2.3	3.0	Glide	Sand/gravel	
M-6	138	30	Ind.	Ind.	Ind.	Vegetation	No defined channel, flow disperses over vegetated floodplain.

^a Distance upstream from the proposed stormwater discharge.

Ind. = Features are indeterminate because there was no defined channel at this transect location.

Exhibit B-1. December 2014 aquatic habitat survey transects in the West Tributary of Kelsey Creek. Photo 1. Upstream end of study area facing upstream, transects P-1 through P-3.

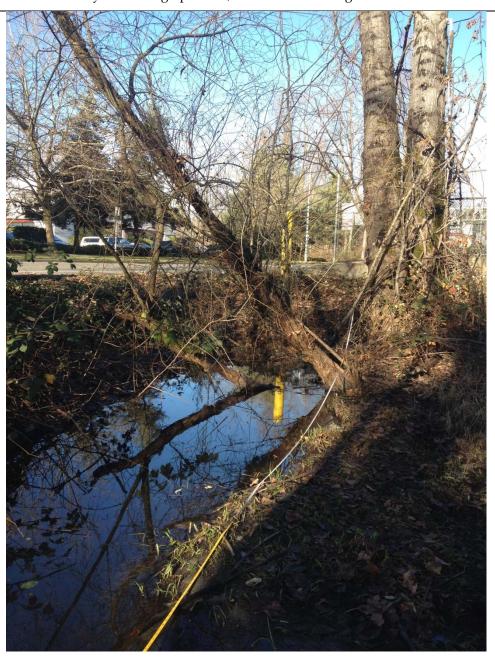


Photo 2. Same location as photo 1 facing downstream over the primary pool. Stormwater outfalls are located on the right bank in the middle of the photograph and are submerged and not visible from the shoreline.

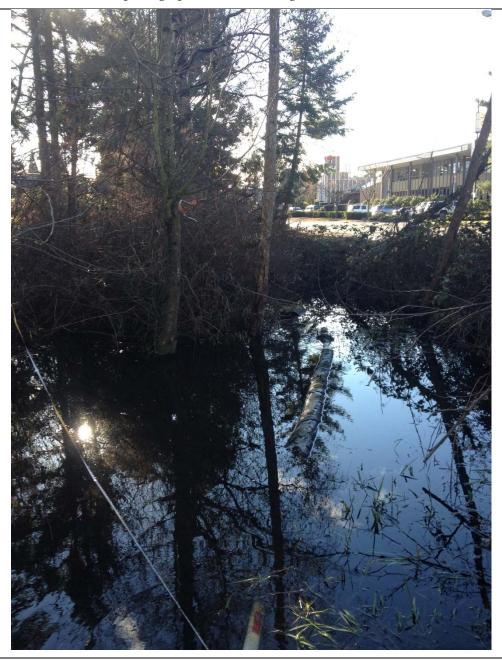


Photo 3. Downstream view from transect M-6. Note lack of defined channel.

Photo 4. Downstream view from transect M-5.



Photo 5. Upstream view from transect M-5.



Photo 6. Downstream view from transect M-4.



Photo 7. Upstream view from transect M-4.



Photo 8. Downstream view from transect M-3.

Photo 9. Upstream view from transect M-3. Pool formed by relict beaver dam.

Photo 10. Upstream view from transect M-2.



Photo 11. Upstream view from transect M-1.



Photo 12. Relict beaver dam grade control upstream of outlet culvert for West Tributary headwater wetland E2-4.



Photo 13. West Tributary channel, downstream end of headwater wetland E2-4.



Photo 14. West Tributary headwater wetland E2-4, southeast corner facing northwest.

Photo 15. Typical shoreline conditions in West Tributary headwater wetland E2-4 at locations subject to potential construction-related turbidity impacts.



Attachment C

Wildlife Functions Field Data Form

Sound Transit East Link Wildlife Functions Field Data Form (Adapted from WSDOT's Best Professional Judgment [BPJ] Characterization)

	Biologist:	
Site ID:		
	Date:	
Project:		
(Adapted from WSDOT's Best Profes	ssional Judgment [BPJ] Characterization	1)

Function	Likely or Not Likely to Provide (State Your Rationale), Yes/No, or Number
F. General Habitat Suitability	
Area is not fragmented by development.	
Upland surrounding area is undeveloped.	
Area has connectivity with other habitat types.	
4. Diversity of plant species is high.	
5. Evidence of wildlife use, e.g., tracks, scat, gnawed stumps present.	
6. Distance to disturbance source and type.	
H. Habitat for Amphibians	
Cover (i.e., woody debris, rocks, and leaf litter) present.	
2. Woody debris present within area.	
Proximity to wetland habitats – distance and type.	
4. Lands within 1 km (0.6 mi) of area are > or = 40% undeveloped.	
5. Wetlands and/or an intermittent or perennial stream within 1 km (0.6 mi) of area.	
6. Presence of movement barrier between above wetland or stream and site being evaluated	
I. Habitat for Mammals	
Permanent water present within the area.	
Presence of emergent vegetation in areas of permanent water.	
Areas containing dense shrubs and/or trees are present.	
Interspersion between different strata of vegetation.	
5. Presence of slopes / banks suitable for denning.	
6. Evidence of wildlife use, e.g., dens, tracks, scat, gnawed stumps, etc.	
J. Habitat for Birds	
Forested and scrub-shrub classes present within the area.	
2. Average tree height.	
3. Average DBH.	

Function	Likely or Not Likely to Provide (State Your Rationale), Yes/No, or Number
4. Largest DBH and percent of trees in this class.	
5. Relative tree species diversity (L, M, H).	
6. Snags present in area.	
7. Cavities present in trees.	
8. Tree % canopy estimate.	
9. Shrub % canopy estimate.	
Adjacent area contains relatively undisturbed grassland or wetland shrub and/or forest habitats.	
11. Lands within 1 km (0.6 mi) of the area are greater than or = 40% undeveloped.	
L. Native Plant Richness	
Dominant and co-dominant plants are native.	
2. Area has three or more strata of vegetation.	
3. Area has mature trees (conifer, deciduous?).	
4. Number of species of trees.	
5. Area has well developed shrub layer.	
6. Number of species of shrubs.	
N. Uniqueness and Heritage	
Area contains documented occurrence of a state or federally listed threatened or endangered species.	
2. Area contains documented critical habitat, high quality ecosystems, or priority species respectively designated by the USFWS, the WDNR's NHP, or WDFW's Priority Habitats and Species Program.	
3. Area has biological, geological, or other features that are determined rare by the local jurisdiction.	
4. Area has been determined significant by the local jurisdiction because it provides functions scarce for the area	

Attachment D

Wetland Sample Plot Data Forms

Project Site:	Sound Transit East Link Extens	ion Project		City/Cou	nty: <u>Bellevue/King</u>	Sampling D	ate:	April 2	23, 2013
Applicant/Owner:	Sound Transit				State:	WA Sampling P	oint:	BNSF SP1W	
Investigator(s):	C Douglas & J. Pursley				Section, Towns	hip, Range: S29, T2	4N, R5E		-
Landform (hillslope, to	errace, etc.): <u>Area adjacent to</u>	RR Tracks	Lo	cal relief (cond	cave, convex, none):	<u>concave</u>	Slope	(%): <u>C</u>	1% to 2%
Subregion (LRR):	<u>A</u>	Lat: <u>47.6</u>	62N		Long: <u>122.18W</u>		Datum: _		
Soil Map Unit Name:	Alderwood gravelly sandy loar	n & Kitsap sil	t loam			NWI classification:	None Ma	oped	
Are climatic / hydrolog	gic conditions on the site typical fo	r this time of	year?	Yes ⊠	l No ☐ (If no,	explain in Remarks.)			
Are Vegetation	, Soil □, or Hydrology	☐, signific	cantly disturb	ed? Are	"Normal Circumstances"	present?	Yes	N	4o 🗆
Are Vegetation	, Soil □, or Hydrology	☐, natura	lly problema	ic? (If no	eeded, explain any answ	ers in Remarks.)			
SUMMARY OF FIN	NDINGS – Attach site map s	howing sai	mpling poi	nt locations	, transects, importa	nt features, etc.			
Hydrophytic Vegetation	on Present?	Yes 🗵	No □						
Hydric Soil Present?		Yes 🗵	No □	Is the Sam within a W			Yes	M N	lo □
Wetland Hydrology Pr	resent?	Yes 🗵	No □	within a w	etianu r				
Remarks: Wetland	BNSF West is located adjacent to	railroad track	ks with comm	nercial develop	ment located to the west	t. Wetland includes de	epressional	l and sl	ope
	sses. Jurisdictional ditch along ra						-		
VEGETATION – U	se scientific names of plant	s							
Tree Stratum (Plot siz	ze: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Wo	rksheet:			
1. Salix scouleriana		60	yes	FAC	Number of Dominant	Species	-		(4)
2					That Are OBL, FACW		<u>5</u>		(A)
3					Total Number of Dom	inant	E		(D)
4					Species Across All St	rata:	<u>5</u>		(B)
50% = <u>1</u> , 20% = <u>0</u>		<u>60</u>	= Total Co	ver	Percent of Dominant S	Species	100		(A/B)
Sapling/Shrub Stratur	m (Plot size: 15 foot radius)				That Are OBL, FACW	, or FAC:	100		(A/b)
Spiraea douglasii		<u>40</u>	<u>yes</u>	<u>FACW</u>	Prevalence Index wo	orksheet:			
2					Total % 0	Cover of:	Multiply	by:	
3					OBL species		x1 =		-
4					FACW species		x2 =		-
5					FAC species		x3 =		-
50% = <u>1</u> , 20% = <u>0</u>		<u>40</u>	= Total Co	ver	FACU species		x4 =		-
Herb Stratum (Plot size	ze: 3 foot radius)				UPL species		x5 =		-
Agrostis capillaris		<u>10</u>	<u>yes</u>	<u>FAC</u>	Column Totals:	(A)			_ (B)
2. Athyrium filix-fem	<u>ina</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	Pre	evalence Index = B/A	=		
3. Phalaris arundina	<u>cea</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetat	ion Indicators:			
4					☐ 1 – Rapid Test f	or Hydrophytic Vegeta	ation		
5					□ 2 - Dominance □	Γest is >50%			
6					☐ 3 - Prevalence I	ndex is ≤3.0 ¹			
7					4 - Morphologica	al Adaptations ¹ (Provi	de supporti	ng	
8					data in Rema	arks or on a separate	sheet)		
9					5 - Wetland Nor	n-Vascular Plants ¹			
10					☐ Problematic Hyd	drophytic Vegetation ¹	(Explain)		
11									
50% = <u>0</u> , 20% = <u>3</u>		<u>45</u>	= Total Co	ver	¹ Indicators of hydric se be present, unless dis				
Woody Vine Stratum	(Plot size: 3 foot radius)						•		
1									
2					Hydrophytic	Voc. 5	7	N.	
50% =, 20% =		<u>0</u>	= Total Co	ver	Vegetation Present?	Yes	7	No	
% Bare Ground in He	rb Stratum <u>55</u>								
Remarks:	100% dominant wetland vegetation	n per the Do	minance Tes	t	<u> </u>				
remarks.									
1									

SOIL Sampling Point: BNSF West SP1W Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Remarks (inches) Color (moist) % Color (moist) % Type¹ Loc2 Texture 10YR 4/1 100 Silt loam 0 to 3 None None None None 3 to 4 10YR 4/1 <u>60</u> 10YR 5/6 <u>40</u> D M Silt loam w/gravel & cobble 4 to 18+ 10YR 4/1 60 10YR 5/6 <u>40</u> D Silt loam Μ w/gravel ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) П Stripped Matrix (S6) \Box Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) \boxtimes Depleted Matrix (F3) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 chroma with redox **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) П Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Water Table Present? Yes \boxtimes No Depth (inches): 2 inches Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Saturation and water table observed in sample plot

Project Site:	Sound Transit East Link Exten	sion Project			City/Coun	nty: <u>Bellevue</u>	e/King	;	Sampling D	Date:	April		
Applicant/Owner:	Sound Transit						State:	<u>WA</u>	Sampling F	Point:	BNSI SP2U		<u>st</u>
Investigator(s):	C Douglas & J. Pursley					Section	on, Towns	ship, Range	e: <u>S29, T2</u>	24N, R5E			
Landform (hillslope, te	rrace, etc.): Area adjacent to	RR Tracks		Loca	al relief (conc	ave, convex, r	none):	concave		Slope	e (%):	<u>0% t</u>	<u> 2%</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	.62N			Long: <u>12</u>	22.18W			Datum: _			
Soil Map Unit Name:	Alderwood gravelly sandy loa	am & Kitsap si	ilt loam					NWI classi	fication:	None Ma	<u>apped</u>		
Are climatic / hydrolog	ic conditions on the site typical	for this time of	f year?	Y	'es ⊠	No 🗆	lf no,	, explain in	Remarks.)				
Are Vegetation		☐, signif	icantly dis	turbec	d? Are "	Normal Circur	mstances'	" present?		Yes	\boxtimes	No	
Are Vegetation	Soil □, or Hydrology	☐, natura	ally proble	ematic	? (If ne	eded, explain	any ansv	vers in Rem	narks.)				
SUMMARY OF FIN	IDINGS – Attach site map	showing sa	mpling	point	locations,	transects,	importa	nt feature	es, etc.				
Hydrophytic Vegetatio	n Present?	Yes	⊠ No										
Hydric Soil Present?		Yes [No	\boxtimes	Is the Samp within a We					Yes		No	\boxtimes
Wetland Hydrology Pr	esent?	Yes [☐ No	\boxtimes									
	BNSF West is located adjacent									lepression	al and	slope	
HGM clas	ses. Jurisdictional ditch along i	ailroad tracks	hydrologi	ically o	connects wetl	and to wetlan	ids to the	north and s	outh.				
VEGETATION – U	se scientific names of plan					T							
Tree Stratum (Plot siz	e: 30 foot radius)	Absolute <u>% Cover</u>	Domina Specie		Indicator <u>Status</u>	Dominance	e Test Wo	rksheet:					
1						Number of Date of That Are OF				<u>1</u>			(A)
2					-								
3 4.						Total Number Species Acr				<u>3</u>			(B)
			= Total	l Covo		·							
50% = <u>0</u> , 20% = <u>0</u>	n (Plot size: <u>15 foot radius</u>)	<u>0</u>	- 10tai	Cove	1	Percent of E That Are OE				<u>37</u>			(A/B)
	-	40	1/00		<u>UPL</u>	Prevalence							
Cytisus scoparius Rubus armeniacu		<u>40</u> <u>20</u>	<u>yes</u>		FACU	Frevalence		Cover of:		Multipl	ly by:		
3	<u>s</u>	20	<u>yes</u>		<u>1 AOO</u>	OBL species		COVET OI.		x1 =	y Dy.		
4						FACW species				x2 =		_	
5.						FAC species				x3 =		_	
50% = <u>1</u> , 20% = <u>1</u>		70	= Total	l Cove		FACU speci				x4 =		_	
Herb Stratum (Plot siz	re: 3 foot radius)	<u>10</u>	10141	. 0010	•	UPL species				x5 =		_	
Agrostis capillaris	.c. <u>o loot radius</u>)	<u>60</u>	VAS		<u>FAC</u>				•	A0 -		— (B	2)
Galium trifidum			<u>yes</u>		FACW	Column Tota		evalence Ir	•	_		(L	')
Sandm timuum Phalaris arundina	200	<u>1</u> 10	<u>no</u> no		FACW	Hydrophyti							
4. <u>Tanacetum vulgar</u>		<u>10</u> <u>5</u>			<u>UPL</u>					ation			
5	<u>c</u>	<u> </u>	<u>no</u>		<u>OI L</u>			Test is >50		ation			
6						_							
7.								Index is <3. al Adaptati					
8								arks or on a			ting		
9						☐ 5-We	etland No	n-Vascular	Plants ¹				
10								drophytic V		(Evoloin)			
11.						L Flobie	emane my	diopriyac v	egetation	(Explail)			
50% = <u>1</u> , 20% = <u>0</u>		76	= Total	l Cove		¹ Indicators of							
	(Plot size: 3 foot radius)	<u> </u>			•	be present,	unless dis	sturbed or p	oroblematic	C.			
1	,, <u></u> ,												
2.					· 	Hydrophyti	ic						
50% =, 20% =		0	= Total	l Cove		Vegetation		Yes	s [No		\boxtimes
% Bare Ground in He		_				Present?							
,	37% dominant wetland vegetation	on per the Dor	minance T	est									
Remarks:	77 70 dominant wettand vegetation	n per trie Dui	iiiiuiloe I	JJ1.									

SOIL Sampling Point: BNSF West SP2U Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features (inches) Color (moist) % Color (moist) % Type¹ Loc2 Texture Remarks 10YR 5/4 <u>70</u> 10YR 4/2 <u>30</u> D 0 to 4 M Sandy loam w/gravel 4 to 10 10YR 4/3 <u>75</u> 10YR 4/2 <u>25</u> D Μ Sandy loam w/gravel 10 to 18+ 10YR 4/3 25 10YR 4/2 D Μ Sandy loam w/grave ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) П Stripped Matrix (S6) \Box Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) \boxtimes Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 3 and 4 chroma with redox features **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) П Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Water Table Present? Yes \boxtimes No Depth (inches): Saturation Present? Wetland Hydrology Present? Yes No \boxtimes Yes No \boxtimes Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: No saturation or water table observed in sample plot

Project Site:	Sound Transit East L	_ink Extension F	Project			City/Cour	nty: <u>Be</u>	llevue/King		Sampling [Date:		23, 2	
Applicant/Owner:	Sound Transit							Stat	e: <u>WA</u>	Sampling F	Point:	BNS SP3	<u>F We</u> <u>W</u>	<u>st</u>
Investigator(s):	C Douglas & J. Purs	ley						Section, Tow	nship, Rang	e: <u>S29, T</u>	24N, R5E			
Landform (hillslope, te	rrace, etc.): Area a	adjacent to RR	<u> Fracks</u>		Loca	al relief (conc	ave, con	vex, none):	concave		Slope	e (%):	<u>0% t</u>	<u>ა 2%</u>
Subregion (LRR):	<u>A</u>	L	.at: <u>47</u>	.62N			Long	: <u>122.18W</u>			Datum:			
Soil Map Unit Name:	Alderwood gravelly	sandy loam & l	Kitsap s	ilt loam					NWI class	ification:	None Ma	<u>apped</u>		
Are climatic / hydrolog	ic conditions on the si	te typical for this	s time o	of year?	Y	'es ⊠	No	☐ (If n	no, explain in	Remarks.))			
Are Vegetation ☐,			signi	ficantly d	listurbed	d? Are "	'Normal C	Circumstance	es" present?		Yes	\boxtimes	No	
Are Vegetation ,	Soil □, or H	lydrology \square ,	natur	ally prob	lematic	? (If ne	eeded, ex	plain any an	swers in Rer	narks.)				
SUMMARY OF FIN	IDINGS – Attach s	ite map show	/ing sa	ampline	g point	locations	, transe	cts, impor	tant featur	es, etc.				
Hydrophytic Vegetatio				<u> </u>	-			•						
Hydric Soil Present?		,	res [⊠ No		Is the Samp		a			Yes	\boxtimes	No	
Wetland Hydrology Pr	esent?	,	res [⊠ No	_	within a We	etiano ?							
	BNSF West is located					rcial develon	ment loca	ated to the w	est Wetland	d includes o	denression	al and	slone	
	ses. Jurisdictional dit										acpi coolori	ai aiia	зюрс	
VEGETATION – Us	se scientific name	s of plants												
Tree Stratum (Plot siz	e: 30 foot radius)		solute Cover	Domi Spec		Indicator Status	Domin	ance Test V	Vorksheet:					
Salix scouleriana		95		<u>yes</u>	163:	FAC	Numbe	er of Domina	nt Species					
2		_	· 					re OBL, FAC			<u>5</u>			(A)
3							Total N	lumber of Do	minant					
4								s Across All			<u>5</u>			(B)
50% = <u>1</u> , 20% = <u>0</u>		<u>95</u>		= Tot	al Cove	r	Percen	t of Dominar	nt Species		400			(A (D)
Sapling/Shrub Stratun	n (Plot size: 15 foot ra	<u>dius</u>)					That A	re OBL, FAC	W, or FAC:		<u>100</u>			(A/B)
1. <u>Spiraea douglasii</u>		<u>40</u>		<u>ves</u>		<u>FACW</u>	Preval	ence Index	worksheet:					
2		_						Total %	6 Cover of:		Multipl	y by:		
3		_					OBL sp	oecies			x1 =		_	
4		_					FACW	species			x2 =		_	
5		_					FAC sp	pecies			x3 =		_	
50% = <u>1</u> , 20% = <u>0</u>		<u>40</u>		= Tot	al Cove	r	FACU	species			x4 =		_	
Herb Stratum (Plot siz	e: 3 foot radius)						UPL sp	ecies			x5 =		_	
Equisetum arvens	<u>e</u>	<u>10</u>		<u>yes</u>		<u>FAC</u>	Columi	n Totals:	(A)			(E	i)
2. Phalaris arundina	<u>cea</u>	<u>30</u>		<u>yes</u>		<u>FACW</u>		1	Prevalence I	ndex = B/A	=			
3. <u>Tolmiea menziesii</u>		<u>10</u>		<u>yes</u>		<u>FAC</u>	Hydro	phytic Vege	tation Indic	ators:				
4		_					□ 1	- Rapid Tes	st for Hydrop	hytic Vege	tation			
5		_					⊠ 2	- Dominanc	e Test is >50	0%				
6		_					□ 3	- Prevalenc	e Index is <3	3.0 ¹				
7		_					_ 4	- Morpholog	gical Adaptat	ions ¹ (Prov	ide suppor	ting		
8		_					- '	data in Re	marks or on	a separate	sheet)			
9		_					□ 5	- Wetland N	Ion-Vascular	Plants ¹				
10		_						roblematic F	Hydrophytic \	egetation ¹	(Explain)			
11		_					1							
50% = <u>1</u> , 20% = <u>2</u>		<u>50</u>		= Tot	al Cove	r		tors of hydric sent, unless						
Woody Vine Stratum	Plot size: 3 foot radius	<u>s</u>)								•				
1		_					l ⁻		_				_	_
2		_					Hydroj Vegeta	-	Ye	s 1	\boxtimes	No		
50% =, 20% =		<u>0</u>		= Tot	al Cove	r	Preser		10	- 1		.40		_
% Bare Ground in He	b Stratum <u>50</u>													
Remarks:	100% dominant wetlar	nd vegetation pe	r the D	ominanc	e Test									

SOIL Sampling Point: BNSF West SP3W Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Texture Remarks (inches) Color (moist) % Color (moist) % Type¹ Loc² 10YR 4/1 100 None Silt loam 0 to 3 None None None 3 to 6 10YR 4/1 100 None None None None Silt loam w/gravel 6 to 18+ 10YR 4/1 100 Silt loam w/gravel & cobble None None None None ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) П Stripped Matrix (S6) \Box Histic Epipedon (A2) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 chroma **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) П Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Yes \boxtimes Water Table Present? No Depth (inches): 2 inches Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Saturation and water table observed in sample plot

Project Site:	Sound Transit East Link Exten	sion Project			City/Cour	ty: <u>Bellevue/King</u>	Sa	mpling Date:		23, 2	
Applicant/Owner:	Sound Transit					State:	<u>WA</u> Sa	mpling Point:	BNS SP4	<u>SF We</u> <u>U</u>	<u>st</u>
Investigator(s):	C Douglas & J. Pursley					Section, Towns	ship, Range:	S29, T24N, R5E			
Landform (hillslope, to	errace, etc.): <u>Area adjacent to</u>	RR Tracks		Loca	al relief (conc	ave, convex, none):	concave	Slop	e (%):	<u>0% t</u>	<u>o 2%</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	<u>62N</u>			Long: <u>122.18W</u>		Datum:			
Soil Map Unit Name:	Alderwood gravelly sandy loa	m & Kitsap si	<u>lt loam</u>				NWI classification	ation: None M	<u>lapped</u>		
Are climatic / hydrolog	gic conditions on the site typical f	or this time of	year?	Y	es 🛚	No ☐ (If no,	explain in Re	emarks.)			
Are Vegetation	, Soil □, or Hydrology	☐, signifi	cantly dist	turbed	d? Are "	Normal Circumstances'	' present?	Yes	\boxtimes	No	
Are Vegetation	, Soil □, or Hydrology	☐, natura	ally proble	matic1	? (If ne	eded, explain any answ	vers in Remar	ks.)			
SUMMARY OF FIN	NDINGS – Attach site map :	showing sa	mpling _l	point	locations,	transects, importa	nt features	, etc.			
Hydrophytic Vegetation	on Present?	Yes [No	\boxtimes							
Hydric Soil Present?		Yes [] No	\boxtimes	Is the Samp within a We			Yes		No	\boxtimes
Wetland Hydrology Pr	resent?	Yes [] No	\boxtimes							
	BNSF West is located adjacent t								nal and	slope	;
HGM cla	sses. Jurisdictional ditch along r	ailroad tracks	hydrologi	cally c	connects wet	and to wetlands to the	north and sou	th.			
VEGETATION – U	se scientific names of plar										
Tree Stratum (Plot siz	ze: 30 foot radius)	Absolute <u>% Cover</u>	Domina Species		Indicator <u>Status</u>	Dominance Test Wo	rksheet:				
1						Number of Dominant		<u>2</u>			(A)
2						That Are OBL, FACW	, or FAC:	_			` ,
3						Total Number of Dom		<u>5</u>			(B)
4				_		Species Across All St	rata:				
50% = <u>0</u> , 20% = <u>0</u>	(District of 45 feet and 1991)	<u>0</u>	= Total	Cove	r	Percent of Dominant That Are OBL, FACW		<u>40</u>			(A/B)
	<u>m</u> (Plot size: <u>15 foot radius</u>)										
1. <u>Ilex aquifolium</u>	,	<u>20</u>	<u>ves</u>		FACU FACU	Prevalence Index wo		8.4 Hz			
2. <u>Oemleria cerasifo</u>		<u>15</u>	<u>yes</u>		<u>FACU</u>		Cover of:	<u>Multip</u>	ly by:		
3. Rubus armeniacu	<u>IS</u>	<u>10</u>	<u>no</u>		<u>FACU</u>	OBL species		x1 = x2 =		_	
4 5.						FACW species FAC species		x2 =		_	
50% = <u>0</u> , 20% = <u>2</u>		<u></u>	= Total	Covo		FACU species		x4 =		_	
	zo: 2 foot radius)	4 5	- Total	Cove	1	·		x5 =		_	
Herb Stratum (Plot siz	·	10			FAC	UPL species		X3 -			
Agrostis capillaris		<u>10</u>	<u>no</u>		FAC	Column Totals:	(A)	D/A	_	(E	<i>i</i>)
2. <u>Cirsium arvense</u>		<u>30</u>	<u>yes</u>		<u>FACU</u>			ex = B/A =			
3. Equisetum arvens	<u>se</u>	<u>35</u>	<u>yes</u>		FAC	Hydrophytic Vegeta					
4. <u>Festuca rubra</u> 5.		<u>15</u>	<u>yes</u>		<u>FAC</u>	☐ 1 – Rapid Test		ic vegetation			
6						3 - Prevalence I	_				
7 8.								s ¹ (Provide suppo eparate sheet)	rting		
9.						5 - Wetland Nor					
10.											
11.						☐ Problematic Hy	aropnytic veg	etation ¹ (Explain)			
50% = <u>0</u> , 20% = <u>3</u>			= Total	Covo		¹ Indicators of hydric s	oil and wetlar	nd hydrology must	t		
	(Plot size: 3 foot radius)	<u>90</u>	- Total	Cove	Į.	be present, unless dis	sturbed or pro	blematic.			
	(Flot size. <u>5 loot fadius</u>)										
1 2.						Hydrophytic					
50% =, 20% =		0	= Total	Covo		Vegetation	Yes		No		\boxtimes
		<u>0</u>	- Total	Cove	1	Present?					
% Bare Ground in He											
Remarks:	40% dominant wetland vegetation	n per the Don	ninance To	est.							

inches) (Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture			Remarks	S	
0 to 18+	10YR 4/2	100	Nor		None	None	None	Sandy loan	n w/grav	el & angula			
					<u> </u>		<u> </u>						
	<u> </u>												
				_									
				_									
				_									
				_									
		-		_									
	ntration, D=Deple					oated Sand	d Grains. ² Lo	cation: PL=P				3	
-	cators: (Applicat	le to all L			· ·				tors for Pro		Hydric S	ioils":	
Histosol (A					dy Redox (S5)	`			2 cm Muck		TE0\		
Histic Epipe	-			-	ped Matrix (S6)		(cept MLRA 1)		Red Parent	,	,	E12\	
Black Histic Hydrogen 8					ny Gleyed Matr		(Cept WERA 1)		Very Shallo Other (Expl		-	1 12)	
	selow Dark Surfac	:e (A11)			leted Matrix (F3				Other (Exp	iam in reci	idiko)		
_	Surface (A12)	0 (/ (1 1)		-	ox Dark Surface	•							
_	cky Mineral (S1)				leted Dark Surfa	` ,			tors of hydre				
_	yed Matrix (S4)			-	ox Depressions				tland hydrold ess disturbe			ıt,	
estrictive Laye	er (if present):							u u	ooo diotarbo	u or proble	mado.		
ype:													
							Hydric Soils P	resent?		Yes		No	\boxtimes
	hroma with no red	dox feature	?s				Tryuno cons						
lemarks: 2 cl		dox feature	es				Tryunio dono						
IYDROLOGY Vetland Hydrolo	ogy Indicators:			hat apply			Tryuno dono 1		nny Indicator	rs (2 or mo	ro roquir	od)	
IYDROLOGY Vetland Hydrolo rimary Indicator	ogy Indicators: 's (minimum of on		; check all t		-	(89 (RQ))	Tryunio Sons	Seconda	ary Indicator	•	•	ed)	
YDROLOGY //etland Hydrolorimary Indicator Surface W	ogy Indicators: s (minimum of on ater (A1)			Wate	er-Stained Leav	, ,		Seconda U	ater-Stained	l Leaves (E	39)	ed)	
YDROLOGY //etland Hydrolor imary Indicator	ogy Indicators: s (minimum of on ater (A1) rr Table (A2)		; check all t	Wate	er-Stained Leav	, ,		Seconda W:	ater-Stained	Leaves (E	39))	ed)	
YDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3)		; check all t	Wate (exc Salt	er-Stained Leav ept MLRA 1, 2 Crust (B11)	, 4A, and 4		Seconda W:	ater-Stained ILRA 1, 2, 4 rainage Patte	Leaves (E A, and 4B erns (B10)	39))	ed)	
YDROLOGY //etland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3)		; check all t	Wate (exc Salt Aqua	er-Stained Leavert MLRA 1, 2 Crust (B11) atic Invertebrate	es (B13)		Seconda UW: (M) Dr.	ater-Stained	I Leaves (E A, and 4B erns (B10) /ater Table	39))	,	
IYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment I	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3) rks (B1) Deposits (B2)		; check all t	Wate (exc Salt Aqua	er-Stained Leaver MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O	es (B13)		Seconda W: (M) Dr. Dr. Sa	ater-Stained ILRA 1, 2, 4 rainage Patter ry-Season W	I Leaves (EA, and 4B) erns (B10) Vater Table	(C2)	,	
VYDROLOGY /etland Hydrology	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3) rks (B1) Deposits (B2)		; check all t	Wate (exc Salt Aqua Hydr Oxid	er-Stained Leaver MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O	es (B13) Odor (C1) eres along	4B) Living Roots (C3	Seconda	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis	Leaves (EA, and 4B) erns (B10) dater Table ible on Aer	(C2)	,	
IYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment I Drift Depos	ogy Indicators: s (minimum of on later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)		; check all t	Wate (exc Salt Aqua Hydr Oxid	er-Stained Leaver-Stained Leaver-Sta	es (B13) dor (C1) eres along led Iron (C4	4B) Living Roots (C3	Seconda War (M) Dr. Dr. Sa Geo	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P	A, and 4B erns (B10) /ater Table ible on Aer Position (D2 ard (D3)	(C2)	,	
IYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment I Drift Depos	ogy Indicators: s (minimum of on later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)		; check all t	Wate (exc Salt Aqua Hydr Oxid Pres	ept MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O lized Rhizosphe eence of Reduce	es (B13) Idor (C1) Idor (C4) Idor in Tilled	Living Roots (C3	Seconda W: (M) Dr. Dr. Sa Ge Sh FA	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P nallow Aquita	A, and 4B erns (B10) /ater Table ible on Aer Position (D2 ard (D3) Fest (D5)) (C2) rial Image	ery (C9)	
YDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)	e required	; check all t	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun	ept MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled s Plants (D	Living Roots (C3	Seconda Ware (M) Dr. Dr. Sa Gee Sh Ra	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis ecomorphic P nallow Aquita	Leaves (E.A., and 4B erns (B10) Vater Table ible on Aer Position (D2 ard (D3) Fest (D5) punds (D6)	(C2) rial Image (LRR A)	ery (C9)	
YDROLOGY /etland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	e required	; check all t	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun	ept MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe ence of Reduce ent Iron Reduct	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled s Plants (D	Living Roots (C3	Seconda W: (M) Dr. Dr. Sa Dr. Sa Dr. Rea	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P hallow Aquita AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Vater Table ible on Aer Position (D2 ard (D3) Fest (D5) punds (D6)	(C2) rial Image (LRR A)	ery (C9)	
PYDROLOGY Vetland Hydrology Indicator Surface W High Wate Saturation Water Mar Sediment I Drift Depos I ron Depos Surface So Inundation Sparsely V ield Observation	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial degetated Concavons:	e required	; check all t	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun	ept MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe ence of Reduce ent Iron Reduct	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled s Plants (D	Living Roots (C3	Seconda W: (M) Dr. Dr. Sa Dr. Sa Dr. Re	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P hallow Aquita AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Vater Table ible on Aer Position (D2 ard (D3) Fest (D5) punds (D6)	(C2) rial Image (LRR A)	ery (C9)	
YDROLOGY Vetland Hydrology Vetland Hydrology Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation Sparsely V Sield Observation	ogy Indicators: s (minimum of on later (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial /egetated Concavons: resent? Yes	lmagery (I	; check all t	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	ept MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct ted or Stresses er (Explain in Re	es (B13) dor (C1) eres along led Iron (C4) ion in Tilled Plants (D' emarks)	Living Roots (C3	Seconda W: (M) Dr. Dr. Sa Dr. Sa Dr. Re	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P hallow Aquita AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Vater Table ible on Aer Position (D2 ard (D3) Fest (D5) punds (D6)	(C2) rial Image (LRR A)	ery (C9)	
YDROLOGY //etland Hydrolo rimary Indicator Surface W High Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation Sparsely V ield Observatic urface Water Preservatic	ogy Indicators: s (minimum of on ater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial degetated Concavors: resent? Yes	lmagery (I	; check all t	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leaver-Stained Leaver-Sta	es (B13) dor (C1) eres along led Iron (C4) ion in Tilled Plants (D' emarks)	Living Roots (C3	Seconda W: (M) Dr. Dr. Sa Dr. Sa Dr. Re	ater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P hallow Aquita AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Vater Table ible on Aer Position (D2 ard (D3) Fest (D5) punds (D6)	(C2) rial Image (LRR A)	ery (C9)	
IYDROLOGY //etland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation	ogy Indicators: s (minimum of on later (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial /egetated Concavons: resent? Yesent? Yesent? Yesent? Yesent? Yes	Imagery (E	; check all t	Wate (exc Salt Aqua Hydri Oxid Pres Recc Stun Othe	ept MLRA 1, 2 Crust (B11) atic Invertebrate rogen Sulfide O dized Rhizosphe sence of Reduce ent Iron Reduct ted or Stresses er (Explain in Re	es (B13) Door (C1) Door (C1) Door (C4) Door (C4) Door (C4) Door (C4) Door (C5) Door (C6) Door (C	Living Roots (C3 L) d Soils (C6) 1) (LRR A)	Seconda W: (M) Dr. Dr. Sa Dr. Sa Dr. Re	ater-Stained ILRA 1, 2, 4 ainage Pattery-Season Waturation Vis ecomorphic P nallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	d Leaves (E.A., and 4B erns (B10) /ater Table ible on Aer Position (D2 ard (D3) Fest (D5) bunds (D6) Hummocks	(C2) rial Image (LRR A)	ery (C9)	o
YDROLOGY Vetland Hydrology Vetland Marcology Vetland Marcology Vetland Observation	ogy Indicators: s (minimum of on later (A1) or Table (A2) (A3) oks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial /egetated Concavons: resent? Yesent? Yesent? Yesent? Yesent? Yes	Imagery (Eve Surface	; check all t	Wate (exc Salt Aqua Hydr Oxid Pres Reca Stun Othe	er-Stained Leaver-Stained Leaver-Stained Leaver-Stained Leaver-Stained Leaver-Stained Leaver-Stained Leaver-Stained Leaver-Stained Reduction Reduc	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled s Plants (D* emarks)	Living Roots (C3 d) d Soils (C6) 1) (LRR A)	Seconda W: (M) Dr. Dr. Sa Sh Ra Fre	ater-Stained ILRA 1, 2, 4 ainage Pattery-Season Waturation Vis ecomorphic P nallow Aquita AC-Neutral T aised Ant Mo ost-Heave H	d Leaves (E.A., and 4B erns (B10) /ater Table ible on Aer Position (D2 ard (D3) Fest (D5) bunds (D6) Hummocks	(C2) rial Image 2) (LRR A)	ery (C9)	0

Project Site:	Sound Transit	East Link Extension	n Projec	<u>ct</u>			City/Cour	nty: <u>E</u>	Bellevue/King	1	Samplin	g Date:		23, 2	<u>2013</u>
Applicant/Owner:	Sound Transit								St	tate: WA	Samplin	g Point:	BNS Nort		t SPU
Investigator(s):	C Douglas & J.	<u>Pursley</u>							Section, To	ownship, Ra	nge: <u>S29,</u>	T24N, R5E			
Landform (hillslope, to	errace, etc.):	Narrow area adjac	ent to R	R Tra	<u>cks</u>	Loca	al relief (cond	cave, co	onvex, none)	: concave	<u>2</u>	Slope	e (%):	<u>0% t</u>	<u>o 2%</u>
Subregion (LRR):	<u>A</u>		Lat:	47.62	<u>N</u>			Lor	ng: <u>122.18\</u>	<u>V</u>		Datum:			
Soil Map Unit Name:	Kitsap silt loa	<u>m</u>								NWI cla	ssification:	None M	apped		
Are climatic / hydrolog	gic conditions on	the site typical for	this time	e of ye	ar?	Υ	′es ⊠] No	o 🗌 (l	f no, explain	in Remark	s.)			
Are Vegetation	, Soil □,	or Hydrology	□, sig	gnifica	ntly dis	sturbed	d? Are	"Norma	l Circumstan	ices" presen	t?	Yes	\boxtimes	No	
Are Vegetation	, Soil □,	or Hydrology	□, na	turally	/ proble	ematic	? (If ne	eeded,	explain any a	answers in F	Remarks.)				
0	IDINIOO A														
SUMMARY OF FIN		ch site map sh				-	locations	, trans	sects, impo	ortant feat	ures, etc.	•			
Hydrophytic Vegetation	on Present?		Yes		No		Is the Sam	pled Ar	rea			.,	_		
Hydric Soil Present?			Yes		No		within a We					Yes		No	
Wetland Hydrology Pr			Yes		No										
Remarks: Wetland		is located adjacer nal ditch along rail									Wetland in	cludes depre	ssiona	and	slope
TIOW Glas	3303. Varisaiotioi	ial alteri along rain	ioaa iia	oko ily	arolog	loany c	connects wet	ilana to	wellands to	tric soutri.					
VECETATION															
VEGETATION – U			Absolut	te	Domin	ant	Indicator	T	• • • • • • •						
Tree Stratum (Plot siz	ze: 30 foot radius)	% Cove	<u>er</u>	<u>Specie</u>	<u>es?</u>	<u>Status</u>	Dom	inance Test	worksnee	:				
1									ber of Domir			<u>0</u>			(A)
2								IIIat	Are OBL, FA	ACW, OI FAC	J.				
3									Number of licities Across A			<u>0</u>			(B)
4								'							
50% = <u>0</u> , 20% = <u>0</u>	n (Diet eize: 15 f	not radius)	<u>0</u>		= Tota	.i Cove	: F		ent of Domin Are OBL, FA			<u>0</u>			(A/B)
Sapling/Shrub Stratur	<u>II</u> (Flot size. <u>15 li</u>	oot radius)						-	alence Inde						
1								riev		I % Cover of		Multip	ly by:		
2 3								OBI	species	1 % Cover of	<u>l.</u>	<u>Multipl</u> x1 =	IV DV.		
4.									W species		-	x2 =		_	
5.									species	-	-	x3 =		_	
50% = <u>0</u> , 20% = <u>0</u>			0		= Total	ıl Cove			U species		-	x4 =	-	_	
Herb Stratum (Plot size	ze: 3 foot radius)		<u>~</u>		1010	. 0010			species		-	x5 =		_	
1	ec. <u>o 100t radius</u>)								•		(A)	XO –	-	(E	21
2								Colui	mn Totals:			3/A =		(L	')
3								Hydr	ophytic Veg			<i></i>			
4								-	1 – Rapid T	=		netation			
5.										nce Test is >		getation			
6										nce Index is					
								_			_				
7 8.										ogical Adapi Remarks or d		ovide suppor ate sheet)	rting		
9.									5 - Wetland	Non-Vascu	lar Plants ¹	,			
10.												on ¹ (Explain)			
11.									riobieman	<i>-</i> пушорпуш	c vegetatic	лі (Ехріаііі)			
50% = <u>0</u> , 20% = <u>0</u>			0		= Tota	ıl Cove						drology must			
Woody Vine Stratum	(Plot size: 3 foot	radius)	<u>~</u>		1010	. 0010		be pr	resent, unles	s disturbed	or problema	atic.			
1	(* **** **** <u>******</u>	,													
2.								Hydr	ophytic						
50% =, 20% =			0		= Total	ıl Cove		_	etation	,	Yes		No		\boxtimes
% Bare Ground in He			_				-	Pres	ent?						
		tland vegetation pe	or the D	omina	nce Te	est un	land plot in r	ailroad i	tracks fill nris	em with 1000	% hare grou	und			
Remarks:	0% dominant we	liand vegetation pr	ei ille Di	UIIIIIII	iice re	ssi, upi	ianu piot in re	alli oau	liacks iiii piis	SIII WILII 100	% bare groi	unu.			

0 to 18+ Fill prism	9	%	Color (mo	oist) %	Type'	Loc ²	Texture		F	Remark	S		
	1	00	None	None	None	None	Fill prism	angular r	ock				
	_												
	_												
	_												
	_	_											
	_												
	_	_											
ype: C= Concentration, D=I	 Conletion		aduced Mate	riv CS=Covered or Co	ated Sand Grain		ation: DI =Do	ore Lining, M=	-Matrix				
ydric Soil Indicators: (App	•	-		-	ateu Sanu Grain	15. LUC		ors for Probl		lydric S	Soils ³ .		_
] Histosol (A1)	iloubic to	o all Litt		Sandy Redox (S5)				2 cm Muck (A		iyane c			
Histic Epipedon (A2)				Stripped Matrix (S6)			_	Red Parent M		Γ F 2)			
Black Histic (A3)				Loamy Mucky Minera	al (F1) (except N	MLRA 1)	_	Very Shallow	•	•	F12)		
Hydrogen Sulfide (A4)				Loamy Gleyed Matrix		ŕ		Other (Explai		-	,		
Depleted Below Dark S	urface (A	\11)		Depleted Matrix (F3)									
Thick Dark Surface (A1	2)			Redox Dark Surface	(F6)								
] Sandy Mucky Mineral (S	31)			Depleted Dark Surface	ce (F7)			ors of hydrop					
] Sandy Gleyed Matrix (S	4)			Redox Depressions ((F8)			and hydrology ss disturbed			it,		
estrictive Layer (if present):												
rpe: Angular ro	ock till pri	<u>sm</u>											
epth (inches): Surface			ism		Hydi	ric Soils Pre	esent?		Yes		No		
epth (inches): <u>Surface</u> emarks: Angular rock rai			ism		Hydi	ric Soils Pre	esent?		Yes		No		
epth (inches): <u>Surface</u> emarks: Angular rock rai	ilroad trad		ism		Hydi	ric Soils Pre	esent?		Yes		No	Ē	_
epth (inches): Surface emarks: Angular rock rai YDROLOGY Vetland Hydrology Indicato	ilroad trad	cks fill pri	check all tha			ric Soils Pre	Seconda	ry Indicators	(2 or mor	e requir		C	
epth (inches): Surface emarks: Angular rock rai YDROLOGY //etland Hydrology Indicator rimary Indicators (minimum of particular) Surface Water (A1)	ilroad trad	cks fill pri		Water-Stained Leave	es (B9)	ric Soils Pre	Seconda	iter-Stained L	(2 or mor eaves (B	e requir		E	
epth (inches): Surface emarks: Angular rock rai YDROLOGY Vetland Hydrology Indicator rimary Indicators (minimum Surface Water (A1) High Water Table (A2)	ilroad trad	cks fill pri	check all tha	Water-Stained Leave (except MLRA 1, 2,	es (B9)	ric Soils Pre	Seconda Wa	ter-Stained L	(2 or more eaves (B)	e requir		E	
Pepth (inches): Surface emarks: Angular rock rai YDROLOGY Tetland Hydrology Indicator rimary Indicators (minimum of the company of the comp	ilroad trad	cks fill pri	check all tha	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	es (B9) 4A, and 4B)	ric Soils Pre	Seconda Wa (MI	ter-Stained L LRA 1, 2, 4A, ainage Patterr	(2 or more eaves (B , and 4B) ns (B10)	e requir 9)		<u> </u>	
YDROLOGY Tetland Hydrology Indicator Timary Indicators (minimum of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ors:	cks fill pri	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	es (B9) 4A, and 4B) s (B13)	ric Soils Pre	Seconda Wa (MI	ter-Stained L LRA 1, 2, 4A, ainage Patterr r-Season Wat	(2 or mor eaves (B: , and 4B) ns (B10) ter Table	e requir 9) (C2)	ed)		
YDROLOGY Yetland Hydrology Indicator rimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	ors:	cks fill pri	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od	es (B9) 4A, and 4B) s (B13) lor (C1)		Seconda Wa (MI) Dra Dry Sat	tter-Stained L LRA 1, 2, 4A, hinage Pattern r-Season Wat turation Visibl	(2 or more eaves (Bi , and 4B) ns (B10) ter Table le on Aeri	e requir 9) (C2) al Imag	ed)		
PYDROLOGY Petland Hydrology Indicator rimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ors: of one rec	cks fill pri	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living		Seconda Wa (MI Dra Dry Sat	tter-Stained L LRA 1, 2, 4A, ainage Patterr -Season Wat turation Visibl comorphic Pos	(2 or moneaves (Br., and 4B)) ns (B10) ter Table le on Aerisition (D2	e requir 9) (C2) al Imag	ed)		
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epth (inches): Surface emarks: Angular rock rai NYDROLOGY Vetland Hydrology Indicator rimary Indicators (minimum of the color) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	ors: of one red	cks fill pri	check all tha	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils	Roots (C3) (C6)	Seconda Wa (MI Dra Dry Sat Gee	ter-Stained L LRA 1, 2, 4A, ainage Pattern -Season Wat turation Visibl comorphic Pos allow Aquitara C-Neutral Tes	(2 or moneeaves (B'), and 4B), ans (B10) ter Table le on Aeristion (D2 d (D3) st (D5)	e requir 9) (C2) al Imago	ed) ery (C9)		
PYDROLOGY Vetland Hydrology Indicator rimary Indicators (minimum of Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B	ors: of one red	cks fill pri	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stresses I	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI	Roots (C3) (C6)	Seconda Wa (MI) Dra Dry Sat Gee Sha	ter-Stained L RA 1, 2, 4A, ainage Pattern Season Wat turation Visibl comorphic Pos allow Aquitaro C-Neutral Tes ised Ant Mount	(2 or more.eaves (B: , and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6)	e requir 9) (C2) al Imago)	ed) ery (C9)		
YDROLOGY Yetland Hydrology Indicator rimary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on A	ors: of one red	cks fill pri	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI	Roots (C3) (C6)	Seconda Wa (MI) Dra Dry Sat Gee Sha	ter-Stained L LRA 1, 2, 4A, ainage Pattern -Season Wat turation Visibl comorphic Pos allow Aquitara C-Neutral Tes	(2 or more.eaves (B: , and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6)	e requir 9) (C2) al Imago)	ed) ery (C9)		
PYDROLOGY Yetland Hydrology Indicator rimary Indicators (minimum of Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B1) Inundation Visible on A1 Sparsely Vegetated Co	ors: of one red	cks fill pri	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stresses I	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI	Roots (C3) (C6)	Seconda Wa (MI) Dra Dry Sat Gee Sha	ter-Stained L RA 1, 2, 4A, ainage Pattern Season Wat turation Visibl comorphic Pos allow Aquitaro C-Neutral Tes ised Ant Mount	(2 or more.eaves (B: , and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6)	e requir 9) (C2) al Imago)	ed) ery (C9)		
PYDROLOGY Vetland Hydrology Indicator rimary Indicators (minimum of the state of t	ors: of one rec	equired; c	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer Recent Iron Reduction Stunted or Stresses I Other (Explain in Res	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI	Roots (C3) (C6)	Seconda Wa (MI) Dra Dry Sat Gee Sha	ter-Stained L RA 1, 2, 4A, ainage Pattern Season Wat turation Visibl comorphic Pos allow Aquitaro C-Neutral Tes ised Ant Mount	(2 or more.eaves (B: , and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6)	e requir 9) (C2) al Imago)	ed) ery (C9)		
emarks: Angular rock rai Angular rock (A1) High Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B1) Inundation Visible on A1 Sparsely Vegetated Cotellad Observations: urface Water Present?	ors: of one red oncave Su	equired; c	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer Recent Iron Reductio Stunted or Stresses I Other (Explain in Rer Depth (inches):	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI	Roots (C3) (C6)	Seconda Wa (MI) Dra Dry Sat Gee Sha	ter-Stained L RA 1, 2, 4A, ainage Pattern Season Wat turation Visibl comorphic Pos allow Aquitaro C-Neutral Tes ised Ant Mount	(2 or more.eaves (B: , and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6)	e requir 9) (C2) al Imago)	ed) ery (C9)		
emarks: Angular rock rai Algal Mator (A3) Algal Mator Crust (B4) Iron Deposits (B5) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B1) Angular rock (B1) Angular rock (B2) Angular rock (B3) Algal Mator Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B1) Angular rock rai Angular rai An	ors: of one rec	equired; c	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer Recent Iron Reduction Stunted or Stresses I Other (Explain in Res	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI	Roots (C3) (C6) R A)	Seconda Wa (MI) Dra Sat Ger Sha FAI	ter-Stained L RA 1, 2, 4A, ainage Pattern Season Wat turation Visibl comorphic Pos allow Aquitaro C-Neutral Tes ised Ant Mount	(2 or more eaves (Br., and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6) mmocks (e requir 9) (C2) al Imago)	ed) ery (C9)		
PyDROLOGY Petland Hydrology Indicator rimary Indicators (minimum of Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B1) Surface Soil Cracks (B2) Inundation Visible on A2 Sparsely Vegetated Coeled Observations: Jurface Water Present?	ors: of one red oncave Su Yes Yes Yes	equired; c	check all that	Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reductio Stunted or Stresses I Other (Explain in Rer Depth (inches): Depth (inches):	es (B9) 4A, and 4B) s (B13) lor (C1) res along Living d Iron (C4) on in Tilled Soils Plants (D1) (LRI marks)	Roots (C3) (C6) R A) Wetla	Seconda Wa (MI) Dra Sat Ger Sha FAI	ter-Stained L LRA 1, 2, 4A, ainage Pattern r-Season Wat turation Visibl omorphic Pos allow Aquitara C-Neutral Tes ised Ant Moul st-Heave Hui	(2 or more eaves (Br., and 4B) ns (B10) ter Table le on Aeri sition (D2 d (D3) st (D5) nds (D6) mmocks (e requir 9) (C2) (al Imago) (LRR A (D7)	ed) ery (C9)		

Project Site:	Sound Transit East Link Extension	on Project		City/Coun	ty: <u>Bellevue/King</u>	Sampling Date:		23, 2013
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	BNSF Northy SPW	
Investigator(s):	C Douglas & J. Pursley				Section, Township, F	Range: <u>S29, T24N, R5</u>		
Landform (hillslope, ter	rrace, etc.): Narrow area adjac	ent to RR Tr	acks Local	relief (conca	ave, convex, none): conca	ave Slo	ope (%): <u>0</u>	0% to 2%
Subregion (LRR):	<u>A</u>	Lat: 47.6	<u>2N</u>		Long: <u>122.18W</u>	Datum:	:	
Soil Map Unit Name:	Kitsap silt loam				NWI	classification: None	Mapped	
Are climatic / hydrologi	ic conditions on the site typical for	this time of y	ear? Ye	es 🛛	No 🔲 (If no, expla	ain in Remarks.)		
Are Vegetation \square ,	Soil □, or Hydrology	☐, signific	antly disturbed	? Are "I	Normal Circumstances" pres	ent? Yes	s 🛛 N	No 🗆
Are Vegetation \square ,	Soil ☐, or Hydrology	☐, natural	y problematic?	(If ne	eded, explain any answers ir	ı Remarks.)		
SUMMARY OF FIN	DINGS – Attach site map sh	nowing san	npling point	locations,	transects, important fe	atures, etc.		
Hydrophytic Vegetation	n Present?	Yes 🛛	No 🗆		· •			
Hydric Soil Present?		Yes 🛛		Is the Samp		Yes	s 🛛 N	No 🗆
Wetland Hydrology Pre	esent?	Yes 🏻	No 🗆	within a We	tiana?			_
				maraial day	alanment leasted to the west	t Matland includes den		and alone
	BNSF Northwest is located adjace ses. Jurisdictional ditch along rail							and slope
VEGETATION – Us	se scientific names of plants		D	1				1
Tree Stratum (Plot size	e: 30 foot radius)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksho	et:		
1. <u>Salix lasiandra</u>		<u>90</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Speci	es		(4)
2					That Are OBL, FACW, or F	AC: <u>3</u>		(A)
3					Total Number of Dominant	6		(D)
4					Species Across All Strata:	<u>6</u>		(B)
50% = <u>1</u> , 20% = <u>0</u>		<u>90</u>	= Total Cover		Percent of Dominant Speci	es ₅₀		(A/D)
Sapling/Shrub Stratum	n (Plot size: 15 foot radius)				That Are OBL, FACW, or F	AC: <u>50</u>		(A/B)
1. Rubus armeniacus	<u> </u>	<u>10</u>	<u>ves</u>	<u>FACU</u>	Prevalence Index worksh	eet:		
2. <u>Sambucus racemo</u>	<u>)sa</u>	<u>10</u>	<u>ves</u>	<u>FACU</u>	Total % Cover	of: Mult	tiply by:	
3					OBL species	x1 =	<u> </u>	_
4					FACW species	x2 =	<u> </u>	-
5					FAC species	x3 =	<u> </u>	_
50% = <u>2</u> , 20% = <u>0</u>		<u>20</u>	= Total Cover		FACU species	x4 =	<u> </u>	=
Herb Stratum (Plot size	e: 3 foot radius)				UPL species	x5 =	= <u></u>	_
1. Athyrium filix-femir	<u>าล</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>	Column Totals:	(A)		(B)
2. Epilobium watsonii	i	<u>5</u>	<u>ves</u>	<u>FACW</u>	Prevale	nce Index = B/A =	_	
3. Equisetum arvense	<u>e</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	Hydrophytic Vegetation I	ndicators:		
4. Juncus effusus	_	<u>25</u>	<u>yes</u>	FACW	☐ 1 – Rapid Test for Hy	drophytic Vegetation		
5. <u>Lemna minor</u>		<u>10</u>	no	OBL				
6. Ludwigia palustris		<u>10</u>	no	OBL	☐ 3 - Prevalence Index	is <3 0 ¹		
7			_		4 Marphalagiaal Ad	aptations ¹ (Provide supp	nortina	
8.						or on a separate sheet)	Jorting	
9.					☐ 5 - Wetland Non-Vas	cular Plants ¹		
10.						ytic Vegetation ¹ (Explair	n)	
11.					— Froblematic Trydropii	ylic vegetation (Explain	11)	
50% = <u>1</u> , 20% = <u>2</u>		100	= Total Cover		¹ Indicators of hydric soil an		ıst	
	Plot size: 3 foot radius)	100	rotal cover		be present, unless disturbe	d or problematic.		
Hedera hibernica	<u> </u>	<u>15</u>	<u>yes</u>	<u>UPL</u>				
2		<u></u>	,	<u></u>	Hydrophytic			
50% = <u>1</u> , 20% = <u>0</u>		<u></u>	= Total Cover		Vegetation	Yes 🛚	No	
	h Stratum 100	10	- I Jiai Juvel		Present?			
% Bare Ground in Her		northa D	ninanaa Taat					
Remarks: 1	00% dominant wetland vegetation	i per me Don	iiiance rest					

nches) Color (mois)	%	Color	r (mois	st) %	Type ¹	Loc ²	Texture		Remar	ks		
<u>0 to 3</u> <u>10YR 3/2</u>		<u>80</u>	<u>10Y</u>	<u>′R 5/1</u>	<u>20</u>	<u>D</u>	<u>M</u>	Silt loam					
3 to 18+ 10YR 4/1		<u>90</u>	<u>10Y</u>	<u>′R 4/4</u>	<u>10</u>	<u>D</u>	<u>M</u>	Sandy loam	w/gravel & cob	<u>bble</u>			
	_	—	_										
	_		_										
	_		_										
	_		_										
	_		_										
rpe: C= Concentration, D:	 Depletion:	n, RM=F	Reduced	Matrix,	, CS=Covered or Co	ated Sand	d Grains. ² Lo	cation: PL=Por	e Lining, M=Matri	x			
dric Soil Indicators: (Ap	plicable	to all Li	RRs, unk	ess ot	herwise noted.)			Indicato	rs for Problemat	ic Hydric	Soils	s³:	
Histosol (A1)				⊠ :	Sandy Redox (S5)			□ 2	cm Muck (A10)				
Histic Epipedon (A2)				□ :	Stripped Matrix (S6)			☐ R	ted Parent Materia	al (TF2)			
Black Histic (A3)				_	Loamy Mucky Minera	al (F1) (e x	xcept MLRA 1)	□ V	ery Shallow Dark	Surface (TF12)	
Hydrogen Sulfide (A4)					Loamy Gleyed Matrix	x (F2)			other (Explain in R	Remarks)			
Depleted Below Dark	Surface (A	411)	D	⊠ ।	Depleted Matrix (F3)								
Thick Dark Surface (A	12)				Redox Dark Surface	. ,		3					
Sandy Mucky Mineral					Depleted Dark Surfa	. ,			rs of hydrophytic nd hydrology mus				
Sandy Gleyed Matrix	-		L		Redox Depressions	(F8)	1	unless	s disturbed or pro	blematic.			
strictive Layer (if prese	it):												
													_
oth (inches):	a with rec	ox feat	ures				Hydric Soils P	resent?	Yes	<u>s</u>		lo	L
pth (inches):	a with rec	dox feati	ures				Hydric Soils P	resent?	Yes	S	r	lo	L
/DROLOGY		dox feati	ures				Hydric Soils P	resent?	Yes	S	r	No	
pth (inches): marks: 1 and 2 chrom /DROLOGY etland Hydrology Indica	ors:						Hydric Soils P					No	
pth (inches): marks: 1 and 2 chrom DROLOGY etland Hydrology Indicat mary Indicators (minimun	ors:		check all			(02)	Hydric Soils P	Secondary	γ Indicators (2 or ι	more requ		lo	
pth (inches): marks: 1 and 2 chrom PROLOGY etland Hydrology Indicat mary Indicators (minimum Surface Water (A1)	ors:		check all	× ×	Water-Stained Leave	. ,		Secondary □ Wate	/ Indicators (2 or i er-Stained Leaves	more requ		lo	
pth (inches): marks: 1 and 2 chrom DROLOGY etland Hydrology Indicat mary Indicators (minimun Surface Water (A1) High Water Table (A2)	ors:		check all		Water-Stained Leave (except MLRA 1, 2,	. ,		Secondary Wate	/ Indicators (2 or reer-Stained Leaves	more requ s (B9)		No	
TDROLOGY Itland Hydrology Indicat mary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	ors:		check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and 4		Secondary Wate (MLF	/ Indicators (2 or i er-Stained Leaves R A 1, 2, 4A, and nage Patterns (B	more requ s (B9) 4B) 10)		No	
TDROLOGY Itland Hydrology Indicat mary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1)	ors: of one re		check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	4A , and 4		Secondary Wate (MLF	y Indicators (2 or ner-Stained Leaves RA 1, 2, 4A, and nage Patterns (B ² Season Water Ta	more requ s (B9) 4B) 10) ble (C2)	rired)		
TDROLOGY Itland Hydrology Indicat mary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (E	ors: of one re		check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc	4A , and 4 s (B13) dor (C1)	4B)	Secondary Wate (MLF Drain Dry-3	/ Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and nage Patterns (B' Season Water Ta tration Visible on A	more requise (B9) 4B) 10) ble (C2) Aerial Ima	rired)		
TDROLOGY Itland Hydrology Indicat mary Indicators (minimun Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	ors: of one re)		check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher	4A , and 4 s (B13) dor (C1) res along	4B) Living Roots (C3)	Secondary Wate (MLF Drain Dry-S Satu Geor	/ Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and mage Patterns (B' Season Water Ta	more requisites (B9) 4B) 10) ble (C2) Aerial Ima (D2)	rired)		
pth (inches): marks: 1 and 2 chrom "DROLOGY etland Hydrology Indicat mary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B Drift Deposits (B3) Algal Mat or Crust (B4)	ors: of one re)		check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc	4A, and 4 s (B13) dor (C1) res along l d Iron (C4	4B) Living Roots (C3)	Secondary Wate (MLF Drain Dry-5 Satu Geor	y Indicators (2 or recr-Stained Leaves RA 1, 2, 4A, and nage Patterns (B' Season Water Ta rration Visible on a morphic Position low Aquitard (D3)	more requ s (B9) 4B) 10) ble (C2) Aerial Ima (D2)	rired)		
pth (inches): marks: 1 and 2 chrom "DROLOGY etland Hydrology Indicat mary Indicators (minimun Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	ors: of one re) 2)		check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	4A, and 4 s (B13) for (C1) res along to d Iron (C4) on in Tilled	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drain Dry-S Satu Geor	/ Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and mage Patterns (B' Season Water Ta	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2)	gery (
Property (inches): Proper	ors: 1 of one re 2) 2) 4)	equired;	check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphel Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drair Dry-5 Satu Geor Shall FAC:	y Indicators (2 or recr-Stained Leaves RA 1, 2, 4A, and nage Patterns (B' Season Water Tairation Visible on morphic Position low Aquitard (D3)-Neutral Test (D5	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2))	gery (
pth (inches): marks: 1 and 2 chrom PDROLOGY Paland Hydrology Indicat mary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (ors: n of one re) 2) 4) Aerial Ima	equired;	check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drair Dry-5 Satu Geor Shall FAC: Raise	y Indicators (2 or ner-Stained Leaves RA 1, 2, 4A, and nage Patterns (Baseason Water Tairation Visible on amorphic Position low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (I	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2))	gery (
pth (inches): marks: 1 and 2 chrom "DROLOGY etland Hydrology Indicat mary Indicators (minimun Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4 Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated C	ors: n of one re) 2) 4) Aerial Ima	equired;	check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drair Dry-5 Satu Geor Shall FAC: Raise	y Indicators (2 or ner-Stained Leaves RA 1, 2, 4A, and nage Patterns (Baseason Water Tairation Visible on amorphic Position low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (I	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2))	gery (
pth (inches): marks: 1 and 2 chrom properties of the properties	ors: n of one re) 2) 4) Aerial Ima	equired;	check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drair Dry-5 Satu Geor Shall FAC: Raise	y Indicators (2 or ner-Stained Leaves RA 1, 2, 4A, and nage Patterns (Baseason Water Tairation Visible on amorphic Position low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (I	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2))	gery (
pth (inches): marks: 1 and 2 chrom /DROLOGY etland Hydrology Indicat mary Indicators (minimun Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B- Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Co eld Observations: rface Water Present?	ors: of one re) 2) 4) Aerial Ima	equired; agery (B Surface (check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Octo Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Res	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3) 4) d Soils (C6) 1) (LRR A)	Secondary Wate (MLF Drair Dry-5 Satu Geor Shall FAC: Raise	y Indicators (2 or ner-Stained Leaves RA 1, 2, 4A, and nage Patterns (Baseason Water Tairation Visible on amorphic Position low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (I	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2))	gery (
Property (inches): Proper	ors: of one re) 2) 4) Aerial Ima	equired; agery (B	check all		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Red Depth (inches):	4A, and 4 s (B13) for (C1) res along id fron (C4 on in Tilleo Plants (D* marks)	4B) Living Roots (C3) 4) d Soils (C6) 1) (LRR A)	Secondary Wate (MLF Drair Dry-5 Satu Geor Shall FAC: Raise	/ Indicators (2 or ner-Stained Leaves RA 1, 2, 4A, and nage Patterns (B' Season Water Tairation Visible on amorphic Position low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (It-Heave Hummod	more reques (B9) 4B) 10) ble (C2) Aerial Ima (D2))	gery ((C9)	

Project/Site: Operations & Maintenance Satellite F.	acility	City/County:	Bellevue/k	
Applicant/Own Sound Transit				State: WA Sampling Point: SP 1 wetl E2-1
Investigator(s): Torrey Luiting		_		, Range: Section 28, 25North, 5East
Landform (hillslope, terrace, etc.): developed flat				e, convex, none): concave Slope (%):
Subregion (LRINorthwest Forests and Coast (LRR A)	-			7.629275 Long: -122.183324 Datum:
Soil Map Unit Name: KpD – Kitsap silt loam, 15 to 3				NWI Classification: none
Are climatic / hydrologic conditions on the site typical		-	_	
Are Vegetation, Soil, or Hydrology				
Are Vegetation, Soil, or Hydrology		naturally pr	oblematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site m	ap show	ing sampl	ing point	locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes x No)	Is the S	ampled Are	9
Hydric Soil Present? Yes x No)		ampied Are a Wetland?	YAS Y NO
Wetland Hydrology Present? Yes x No)			
Remarks: Sampled northern arm of wetland E2-1; we	etiand not d	elineated du	ве то ргорегт	y access restrictions
VEGETATION				
	Absolute			Dominance Test worksheet:
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species
Populus balsamifera	30	Х	FAC	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
15 = 50% of total cover Total Cover:	30			That Are OBL, FACW, or FAC: 83% (A/B)
6 = 20% ot total cover (trees)				
Shrub Stratum				Prevalence Index Worksheet:
1. Spiraea douglasii	10		FACW	Total % Cover of: Multiply by:
2. Rubus armeniacus		Х	FACU	OBL species x1 = 0
3. Cytisus scoparius	2		NL=UPL	FACW speciesx2 =0
4 5.				FAC species x3 = 0 FACU species
	17	-		· — — — — — — — — — — — — — — — — — — —
8.5 = 50% of total cover Total Cover: Herb Stratum 3.4 = 20% of total cover (shrubs)	17			UPL speciesx5 =0 Column Totals: 0 (A) 0 (B)
1. Juncus effusus	40	v	FACW	Prevalence Index = B/A = #DIV/0!
Phalaris arundinacea	30		FACW	Trevalence index = B/A = #BIVIO:
3 Holeus lanatus	20		FAC	Hydrophytic Vegetation Indicators:
4. Rumex crispus	5		FAC	1 - Rapid Test for Hydrophytic Vegetation
5. Galium spp.	trace	-		X 2 - Dominance Test is >50%
6. Daucus carota	trace		FACU	##### 3 - Prevalence Index is ≤3.0 ¹
7.				4 - Morphological Adaptation1 (Provide supporting
8.				data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				
47.5 = 50% of total cover Total Cover:	95			1
19 = 20% of total cover (herbs)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum				be present, unless disturbed of problematic.
1Total Cover:	0			Hydrophytic
Total Cover: % Bare Ground in Herb Stratum 5 %			0	Vegetation Present? Yes x No
				Present? Yes x No us bifrons, but that name is not reflected in the Lichvar 2012
National Wetland Plant list for delineations	e Fiula OI N	vorur Amenc	a io be KUD	us biirons, but triat frame is not reflected in the Lichval 2012

SOIL

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

Ponth

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

Profile Des	scription: (Describe	to the dept	h needed to doc	ument t	he indicato	r or co	onfirm the absence	of indicators.)		
Depth	Matrix		Red	ox Feat	ures		_			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	·	Remarks	
0-8	2.5Y 3/2	100					sandy loam	·		
8-16+	Gley1 4/5GY	100					g sandy loam	·		
								·		
								·		
¹ Type: C=0	Concentration, D=Dep	etion, RM=	Reduced Matrix, C	CS=Cov	ered or Coa	ted Sa	nd Grains. ² Locatio	n: PL=Pore Lining	, M=Matrix.	
Hydric Soi	I Indicators: (Applica	able to all I	RRs. unless oth	erwise	noted.)		Indicators for P	roblematic Hydric	: Soils ³ .	
-	sol (A1)		Sandy R		-			2 cm Muck (A10)		
	Epipedon (A2)		Stripped					Red Parent Materia	al (TF2)	
	Histic (A3)				lineral (F1) (ovcon		Other (Explain in R		
	gen Sulfide (A4)				Matrix (F2)	СХССР		ery Shallow Dark \$	•	2)
	ted Below Dark Surfac	·ο (Λ11)	Depleted				v	ery Shallow Dark C	Juliace (11 1	۷)
	Dark Surface (A12)	C (ATT)			face (F6)		3Indicators	of hydrophytic veg	otation and	
	/ Muck Mineral (S1)				ace (F6) Surface (F7)			hydrology must be		
	/ gleyed Matrix (S4)		Redox D					disturbed or proble		
	Layer (if present):		Redux L	epiessi	ulis (Fo)	1	uniess	disturbed of proble	illauc.	
	Layer (ii present).									
Type: Depth (inch	166).					١,	lydric Soil Present?	Yes	v	No
	yed matrix of at least 6						-			
HYDROLOG'	Y									
Wetland H	ydrology Indicators:									
Primary Ind	licators (any one indica	ator is suffic	ient)				<u>s</u>	econdary Indicator	s (2 or more	required)
Surfac	ce Water (A1)		Water-S	tained L	.eaves (B9)	(exce	•	Water-Stained Lea	ıves (B9) (ML	_RA 1, 2,
x High \	Water Table (A2)		MLRA	1, 2, 4	A and 4B)			4A and 4B)		
x Satura	ation (A3)		Salt Cru	st (B11)				Drainage Patterns	(B10)	
Water	Marks (B1)		Aquatic	Inverteb	rates (B13)			Dry-Season Water	Table (C2)	
Sedim	nent Deposits (B2)		Hydroge	n Sulfid	e Odor (C1)		;	Saturation Visible	on Aerial Ima	gery (C9)
Drift D	Deposits (B3)		Oxidized	l Rhizos	pheres alon	g Livir	g Roots (C3)	Geomorphic Positi	on (D2)	
Algal I	Mat or Crust (B4)		Presenc	e of Red	duced Iron (C4)		Shallow Aquitard (I	D3)	
Iron D	eposits (B5)		Recent I	ron Red	luction in Pl	owed S	Soils (C6)	FAC-Neutral Test ((D5)	
Surfac	ce Soil Cracks (B6)		Stunted	or Stres	sed Plants	(D1) (L	.RR A)	Raised Ant Mound	s (D6) (LRR	A)
Inunda	ation Visible on Aerial	Imagery (B	7) Other (E	xplain ir	n Remarks)			Frost-Heave Humr	nocks (D7)	
Spars	ely Vegetated Concav	e Surface (B8)							
Field Obse	ervations:									
	ater Present? Yes			(inches						
Water table Saturation I				(inches):): surface		Wetland Hydrolo	ary Present?	Yes x	No
	apillary fringe)	<u>~</u> "	Верин	(11101100). Juniuoc		Welland Hydrole	y ricociii.	100 <u>x</u>	
•	orded Data (stream ga	auge, monit	oring well, aerial p	hotos, p	revious ins	oection	ns), if available:			
Remarks:										
vernanto.										

Project/Site: Operations & Maintenance Satellite F	acility	City/County:	Bellevue/k	King County	У	Sampling Date: 12/15/201
Applicant/Own Sound Transit					State: WA	Sampling Point: SP 2 wetl E2-1
Investigator(s): Torrey Luiting		Section	n, Township	, Range:	Section 28, 25North	, 5East
Landform (hillslope, terrace, etc.): <u>developed flat</u>		_ Local re	elief (concav	e, convex,	none): concave	Slope (%):
Subregion (LRINorthwest Forests and Coast (LRR A	<u>)</u> Lat:				Long:	
Soil Map Unit Name: KpD – Kitsap silt loam, 15 to 3					IWI Classification: _ı	none
Are climatic / hydrologic conditions on the site typical	I for this time	e of year?	Yes		No(If no, explain in Remarks)
Are Vegetation, Soil, or Hydrology		significantly	disturbed?	Are "No	ormal Circumstance	s" Present? Yes x No
Are Vegetation, Soil, or Hydrology		naturally pr	oblematic?	(If need	ded, explain any ans	wers in Remarks.)
SUMMARY OF FINDINGS – Attach site m	ap showi	ing sampl	ing point	location	s, transects, im	portant features, etc.
Hydrophytic Vegetation Present? Yes x No.	D	la tha C	I A	_		
Hydric Soil Present? Yes x No.	D		ampled Are a Wetland?		Yes x	No
Wetland Hydrology Present? Yes <u>x</u> No	<u> </u>					
Remarks: Sampled northern arm of wetland E2-1, no	orth of samp	le plot 1; we	etland not de	elineated d	ue to property acces	s restrictions
VEGETATION						
	Absolute	Dominant	Indicator	Dominar	nce Test worksheet	··
<u>Tree Stratum</u> (Use scientific names.)	% Cover			Number	of Dominant Species OBL, FACW, or FA	3 ^.
1				Total Nu	mber of Dominant	(A)
3.			· 		Across All Strata:	4 (B)
4.			·	,		, , ,
0 = 50% of total cover Total Cover	. 0		· 		of Dominant Species OBL, FACW, or FA	
0 = 20% of total cover (trees)	. 0			THAT / IIC	OBE, TAOW, OF TA	(,,,,)
Shrub Stratum				Prevaler	ce Index Workshe	et:
Crataegus douglasii	15	X	FAC		al % Cover of:	Multiply by:
Rubus armeniacus		х	FACU	OBL spe		<1 = 0
3. Cytisus scoparius	5		NL=UPL	FACW s	pecies	<2 = 0
4.				FAC spe	·	
5.				FACU sp		
17.5 = 50% of total cover Total Cover	35			UPL spec	cies	<5 = 0
Herb Stratum 7 = 20% ot total cover (shrubs)				Column	Γotals: 0	(A) 0 (B)
Juncus effusus	30	Х	FACW	Prevale	ence Index = B/A = _	#DIV/0!
Phalaris arundinacea	20	Х	FACW			
3. Galium spp.	trace				ytic Vegetation Ind	
4			· 		•	ydrophytic Vegetation
5			· 	l ——	2 - Dominance Test	
6.		-		l ——	3 - Prevalence Inde	
7						daptation1 (Provide supporting
8			· 			on a separate sheet)
9.			·		5 - Wetland Non-Va	· ·
10.			·		Problematic Hydrop	hytic Vegetation ¹ (Explain)
11	50					
	50			1Indicat-	re of budrio asil as d	wotland hydrology must
<u>10</u> = 20% ot total cover (herbs) Woody Vine Stratum					rs of nyaric soil and nt, unless disturbed	wetland hydrology must or problematic.
1.			·			- p
Total Cover	. 0			Hydroph	•	
% Bare Ground in Herb Stratum 35 %			15	Vegetati Present?		res x No
Remarks: Rubus armeniacus recently renamed by the						
National Wetland Plant list for delineations; biotic cru						A.S. COLOGO III are Element 2012

SOIL Sampling Point: SP-2

Profile Des	cription: (Describe t	o the de	pth needed to doc	ument th	ne indicat	or or co	onfirm the absen	ce of indicators.)		
Depth	Matrix		Red	lox Featu	ires					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	 Texture		Remarks	
0-7	2.5Y 3/2	100					sandy loam			
7-16+	2.5Y 4/2	95	10YR 4/6	5	С	m	sandy loam	common; med	ium; promine	nt redox
									•	
							_	-		
							_	-		
							_	-		
¹ Type: C=0	Concentration, D=Depl	etion. RM	I=Reduced Matrix.	CS=Cove	red or Co	ated Sa	nd Grains. ² Loca	tion: PL=Pore Linin	g. M=Matrix.	
71		,	,						J ,	
Hydric Soil	Indicators: (Applica	ble to al	l LRRs, unless oth	erwise n	oted.)		Indicators for	r Problematic Hydr	ic Soils³:	
Histos	ol (A1)		Sandy F	Redox (S5	5)			2 cm Muck (A10)		
Histic	Epipedon (A2)		Stripped	l Matrix (S	S6)			Red Parent Mate	rial (TF2)	
Black	Histic (A3)		Loamy I	Mucky Mii	neral (F1)	(excep	t MLRA 1)	Other (Explain in	Remarks)	
Hydro	gen Sulfide (A4)		Loamy (Gleyed Ma	atrix (F2))		Very Shallow Dark	Surface (TF	12)
x Deple	ted Below Dark Surfac	e (A11)	Deplete	d Matrix (F3)					
Thick	Dark Surface (A12)			oark Surfa			³ Indicato	rs of hydrophytic ve	getation and	
	Muck Mineral (S1)		Deplete	d Dark Su	urface (F7	7)		nd hydrology must be	-	
	gleyed Matrix (S4)			Depressio		,		ss disturbed or prob		
	Layer (if present):				,			<u> </u>		
	Layor (ii procent):									
Type: Depth (inch	P6).					١,	lydric Soil Presei	nt? Ye	s x	No
	oleted matrix of at leas		. 0. 1		10: 1					
chroma of 2 c				J			, . ,			
HYDROLOG'	Y ydrology Indicators:									
	= -	ntor is suf	ficient)					Secondary Indicate	ore (2 or more	a required)
	icators (any one indica	101 15 501		toined La	anua (DO) (avaa		Secondary Indicate		
	ce Water (A1)				eaves (B9		<u> </u>	_ Water-Stained Le	eaves (B9) (N	ILRA 1, 2,
	Vater Table (A2)				and 4B)			_ 4A and 4B)	(D40)	
	ation (A3)			st (B11)				_ Drainage Pattern	` '	
	Marks (B1)				ates (B13	•		_ Dry-Season Wate	, ,	
	ent Deposits (B2)				Odor (C1		<u> </u>	_ Saturation Visible		agery (C9)
	eposits (B3)					J	g Roots (C3)	_ Geomorphic Posi		
	Mat or Crust (B4)				uced Iron	` '		Shallow Aquitard	. ,	
	eposits (B5)				uction in F		` ′ —	FAC-Neutral Test		
	ce Soil Cracks (B6)			or Stress	sed Plants	s (D1) (L	.RR A)	Raised Ant Moun	. , .	t A)
Inunda	ation Visible on Aerial	Imagery	(B7) Other (E	xplain in	Remarks)		Frost-Heave Hum	nmocks (D7)	
Spars	ely Vegetated Concav	e Surface	e (B8)							
Field Obse	rvations:									
	ater Present? Yes			(inches):						
Water table				(inches):		8	Watland Hydr	ology Procent?	Voc v	No
Saturation f	Present? Yes apillary fringe)	<u>*</u>	No Depth	(inches):	Surface		welland nyun	ology Present?	Yes <u>x</u>	_No
	orded Data (stream ga	uge. mo	nitoring well, aerial r	photos, pr	revious in	spection	 ns). if available:			
							,,			
Remarks:		-			_					

Project/Site: Operations & Maintenance Satellite F	acility	City/County	: Bellevue/K	ing Count	ty	Samp	ling Date:	12/15/2014
Applicant/Own(Sound Transit					State: WA	Samp	ling Point: SP	3 upland
Investigator(s): Torrey Luiting		Sectio	n, Township	, Range:	Section 28, 25N	orth, 5East		
Landform (hillslope, terrace, etc.): developed flat		_ Local re	elief (concave	e, convex	, none): concave		Slope (%	b):
Subregion (LRINorthwest Forests and Coast (LRR A) Lat:		47	.629275	Long:	-122.18	3324 Datu	m:
Soil Map Unit Name: SK – Seattle Muck					NWI Classificatio	n: none		
Are climatic / hydrologic conditions on the site typical	for this time	e of year?	Yes		No	(If no, ex	plain in Rema	rks)
Are Vegetation, Soil, or Hydrology		significantly	/ disturbed?	Are "N	ormal Circumsta	nces" Prese	nt? Yes x	No
Are Vegetation, Soil, or Hydrology					ded, explain any			
SUMMARY OF FINDINGS – Attach site m					ns, transects,	importan	t features, o	etc.
Hydrophytic Vegetation Present? Yes x No)							
· · · · · · · · · · · · · · · · · · ·	X		ampled Area a Wetland?	а	Yes	No x		
Wetland Hydrology Present? Yes No	X	Within	a welland:					
Remarks: Sampled eastern likely upland edge of wel					•			
VEGETATION								
	Absolute			Domina	nce Test worksl	neet:		
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?		of Dominant Spe			
1. Populus balsamifera	50	Х	FAC	That Are	OBL, FACW, or	FAC:	3	(A)
2.				Total Nu	mber of Dominar	nt		
3				Species	Across All Strata	ı: 	4	(B)
4.				Percent	of Dominant Spe	cies		
25 = 50% of total cover Total Cover:	50				OBL, FACW, or		75%	(A/B)
10 = 20% ot total cover (trees)								
Shrub Stratum				Prevale	nce Index Works	sheet:		
1. Rubus armeniacus	20	Х	FACU	Tot	al % Cover of:		Multiply by:	
2				OBL spe	ecies	x1 =	0	
3				FACW s	pecies	x2 =	0	
4				FAC spe	ecies	x3 =	0	
5				FACU s	pecies	x4 =	0	
10 = 50% of total cover Total Cover:	20			UPL spe		x5 =	0	
Herb Stratum 4 = 20% ot total cover (shrubs)				Column	Totals: 0	(A)	0	(B)
1. Juncus effusus	10		FACW	Preval	ence Index = B/A	\ =	#DIV/0!	
2. Phalaris arundinacea		Х	FACW					
3. Agrostis stolonifera	35	Х	FAC	Hydropl	nytic Vegetation			
4					1 - Rapid Test fo		-	
5				X	2 - Dominance			
â				#####	3 - Prevalence I			
7					4 - Morphologica	•	•	pporting
8					data in Remarks			
9					5 - Wetland Nor			
10					Problematic Hyd	drophytic Ve	getation' (Exp	lain)
11								
= 50% of total cover Total Cover:	80			1.				
16 = 20% of total cover (herbs)					ors of hydric soil a			st
Woody Vine Stratum		-		be prese	ent, unless disturb	bea or proble	andlic.	
1				Hydropl	•			
Total Cover:			_	Vegetat				
	Cover of Bi		0	Present		Yes x	No	
Remarks: Rubus armeniacus recently renamed by th National Wetland Plant list for delineations	e ⊦iora of N	vortn Americ	a to be Rubi	us bitrons	, but that name is	s not reflecte	a in the Lichva	ar 2012

SOIL Sampling Point: SP-3

epth	Matrix		Red	lox Featu	res					
rches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	- Texture		Remarks	
14+	2.5Y 3/2		YR 4/6	1	C	m	gravelly sandy	few, fine, pror		
							<u> </u>			
ype: C=0	Concentration, D=Dep	letion, RM=R	educed Matrix,	CS=Cove	red or Co	ated Sar	d Grains. ² Locatio	n: PL=Pore Lini	ng, M=Matrix	.
dric Soi	I Indicators: (Applica	able to all LF	RRs, unless oth	erwise n	oted.)		Indicators for P	roblematic Hyd	ric Soils³:	
_ Histos	sol (A1)		Sandy F	Redox (S5	5)			2 cm Muck (A10)	
Histic	Epipedon (A2)		Stripped	Matrix (S	36)			Red Parent Mate	erial (TF2)	
Black	Histic (A3)		Loamy I	∕lucky Mir	neral (F1)	(except	MLRA 1)	Other (Explain ir	n Remarks)	
Hydro	gen Sulfide (A4)		Loamy (Sleyed Ma	atrix (F2)		V	ery Shallow Dar	k Surface (TI	F12)
Deple	eted Below Dark Surfac	ce (A11)	Deplete	d Matrix (F3)					
_ Thick	Dark Surface (A12)		Redox [ark Surfa	ace (F6)		³ Indicators	of hydrophytic ve	egetation and	t
Sandy	y Muck Mineral (S1)		Deplete	d Dark Su	ırface (F7)	wetland I	hydrology must b	oe present,	
Sandy	y gleyed Matrix (S4)		Redox [epressio	ns (F8)		unless	disturbed or pro	blematic.	
estrictive	Layer (if present):									
/pe:										
epth (inch	nes): dox does not occur in	at least 5% to	 o meet criteria fo	r F6 redo	ox dark su		ydric Soil Present?	? Ye	es	No <u>x</u>
epth (inch narks: Re	dox does not occur in	at least 5% to	 o meet criteria fo	r F6 redo	ox dark su		ydric Soil Present?	? Ye	es	No <u>x</u>
PROLOG	dox does not occur in Y ydrology Indicators:			r F6 redo	ox dark su					
epth (inch narks: Re PROLOG etland H imary Ind	dox does not occur in Y ydrology Indicators: dicators (any one indicators)		ent)			rface	<u>s</u>	econdary Indica	tors (2 or mo	re required
ROLOG etland H imary Ind	Y Vadrology Indicators: dicators (any one indicators (A1)		ent) Water-S	itained Le	eaves (B9	rface	<u>s</u>	econdary Indica Water-Stained L	tors (2 or mo	re required
pth (inch arks: Re ROLOG etland H mary Ind Surfac High \	Y ydrology Indicators: dicators (any one indicators (A1) Water Table (A2)		ent) Water-S MLRA	itained Le		rface		econdary Indica Water-Stained L 4A and 4B)	tors (2 or mo eaves (B9) (l	re required
ROLOG etland H imary Ind Surfac High \ Satura	Y ydrology Indicators: dicators (any one indicators (A1) Water Table (A2) ation (A3)		ent) Water-S MLR/	itained Le A 1, 2, 4A st (B11)	eaves (B9 a and 4B)	rface	<u>s</u>	econdary Indica Water-Stained L 4A and 4B) Drainage Patterr	tors (2 or mo eaves (B9) (I	re required
ROLOG etland H imary Ind Surfac High \ Satura Water	Y Vydrology Indicators: dicators (any one indicators (A1) Water Table (A2) ation (A3) r Marks (B1)		ent) Water-S MLR/ Salt Cru Aquatic	itained Le \ 1, 2, 4A st (B11) Invertebra	eaves (B9 a and 4B) ates (B13	rface) (excep	s	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Wat	tors (2 or mo eaves (B9) (l ns (B10) ter Table (C2	re required MLRA 1, 2
PROLOGI etland H imary Ind Surfac High \ Satura Water Sedim	Y ydrology Indicators: dicators (any one indicators (A1) Water Table (A2) ation (A3) r Marks (B1) ment Deposits (B2)		ent) Water-S MLR/ Salt Cru Aquatic Hydroge	stained Le A 1, 2, 4A st (B11) Invertebra	eaves (B9 and 4B) ates (B13	rface) (excep	s	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Water Saturation Visibl	tors (2 or mo eaves (B9) (l ns (B10) ter Table (C2 e on Aerial Ir	re required MLRA 1, 2
ROLOG etland H imary Ind Surfac High \ Satura Water Sedim Drift D	Y ydrology Indicators: dicators (any one indicators (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3)		ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized	itained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp	eaves (B9 and 4B) ates (B13 Odor (C1	rface) (excep)) ng Living	S t	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Water Saturation Visibl Geomorphic Pos	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2 e on Aerial Instition (D2)	re required MLRA 1, 2
PROLOG etland H imary Ind Surfac High \ Satura Water Sedim Drift E Algal	Y ydrology Indicators: dicators (any one indicators (A1) Water Table (A2) ation (A3) r Marks (B1) ment Deposits (B2) Deposits (B3) Mat or Crust (B4)		ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presence	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron	rface) (excep) ng Living (C4)	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Wai Saturation Visibl Geomorphic Pos Shallow Aquitaro	tors (2 or mo eaves (B9) (l ns (B10) ter Table (C2 e on Aerial Ir sition (D2)	re required MLRA 1, 2
DROLOG Vetland H rimary Ind Surfac High V Satura Water Sedim Drift D Algal	Y Vydrology Indicators: dicators (any one indicators (A1) Water Table (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5)		ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presend Recent	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu fron Redu	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in F	rface) (excep) ng Living (C4) llowed Science	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitaro	tors (2 or mo leaves (B9) (leaves (B10)) ter Table (C2) e on Aerial Instition (D2) d (D3) st (D5)	re required MLRA 1, 2
PROLOGI Port of the property o	Y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6)	ator is sufficie	ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presenc Recent Stunted	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu iron Redu or Stress	eaves (B9 and 4B) ates (B13 c Odor (C1 bheres alo uced Iron uction in P	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Wai Saturation Visibl Geomorphic Pos Shallow Aquitaro	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2 e on Aerial Instition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2
PROLOGO PROLOGO PROLOGO PROLOGO PROLOGO PROLOGO PROLOGO PROLOGO PROLOGO Surfac Surfac Sedim Prift D Algal Iron D Surfac Inund	Y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial	ator is sufficie	ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu iron Redu or Stress	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in F	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Water Saturation Visibl Geomorphic Pos Shallow Aquitard FAC-Neutral Tes Raised Ant Mou	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2 e on Aerial Instition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2
DROLOG' Vetland H rimary Ind Satura Water Sedim Drift E Algal Iron D Surfac Surfac Surfac Sedim Drift E Surfac Surfac	Y Yydrology Indicators: dicators (any one indicators (any one indicators (any one indicators (A2) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial sely Vegetated Concav	ator is sufficie	ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidized Presend Recent Stunted Other (E	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu iron Redu or Stress	eaves (B9 and 4B) ates (B13 c Odor (C1 bheres alo uced Iron uction in P	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Water Saturation Visibl Geomorphic Pos Shallow Aquitard FAC-Neutral Tes Raised Ant Mou	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2 e on Aerial Instition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2 2) magery (CS
PROLOGY Petland H rimary Ind Satura Water Sedim Drift E Algal Iron D Surfac Inund Spars	Y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) ce Soil Cracks (B6) ation Visible on Aerial	ator is sufficient in the suff	ent) — Water-S MLR/ — Salt Cru — Aquatic — Hydroge — Oxidizer — Presenc — Recent — Stunted) — Other (E	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches):	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in P sed Plants Remarks	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Water Saturation Visibl Geomorphic Pos Shallow Aquitard FAC-Neutral Tes Raised Ant Mou	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2 e on Aerial Instition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2 2) magery (CS
PROLOGY Petland H rimary Ind Surfac High V Satura Water Sedim Drift E Algal Iron D Surfac Inund Spars Feld Obse	y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators (any one indicators (A3)) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) De Soil Cracks (B6) ation Visible on Aerial (B4) Deposits (B5) Determine the property (B4) Deposits (B5) Deposits (B5) Deposits (B5) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B7) Deposits (B8) Deposits (B8	ator is sufficient in sufficie	Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches): (inches):	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in P sed Plants Remarks	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Patterr Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitaro FAC-Neutral Tes Raised Ant Moul	tors (2 or mo leaves (B9) (Ins (B10) ter Table (C2) e on Aerial Insition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2 The magery (C9 RA)
PROLOGY Petland H rimary Ind Surfac High V Satura Water Sedim Drift E Algal Iron D Surfac Inund Spars Feld Obse	y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators (any one indicators (A3)) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) Deposits (B5) Deposits (B5) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B7) Deposits (B8) Depo	ator is sufficient in sufficie	Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches):	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in P sed Plants Remarks	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Patterr Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitaro FAC-Neutral Tes Raised Ant Moul	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2 e on Aerial Instition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2 2) magery (CS
PROLOGY Petland H rimary Ind Surfac High V Satura Water Sedim Drift E Algal Iron D Surfac Inund Spars Feld Obse	y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators (any one indicators (A3)) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) De Soil Cracks (B6) ation Visible on Aerial (B4) Deposits (B5) Determine the property (B4) Deposits (B5) Deposits (B5) Deposits (B5) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B7) Deposits (B8) Deposits (B8	ator is sufficient in sufficie	Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S Water-S	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches): (inches):	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in P sed Plants Remarks	rface) (excep)) ng Living (C4) llowed So (D1) (LI	g Roots (C3)	econdary Indica Water-Stained L 4A and 4B) Drainage Patterr Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitaro FAC-Neutral Tes Raised Ant Moul	tors (2 or mo leaves (B9) (Ins (B10) ter Table (C2) e on Aerial Insition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2 The magery (CS
DROLOG' Vetland H rimary Ind Surfac High V Satura Water Sedim Drift E Algal Iron D Surface Inund: Spars Vetla Obse	y ydrology Indicators: dicators (any one indicators (any one indicators (any one indicators (any one indicators (A3)) ation (A3) r Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) Deposits (B5) Deposits (B5) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B7) Deposits (B8) Depo	Imagery (B7)	Water-S Water-S Water-S Water-S	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches): (inches):	eaves (B9 and 4B) ates (B13 Odor (C1 oheres alo uced Iron uction in P sed Plants Remarks	rface) (excep) ng Living (C4) lowed Sc (D1) (Li	g Roots (C3) poils (C6) RR A) Wetland Hydrold	econdary Indica Water-Stained L 4A and 4B) Drainage Patterr Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitaro FAC-Neutral Tes Raised Ant Moul	tors (2 or mo leaves (B9) (Ins (B10) ter Table (C2) e on Aerial Insition (D2) d (D3) st (D5) nds (D6) (LR	re required MLRA 1, 2 The magery (CS
PROLOGY Petland H rimary Ind Surfac High V Satura Water Sedim Drift E Algal Iron D Surface Inund Spars Feld Obse urface Wa vater table aturation I ncludes ca	y ydrology Indicators: dicators (any one indicators (any one indi	Imagery (B7) Le Surface (B	ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidizer Presenc Recent Stunted Other (E 8) O x Depth Depth ring well, aerial p	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches): (inches):	eaves (B9 and 4B) ates (B13 c Odor (C1 cheres alo uced Iron uction in P sed Plants Remarks) (excep) ng Living (C4) lowed So (D1) (Li	g Roots (C3) poils (C6) RR A) Wetland Hydrolc s), if available:	Secondary Indical Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitard FAC-Neutral Tes Raised Ant Moul Frost-Heave Hul Dry Present?	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2) e on Aerial Insition (D2) d (D3) st (D5) nds (D6) (LR mmocks (D7)	re required MLRA 1, 2 The magery (CS RA)
PROLOGY Petland H rimary Ind Surfac High V Satura Water Sedim Drift E Algal Iron D Surface Inund Spars Feld Obse urface Wa vater table aturation I ncludes ca	y ydrology Indicators: dicators (any one indicators (any one indi	Imagery (B7) Le Surface (B	ent) Water-S MLR/ Salt Cru Aquatic Hydroge Oxidizer Presenc Recent Stunted Other (E 8) O x Depth Depth ring well, aerial p	stained Le A 1, 2, 4A st (B11) Invertebra en Sulfide d Rhizosp e of Redu or Stress explain in (inches): (inches):	eaves (B9 and 4B) ates (B13 c Odor (C1 cheres alo uced Iron uction in P sed Plants Remarks) (excep) ng Living (C4) lowed So (D1) (Li	g Roots (C3) poils (C6) RR A) Wetland Hydrolc s), if available:	Secondary Indical Water-Stained L 4A and 4B) Drainage Pattern Dry-Season Wat Saturation Visibl Geomorphic Pos Shallow Aquitard FAC-Neutral Tes Raised Ant Moul Frost-Heave Hul Dry Present?	tors (2 or mo eaves (B9) (Ins (B10) ter Table (C2) e on Aerial Insition (D2) d (D3) st (D5) nds (D6) (LR mmocks (D7)	re required MLRA 1, 2 The magery (CS RA)

Project Site:	Sound Transit East Link Extens	ion Project			City/Coun	nty: <u>Bellevue/King</u>	S	Sampling Date:		15, 2	013
Applicant/Owner:	Sound Transit					Stat	e: <u>WA</u> S	Sampling Point:	BNS Nort		SPU
Investigator(s):	C Douglas & J. Pursley					Section, Tow	nship, Range	: <u>S29, T24N, R5</u>			
Landform (hillslope, te	errace, etc.): <u>Narrow area betv</u>	veen develop	<u>oment</u>	Loca	al relief (conc	ave, convex, none):	concave	Slo	pe (%):	<u>0% t</u>	<u>o 2%</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	<u>62N</u>			Long: <u>122.18W</u>		Datum:			
Soil Map Unit Name:	Kitsap silt loam						NWI classif	ication: None	<u>Mapped</u>		
Are climatic / hydrolog	ic conditions on the site typical fo	r this time of	year?	Υ	es 🛚	No ☐ (If n	io, explain in F	Remarks.)			
Are Vegetation		□, signifi	•			Normal Circumstance		Yes	\boxtimes	No	
Are Vegetation	, Soil □, or Hydrology	☐, natura	ally prob	lematic'	? (If ne	eeded, explain any an	swers in Rem	arks.)			
SUMMARY OF FIN	IDINGS – Attach site map s	howing sa	mpling	point	locations,	, transects, impor	tant feature	es, etc.			
Hydrophytic Vegetatio	n Present?	Yes 🛭	■ No		l= 4b = 0====	-ll A					
Hydric Soil Present?		Yes [No		Is the Samp within a We			Yes		No	\boxtimes
Wetland Hydrology Pr	esent?	Yes [No	\boxtimes							
depression	BNSF Northeast is located in narr on with culverts at both ends that a ncluded standing water at the time	are connecte	d to oth	er wetla	inds in the ar	ea. Wetland includes	depressional	I HGM class. The	majority	of the	
VEGETATION - U	se scientific names of plant	s									
Tree Stratum (Plot siz	e: 30 foot radius)	Absolute <u>% Cover</u>	Domii Speci		Indicator Status	Dominance Test V	Vorksheet:				
 Populus trichocary 	<u>oa</u>	<u>90</u>	<u>yes</u>		<u>FAC</u>	Number of Domina That Are OBL, FAC		<u>2</u>			(A)
3					<u> </u>	Total Number of Do		<u>3</u>			(B)
4						Species Across All	Oliala.				
50% = <u>1</u> , 20% = <u>0</u> Sapling/Shrub Stratur	n (Plot size: <u>15 foot radius</u>)	<u>90</u>	= I Ota	al Cove	r	Percent of Dominar That Are OBL, FAC		<u>67</u>			(A/B)
Rubus armeniacu		<u>100</u>	<u>yes</u>		FACU	Prevalence Index	worksheet:				
2	=						6 Cover of:	Multi	ply by:		
3.						OBL species		x1 =		_	
4						FACW species		x2 =		_	
5						FAC species		x3 =		_	
50% = <u>1</u> , 20% = <u>0</u>		<u>100</u>	= Tota	al Cove	r	FACU species		x4 =			
Herb Stratum (Plot siz	ze: 3 foot radius)					UPL species		x5 =			
Equisetum arvens	<u>ee</u>	<u>1</u>	<u>yes</u>		FAC	Column Totals:	(A	۸)		(E	3)
2							Prevalence In	dex = B/A =	_		
3						Hydrophytic Vege					
4						☐ 1 – Rapid Tes	st for Hydroph	ytic Vegetation			
5							e Test is >509	%			
6						☐ 3 - Prevalence	e Index is <3.	01			
7						4 - Morpholog	ical Adaptatio	ons ¹ (Provide supp	orting		
8						data in Re	marks or on a	separate sheet)			
9						☐ 5 - Wetland N	lon-Vascular f	Plants ¹			
10						☐ Problematic H	lydrophytic Ve	egetation ¹ (Explain)		
11						¹ Indicators of hydric	s acil and wat	and budgeless mu	-4		
50% = <u>1</u> , 20% = <u>0</u>		<u>1</u>	= Tota	al Cove	r	be present, unless			Sl		
Woody Vine Stratum	(Plot size: 3 foot radius)										
1						Hydrophytic					
2						Vegetation	Yes	. \	No		
50% =, 20% =		<u>0</u>	= Tota	al Cove	r	Present?					
% Bare Ground in He							_				
Remarks:	67% dominant wetland vegetation	per the Don	ninance	Test. 1	00% Himala	yan blackberry in shru	ıb cover.				

· 	Matrix			Redox Fe	1	. 2					
nches) Color (m		%	Color (m		Type'	Loc ²	Texture		Remark	S	
0 to 18+ 10YR	<u>3/3</u>	<u>98</u>	<u>10YR 5</u>	<u>5/3</u> <u>2</u>	<u>D</u>	<u>M</u>	Clay loam	<u>w/gravel</u>			
ype: C= Concentration	D=Depletio	n, RM=R	Reduced Ma	trix, CS=Covered or	Coated Sand G	rains. ² Loc	ation: PL=Po	re Lining, M=Mat	rix		
dric Soil Indicators:	Applicable	to all LR	Rs, unless	otherwise noted.)			Indicato	ors for Problema	tic Hydric S	Soils ³ :	
Histosol (A1)				Sandy Redox (S5)			cm Muck (A10)			
Histic Epipedon (A	2)			Stripped Matrix (S	6)		□ F	Red Parent Mater	rial (TF2)		
Black Histic (A3)				Loamy Mucky Min	eral (F1) (exce	pt MLRA 1)		ery Shallow Dar	k Surface (T	F12)	
] Hydrogen Sulfide (\ 4)			Loamy Gleyed Ma	atrix (F2)			Other (Explain in	Remarks)		
Depleted Below Da	rk Surface (A11)		Depleted Matrix (F	=3)						
Thick Dark Surface	(A12)			Redox Dark Surfa	ce (F6)						
Sandy Mucky Mine	ral (S1)			Depleted Dark Su	rface (F7)			ors of hydrophytic and hydrology mu			
Sandy Gleyed Mat	ix (S4)			Redox Depression	ns (F8)			ss disturbed or pr		π,	
estrictive Layer (if pre	sent):										
pe:	_										
pth (inches):	_				H	lydric Soils Pre	esent?	Ye	s 🗆	No	\boxtimes
	ith 2% redo	x feature	s								
emarks: 3 chroma v		x feature	S								
YDROLOGY Vetland Hydrology Ind	cators:										
YDROLOGY Tetland Hydrology Ind rimary Indicators (minin	cators: um of one r		check all th					y Indicators (2 or		red)	
YDROLOGY [etland Hydrology Indicators (minin]] Surface Water (Af	cators: um of one r			Water-Stained Lea	` ,		☐ Wat	er-Stained Leave	es (B9)	red)	
YDROLOGY etland Hydrology Ind imary Indicators (minin] Surface Water (A1	cators: um of one r		check all th	Water-Stained Lea (except MLRA 1,	` ,		☐ Wat	er-Stained Leave	es (B9)	red)	
YDROLOGY etland Hydrology Indi imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3)	cators: um of one r		check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11)	2, 4A, and 4B)		☐ Wat	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E	es (B9) I 4B) B10)	red)	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1)	cators: um of one r) A2)		check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra	2, 4A, and 4B) ates (B13)		Wat (ML Drai	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T	es (B9) 1 4B) 310) able (C2)	·	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit	cators: um of one r) A2)		check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide	2, 4A, and 4B) ates (B13) Odor (C1)		Wate (ML Drain Dry-	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on	es (B9) I 4B) 310) able (C2) Aerial Imag	·	
YDROLOGY etland Hydrology Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	cators: um of one r) A2)		check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi		Wat (ML Drai Dry- Satu Geo	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on pmorphic Positior	es (B9) I 4B) B10) able (C2) Aerial Imag	·	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust	cators: um of one r) A2)		check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu	2, 4A, and 4B) ates (B13) Odor (C1) neres along Livi ced Iron (C4)	ing Roots (C3)	Wat (ML Drai Dry- Satu Geo	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on imorphic Position Illow Aquitard (D:	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2)	·	
YDROLOGY etland Hydrology Ind imary Indicators (minin] Surface Water (A1] High Water Table] Saturation (A3)] Water Marks (B1)] Sediment Deposits] Drift Deposits (B3)] Algal Mat or Crust Iron Deposits (B5)	cators: um of one r) (A2) (B2)		check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospi Presence of Redu Recent Iron Redu	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Sc	ing Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on omorphic Position llow Aquitard (D: C-Neutral Test (D	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3)	ery (C9)	
YDROLOGY etland Hydrology Ind imary Indicators (minin] Surface Water (A1] High Water Table] Saturation (A3)] Water Marks (B1)] Sediment Deposits [] Drift Deposits (B3)] Algal Mat or Crust Iron Deposits (B5)] Surface Soil Crack	cators: um of one r) A2) (B2) (B4) s (B6)	equired;	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Sees Plants (D1) (ing Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on omorphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	
YDROLOGY etland Hydrology Ind imary Indicators (minin] Surface Water (A1) High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible	cators: um of one r) A2) (B2) (B4) s (B6) on Aerial Im	equired;	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospi Presence of Redu Recent Iron Redu	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Sees Plants (D1) (ing Roots (C3)	Wat (ML Drai Dry- Satt Geo Sha FAC	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on omorphic Position llow Aquitard (D: C-Neutral Test (D	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	
YDROLOGY etland Hydrology Ind imary Indicators (minin] Surface Water (A1] High Water Table] Saturation (A3)] Water Marks (B1)] Sediment Deposits [] Drift Deposits (B3)] Algal Mat or Crust] Iron Deposits (B5)] Surface Soil Cract [] Inundation Visible] Sparsely Vegetate	cators: um of one r) A2) (B2) (B4) s (B6) on Aerial Im	equired;	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Sees Plants (D1) (ing Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on omorphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (At High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible Sparsely Vegetate Eld Observations:	cators: um of one r) (A2) (B2) (B4) (B4) on Aerial Im d Concave S	equired; agery (B Surface (l	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresso Other (Explain in I	2, 4A, and 4B) ates (B13) Odor (C1) neres along Livi ced Iron (C4) ction in Tilled Ses Plants (D1) (Remarks)	ing Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on omorphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible Sparsely Vegetate eld Observations: urface Water Present?	cators: um of one r) (A2) (B2) (B4) (B4) s (B6) on Aerial Im d Concave S	equired;	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospi Presence of Redu Recent Iron Redu Stunted or Stresse Other (Explain in I	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Si es Plants (D1) (Remarks)	ing Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on omorphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	
YDROLOGY Vetland Hydrology Indicators (minimally Indicators (Mini	cators: um of one r) (A2) (B2) (B4) (B4) on Aerial Im d Concave S	equired; agery (B Surface (l	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresso Other (Explain in I	2, 4A, and 4B) ates (B13) Odor (C1) neres along Livi ced Iron (C4) ction in Tilled Ses Plants (D1) (Remarks)	ing Roots (C3) oils (C6) LRR A)	Wat (ML Drai Dry- Satu Geo Sha Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on morphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds st-Heave Hummo	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	0
YDROLOGY etland Hydrology Ind imary Indicators (minin] Surface Water (A1] High Water Table] Saturation (A3)] Water Marks (B1)] Sediment Deposits [] Drift Deposits (B3)] Algal Mat or Crust] Iron Deposits (B5)] Surface Soil Crack [] Inundation Visible] Sparsely Vegetate eld Observations: urface Water Present? ater Table Present? sturation Present?	cators: um of one r) A2) (B2) (B4) s (B6) on Aerial Im d Concave S Yes Yes	agery (B'Surface (I	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospi Presence of Redu Recent Iron Redu Stunted or Stresso Other (Explain in I	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Si es Plants (D1) (Remarks) Si: Si:	ing Roots (C3) oils (C6) LRR A) Wett	□ Watt (ML □ Drai □ Dry- □ Satt □ Geo □ Sha □ FAC □ Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on morphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds st-Heave Hummo	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	0
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible Sparsely Vegetate eld Observations: urface Water Present? atter Table Present?	cators: um of one r) A2) (B2) (B4) s (B6) on Aerial Im d Concave S Yes Yes	agery (B'Surface (I	check all th	Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospi Presence of Redu Recent Iron Redu Stunted or Stresso Other (Explain in I	2, 4A, and 4B) ates (B13) Odor (C1) heres along Livi ced Iron (C4) ction in Tilled Si es Plants (D1) (Remarks) Si: Si:	ing Roots (C3) oils (C6) LRR A) Wett	□ Watt (ML □ Drai □ Dry- □ Satt □ Geo □ Sha □ FAC □ Rais	rer-Stained Leave RA 1, 2, 4A, and inage Patterns (E Season Water T uration Visible on morphic Position Illow Aquitard (D: C-Neutral Test (D sed Ant Mounds st-Heave Hummo	es (B9) 1 4B) 310) able (C2) Aerial Imag 1 (D2) 3) 5) (D6) (LRR A	ery (C9)	0

Project Site:	Sound Transit East Link Extensi	on Project		City/Cour	nty: <u>Bellevue/King</u> S	ampling Date:	May 15, 2013
Applicant/Owner:	Sound Transit				State: WA S	ampling Point:	BNSF Northeast SPW
Investigator(s):	C Douglas & J. Pursley				Section, Township, Range	S29, T24N, R5E	NOITHEAST OF W
Landform (hillslope, terr		reen developr	nent Loca	al relief (conc	ave, convex, none): concave	Slope	(%): <u>0% to 2%</u>
Subregion (LRR):	<u>A</u>	Lat: 47.6	<u>2N</u>		Long: <u>122.18W</u>	Datum:	
Soil Map Unit Name:	Kitsap silt loam				NWI classif		
Are climatic / hydrologic	c conditions on the site typical for	r this time of	/ear? Y	es 🛛	No	Remarks.)	
Are Vegetation □,	Soil □, or Hydrology	☐, signific	antly disturbed	d? Are "	Normal Circumstances" present?	Yes	⊠ No □
Are Vegetation □,	Soil □, or Hydrology	☐, natural	ly problematic	? (If ne	eded, explain any answers in Rem	arks.)	
SUMMARY OF FINE	DINGS – Attach site map sl	howing san	npling point	locations	transects, important feature	s, etc.	
Hydrophytic Vegetation	Present?	Yes 🛚	No 🗆	I- 41- C	alad Assa		
Hydric Soil Present?		Yes 🛚	No 🗌	Is the Samp within a We		Yes	⊠ No □
Wetland Hydrology Pres	sent?	Yes 🛚	No 🗆				
depression	with culverts at both ends that a	are connected	to other wetla	inds in the ar	relopment located outside the railro ea. Wetland includes depressional rtheast is connected to Wetland BN	HGM class. The ma	jority of the
VEGETATION – Use	e scientific names of plant	s					
Tree Stratum (Plot size	: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1. Alnus rubra		60	<u>yes</u>	FAC	Number of Dominant Species		
2. Populus trichocarpa	<u>a</u>	30	ves	FAC	That Are OBL, FACW, or FAC:	<u>4</u>	(A)
3. <u>Salix scouleriana</u>		<u>10</u>	<u>no</u>	FAC	Total Number of Dominant		
4					Species Across All Strata:	<u>4</u>	(B)
50% = <u>1</u> , 20% = <u>1</u>		<u>100</u>	= Total Cove	r	Percent of Dominant Species	400	(A/D)
Sapling/Shrub Stratum	(Plot size: 15 foot radius)				That Are OBL, FACW, or FAC:	<u>100</u>	(A/B)
Crataegus douglasi	<u>ii</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	Prevalence Index worksheet:		
2. <u>Spiraea douglasii</u>		<u>40</u>	<u>yes</u>	FACW	Total % Cover of:	Multiply	by:
3					OBL species	x1 =	
4					FACW species	x2 =	
5					FAC species	x3 =	
50% = <u>1</u> , 20% = <u>0</u>		<u>45</u>	= Total Cove	r	FACU species	x4 =	
Herb Stratum (Plot size	e: 3 foot radius)				UPL species	x5 =	
Ludwigia palustris		<u>20</u>	<u>yes</u>	<u>OBL</u>	Column Totals:(A)	(B)
2					Prevalence In	dex = B/A =	
3					Hydrophytic Vegetation Indicat	ors:	
4					☐ 1 – Rapid Test for Hydroph	ytic Vegetation	
5					□ 2 - Dominance Test is >50%	6	
6					☐ 3 - Prevalence Index is ≤3.0) ¹	
7					4 - Morphological Adaptatio		ng
8					data in Remarks or on a	separate sheet)	
9					☐ 5 - Wetland Non-Vascular F	lants ¹	
10					☐ Problematic Hydrophytic Ve	getation ¹ (Explain)	
11					1		
50% = <u>1</u> , 20% = <u>0</u>		<u>20</u>	= Total Cove	r	¹ Indicators of hydric soil and wetle be present, unless disturbed or p		
Woody Vine Stratum (P	Plot size: 3 foot radius)						
1					Hardranda dia		
2					Hydrophytic Vegetation Yes		No 🗆
50% =, 20% =		<u>0</u>	= Total Cove	r	Present?		
% Bare Ground in Herb	Stratum 80						
Remarks: 10	00% dominant wetland vegetation	n per the Don	ninance Test				

SOIL Sampling Point: BNSF Northeast SPW Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Remarks (inches) Color (moist) % Color (moist) % Type¹ Loc² Texture Silt loam 10YR 4/1 100 None w/dense root layer 0 to 7 None None None 7 to 10 10YR 4/1 100 None None None None Silt loam Silt loam 10 to 18+ 10YR 4/1 100 w/gravel None None None None Loam ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) П \Box Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 chroma **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Salt Crust (B11) Saturation (A3) Drainage Patterns (B10) П \boxtimes Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Yes \boxtimes Water Table Present? No Depth (inches): 1 inch Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Water table 1 inch from surface, majority of the wetland included standing water at the time of the investigation. Remarks:

Project/Site: Operations & Maintenance Satellite F	acility	City/County:	Bellevue/k	King Coun	ty		Sar	npling Date:	12/15/2014
Applicant/Own(Sound Transit					State:	WA	Sar	npling Point: S	P 4 wetl E2-4
Investigator(s): Torrey Luiting		Section	n, Township	, Range:	Section	n 28, 25No	orth, 5Ea	st	
Landform (hillslope, terrace, etc.): developed flat		Local re	lief (concav	e, convex	, none):	concave		Slope	(%): <u> </u>
Subregion (LRINorthwest Forests and Coast (LRR A) Lat:		47	7.629991	Long:		-122.	182311 Da	tum:
Soil Map Unit Name: SK – Seattle Muck	-					ssification			
Are climatic / hydrologic conditions on the site typical	for this time	e of year?	Yes	x	No		(If no,	explain in Rem	arks)
Are Vegetation, Soil, or Hydrology		-	_						No
Are Vegetation, Soil, or Hydrology								in Remarks.)	
SUMMARY OF FINDINGS – Attach site m					ıs, trai	nsects, i	importa	ant features	, etc.
Hydrophytic Vegetation Present? Yes x No)								
		Is the Sampled Area within a Wetland?					No		
Wetland Hydrology Present? Yes x No		within a					_		
Remarks: Sampled along southern edge of wetland I development	E2-4; south	ern and wes	tern edges o	of wetland	delinea	ted; wetla	nd occup	ies depression	surrounded by
VEGETATION									
	Absolute	Dominant	Indicator	Domina	nce Tes	st worksh	eet:		
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?			inant Spe			
<u>.</u> 1.				That Are	OBL, F	ACW, or	FAC:	1	(A)
2.				Total Nu	ımber of	f Dominan	t		
3.				Species	Across	All Strata:		2	(B)
4.				Percent	of Domi	inant Spec	-ies		```
0 = 50% of total cover Total Cover:	0			1		ACW, or		50%	(A/B)
0 = 20% ot total cover (trees)							_		```
Shrub Stratum				Prevale	nce Ind	ex Works	heet:		
1. Rubus armeniacus	15	Х	FACU	Tot	al % Co	ver of:		Multiply by:	
2.				OBL spe	ecies		x1 =	0	,
3.				FACW s	pecies	100	x2 =	200	,
4.				FAC spe	ecies		x3 =	0	
5.				FACU s	pecies	15	x4 =	60	
7.5 = 50% of total cover Total Cover:	15			UPL spe				0	
Herb Stratum 3 = 20% ot total cover (shrubs)				Column	Totals:	115		260	(B)
Phalaris arundinacea	85	X	FACW	Preval		dex = B/A			
2. Epilobium ciliatum	15		FACW						
3. Cirsium vulgare	trace		FACU	Hydrop	nytic Ve	getation	Indicato	rs:	
4.					1 - Rap	oid Test fo	r Hydrop	hytic Vegetatio	า
5.					2 - Dor	ninance T	est is >5	0%	
6.				Х	3 - Pre	valence In	ndex is ≤	3.0 ¹	
7.					4 - Moi	phologica	l Adapta	tion1 (Provide s	supporting
8.					data in	Remarks	or on a	separate sheet)	
9.					5 - We	tland Non-	-Vascula	r Plants ¹	
10.					Proble	matic Hyd	rophytic	Vegetation ¹ (Ex	plain)
11.									
= 50% of total cover Total Cover:	100								
20 = 20% ot total cover (herbs)								nd hydrology m	ust
Woody Vine Stratum				be prese	ent, unle	ss disturb	ed or pro	blematic.	
1.				Hydrop	hvtic	_			
Total Cover:	0		_	Vegetat	•				
% Bare Ground in Herb Stratum0 %	Cover of Bi	otic Crust	0	Present			Yes x	No	
Remarks: Rubus armeniacus recently renamed by th	e Flora of N	lorth Americ	a to be Rub	us bifrons	, but tha	t name is	not refle	cted in the Lich	var 2012
National Wetland Plant list for delineations									

SOIL Sampling Point: SP-4

Profile Des	cription: (Describe t	o the de	pth needed to doc	ument th	e indicat	tor or c	onfirm the a	bsence o	f indicators.)		
Depth Matrix Redox Features											
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc	Textu	ıre		Remarks	
0-8	10YR 3/1	100			7,		sandy lo	am			
8-16+	Gley2 4/10BG	90	10YR 4/6	10	С	m	clay loan		common med	lium prominer	nt redox
							_				
									-		
							_		-		
									-		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.											
Hydric Soil	Indicators: (Applica	ble to al	l LRRs, unless oth	erwise n	oted.)		Indicato	rs for Pro	oblematic Hyd	ric Soils³:	
Histos	ol (A1)		Sandy F	Redox (S5	5)			2	cm Muck (A10)	
Histic	Epipedon (A2)		Stripped	l Matrix (S	36)			R	ed Parent Mate	erial (TF2)	
Black	Histic (A3)		Loamy I	Mucky Mi	neral (F1)) (exce _l	ot MLRA 1)	0	ther (Explain in	Remarks)	
Hydro	gen Sulfide (A4)		Loamy (Gleyed M	atrix (F2))		Ve	ry Shallow Dar	k Surface (TF	12)
x Deplet	ted Below Dark Surfac	e (A11)	Deplete	d Matrix (F3)						
Thick	Dark Surface (A12)			oark Surfa			³ Inc	dicators of	f hydrophytic ve	egetation and	
	Muck Mineral (S1)		Deplete	d Dark Su	urface (F7	7)			drology must b	-	
	gleyed Matrix (S4)			Depressio		,		-	isturbed or pro		
	Layer (if present):			<u> </u>	` ,				<u>'</u>		
	Layor (ii procent):										
Type: Depth (inch	ec).						Hydric Soil P	resent?	Y	es x	No
	ed matrix of at least 6			:11 : 40			•				
chroma of 2 o							, . , .				
HYDROLOGY Wetland Hydrology Indicators:											
-	icators (any one indica	tor ie eut	ficient)					Sa	condary Indica	tore (2 or mor	e required)
		101 15 501		toined La	onyon (PO)) (ovec	nt .		/ater-Stained L		
	e Water (A1)				eaves (B9		·μι	v		eaves (D9) (I	/ILKA 1, 2,
	Vater Table (A2)				and 4B)	1		4A and 4B)			
	Saturation (A3) Salt Crust (B11)						Drainage Patterns (B10)				
	Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2							, ,			
	Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery								agery (C9)		
Drift Deposits (B3) Oxidized Rhizospheres along Living									eomorphic Pos	. ,	
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)									hallow Aquitaro	` '	
Iron Deposits (B5) Recent Iron Reduction in Plowed Soils (C6) FAC-Neutral Test (D5)											
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)									R A)		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)											
Sparse	ely Vegetated Concave	e Surface	e (B8)								
Field Obse											
	ter Present? Yes			(inches):		10					
Water table				(inches):		10	Wetland	Hydrolog	v Present?	Yes x	No
Saturation Present? Yes x No Depth (inches): 2 Wetland Hydrology Present? Yes x No (includes capillary fringe)											
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Remarks:											

Project/Site: Operations & Maintenance	Satellite Facil	ity	City/County:	Bellevue/K	ing Count	у	Sampling Date	e: 12/15/2014
Applicant/Own Sound Transit						State: WA	Sampling Poir	nt: SP 5 upland edge
Investigator(s): Torrey Luiting			Section	n, Township,	, Range:	Section 28, 25Nortl	n, 5East	
Landform (hillslope, terrace, etc.): slopir	g edge of dep	ression	Local re	lief (concave	e, convex,	none): shallow slop	be to wetl Sl	ope (%):1%
Subregion (LRINorthwest Forests and Coa	ast (LRR A)	Lat:		47	.629991	Long:	-122.182311	Datum:
Soil Map Unit Name: SK – Seattle Muck					١	NWI Classification:	PFOc	
Are climatic / hydrologic conditions on the	site typical for	this time	e of year?	Yes x	κ	No	(If no, explain in	Remarks)
Are Vegetation, Soil, or H	ydrology		significantly	disturbed?	Are "No			
Are Vegetation, Soil, or H						ded, explain any ans		
SUMMARY OF FINDINGS – Attac						s, transects, im	portant featu	ıres, etc.
Hydrophytic Vegetation Present? Yes	c No							
<u> </u>	No x			ampled Area	a	Yes	No x	
<u>-</u>	No <u>x</u>		within a	a Wetland?			-	_
Remarks: Sampled along slope break along			-tl	4		hi- l		
VEGETATION								
	Ab	solute	Dominant	Indicator	Domina	nce Test workshee	t:	
<u>Tree Stratum</u> (Use scientific names.)	<u>%</u>	Cover	Species?	Status?		of Dominant Specie OBL, FACW, or FA		(A)
2					Total Nu	mber of Dominant		(/ \/
3.						Across All Strata:	1	(B)
4					Darsont	of Daminant Cassia		(5)
0 = 50% of total cover T	otal Cover:	0				of Dominant Specie OBL, FACW, or FA		% (A/B)
0 = 20% ot total cover (trees)						, ,		(=)
Shrub Stratum				-	Prevaler	nce Index Workshe	et:	
1.					Tota	al % Cover of:	Multiply	v bv:
2.						cies		
3.					_	pecies		
4.					FAC spe			
5.					FACU sp	ecies		
<u>0</u> = 50% of total cover T	otal Cover:	0	,		UPL spe			
Herb Stratum 0 = 20% ot total cover (shr	ubs)				Column	Totals: 0	(A) <u>0</u>	(B)
Phalaris arundinacea		100	Х	FACW	Prevale	ence Index = B/A =	#DIV/0!	<u> </u>
2								
3					Hydroph	ytic Vegetation Ind	dicators:	
4						1 - Rapid Test for H	lydrophytic Vege	tation
5					X	2 - Dominance Tes		
6						3 - Prevalence Inde		
7						4 - Morphological A		
8						data in Remarks or	•	neet)
9						5 - Wetland Non-Va		
10						Problematic Hydro	ohytic Vegetation	¹ (Explain)
11								
	Total Cover:	100			1			
20 = 20% ot total cover (herbs)						rs of hydric soil and		gy must
Woody Vine Stratum					ne prese	nt, unless disturbed	or problematic.	
1	-4-1 0-1				Hydroph	•		
	otal Cover:	0 of Di	-4:- 0:- 1	_	Vegetati		V	N-
% Bare Ground in Herb Stratum _			otic Crust	0	Present'			No
Remarks: Rubus armeniacus recently ren. National Wetland Plant list for delineations plot								

SOIL Sampling Point: SP-5

Profile Des	scription: (Describe	to the dep	th needed to doc	ument t	he indicato	or co	nfirm the absence	of indicators.)
Depth	Matrix		Red	dox Feat	ures		-	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12+	10YR 3/2	100					sandy loam	gravels and fill in the soil profile
			_					
'Type: C=0	Concentration, D=Dep	letion, RM=	Reduced Matrix,	CS=Cov	ered or Coat	ed San	d Grains. Location	on: PL=Pore Lining, M=Matrix.
Hydric Soi	I Indicators: (Applic	able to all	LRRs, unless oth	erwise	noted.)		Indicators for F	Problematic Hydric Soils ³ :
-	sol (A1)		Sandy F		-			2 cm Muck (A10)
	Epipedon (A2)		Stripped					Red Parent Material (TF2)
	Histic (A3)				lineral (F1) (except	MLRA 1)	Other (Explain in Remarks)
	gen Sulfide (A4)			•	лаtrix (F2)	меср		/ery Shallow Dark Surface (TF12)
	eted Below Dark Surface	ce (A11)	Deplete					,
	Dark Surface (A12)	<i>(,</i> , , , , , , , , , , , , , , , , , ,			face (F6)		³ Indicators	of hydrophytic vegetation and
	y Muck Mineral (S1)				Surface (F7)			hydrology must be present,
	y gleyed Matrix (S4)				ons (F8)			disturbed or problematic.
	Layer (if present):							and an experience of the control of
	zayor (ii proconi)i							
Type: Depth (inch	nes):					l _H ,	dric Soil Present	? Yes No x
	redox or other indicate		<u></u>	1 0				
YDROLOG Wetland H	Y ydrology Indicators:							
Primary Inc	dicators (any one indic	ator is suffi	cient)					Secondary Indicators (2 or more required)
Surfa	ce Water (A1)		Water-S	Stained L	eaves (B9)	ехсер	t	Water-Stained Leaves (B9) (MLRA 1, 2,
High \	Water Table (A2)		MLR	A 1, 2, 4	A and 4B)		<u> </u>	4A and 4B)
Satura	ation (A3)		Salt Cru	st (B11)				Drainage Patterns (B10)
Water	r Marks (B1)		Aquatic	Inverteb	rates (B13)		<u> </u>	Dry-Season Water Table (C2)
Sedin	nent Deposits (B2)		Hydroge	en Sulfid	e Odor (C1)			Saturation Visible on Aerial Imagery (C9)
Drift D	Deposits (B3)		Oxidized	d Rhizos	pheres alon	Living	Roots (C3)	Geomorphic Position (D2)
Algal	Mat or Crust (B4)		Presenc	e of Red	duced Iron (0	24)	<u> </u>	Shallow Aquitard (D3)
Iron D	Deposits (B5)		Recent	Iron Rec	luction in Plo	wed So	oils (C6)	FAC-Neutral Test (D5)
Surfac	ce Soil Cracks (B6)		Stunted	or Stres	sed Plants (D1) (LF	RR A)	Raised Ant Mounds (D6) (LRR A)
Inund	ation Visible on Aerial	Imagery (E	7) Other (E	Explain ir	n Remarks)			Frost-Heave Hummocks (D7)
	sely Vegetated Concav							
Field Obse	ervations:		<u> </u>				I	
Surface Wa	ater Present? Yes			(inches				
Water table				(inches				D 40 Y N
Saturation	Present? Yes apillary fringe)	'	No <u>x</u> Depth	(inches):		Wetland Hydrol	ogy Present? Yes No x
	corded Data (stream g	auge, moni	toring well, aerial r	ohotos, r	orevious insc	ections	l s), if available:	
				, ,				
temarks: No	saturation or free wat	er in soil pr	ofile					

Project/Site: Operations & Maintenance Satellite F	acility	City/County:	: Bellevue/k	King County Sampling Date: 1	12/15/2014
Applicant/Own Sound Transit				State: WA Sampling Point: SP 6 w	/etl E2-4
Investigator(s): Torrey Luiting		Section	n, Township	p, Range: Section 28, 25North, 5East	
Landform (hillslope, terrace, etc.): developed flat		_ Local re		ve, convex, none): concave Slope (%):	
Subregion (LRINorthwest Forests and Coast (LRR A) Lat:		47	7.629991 Long: -122.182311 Datum:	
Soil Map Unit Name: SK – Seattle Muck				NWI Classification: PFOc	
Are climatic / hydrologic conditions on the site typical	for this time	e of year?	Yes	x No (If no, explain in Remarks)	
Are Vegetation, Soil, or Hydrology		significantly	/ disturbed?	? Are "Normal Circumstances" Present? Yes x	No
Are Vegetation, Soil, or Hydrology		naturally pr	oblematic?	(If needed, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site m	ap showi	ng sampl	ing point	t locations, transects, important features, etc.	
 Hydrophytic Vegetation Present? Yes x No)				
Hydric Soil Present? Yes x No)		ampled Are a Wetland?	YAS Y NO	
Wetland Hydrology Present? Yes x No)	Within	a Welland.		
surrounded by development	wetland E2-	4; southern	and westerr	rn edges of wetland delineated; wetland occupies depress	ion
VEGETATION				Tarana arang ar	
	Absolute			Dominance Test worksheet:	
Tree Stratum (Use scientific names.)	% Cover	Species?	Status?	Number of Dominant Species	
1. Salix lasiandra	10	Х	FACW	That Are OBL, FACW, or FAC:	(A)
2				Total Number of Dominant	
3				Species Across All Strata:	(B)
4				Percent of Dominant Species	
5 = 50% of total cover Total Cover:	10			That Are OBL, FACW, or FAC: 100%	(A/B)
2 = 20% ot total cover (trees)					
Shrub Stratum				Prevalence Index Worksheet:	
1.			· 	Total % Cover of: Multiply by:	
2.				OBL speciesx1 =0	
3. 4.			· 	FACW species x2 =	
5.				FAC species x3 = 0 FACU species x4 = 0	
0 = 50% of total cover Total Cover:	0			UPL species x5 = 0	
Herb Stratum $0 = 20\%$ of total cover (shrubs)				· — — —	(B)
Phalaris arundinacea	90	Х	FACW	Prevalence Index = B/A = #DIV/0!	(-)
Epilobium ciliatum	10		FACW		
3.				Hydrophytic Vegetation Indicators:	
4.				1 - Rapid Test for Hydrophytic Vegetation	
5.				X 2 - Dominance Test is >50%	
6.				##### 3 - Prevalence Index is ≤3.0 ¹	
7.				4 - Morphological Adaptation1 (Provide suppo	rting
8.			<u> </u>	data in Remarks or on a separate sheet)	
9				5 - Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain))
11				-	
50 = 50% of total cover Total Cover:	100				
20 = 20% ot total cover (herbs)				¹ Indicators of hydric soil and wetland hydrology must	
Woody Vine Stratum				be present, unless disturbed or problematic.	
1		-	· ·	- Hydrophytic	
Total Cover:		otio Omeri	^	Vegetation No. No. No. No.	
% Bare Ground in Herb Stratum0 %			0		<u> </u>
Remarks: Dead Rubus armeniacus present in plot; R lis not reflected in the Lichvar 2012 National Wetland				d by the Flora of North America to be Rubus bifrons, but the	nat name
The state of the s			-		

SOIL Sampling Point: SP-6

Profile Des	cription: (Describe t	to the de	pth needed to doc	ument th	e indicat	or or co	onfirm the absence	e of indicators.)
Depth	Matrix		Red	lox Featu	res			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 3/1	100					sandy loam	
6-14+	10YR 3/1	85	10YR 4/6	5	С	m	silt loam	common medium prominent redox
6-14+	Gley2 5/5B	10					_	mixed matrix
							_	
							_	
							_	
¹ Type: C=C	Concentration, D=Depl	etion, RN	1=Reduced Matrix, (CS=Cove	red or Co	ated Sa	nd Grains. ² Locat	ion: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applica	able to a	I LRRs, unless oth	erwise n	oted.)		Indicators for	Problematic Hydric Soils ³ :
Histos	ol (A1)		Sandy F	Redox (S5	5)			2 cm Muck (A10)
Histic	Epipedon (A2)		Stripped	l Matrix (S	36)			Red Parent Material (TF2)
Black	Histic (A3)		Loamy N	Mucky Mii	neral (F1)	(excep	ot MLRA 1)	Other (Explain in Remarks)
Hydro	gen Sulfide (A4)		Loamy (Gleyed Ma	atrix (F2))		Very Shallow Dark Surface (TF12)
Deplet	ted Below Dark Surfac	e (A11)	Deplete	d Matrix (F3)			
Thick	Dark Surface (A12)		x Redox D	ark Surfa	ace (F6)		³ Indicator	rs of hydrophytic vegetation and
Sandy	Muck Mineral (S1)		Deplete	d Dark Su	ırface (F7	')	wetland	d hydrology must be present,
Sandy	gleyed Matrix (S4)		Redox [epressio	ns (F8)		unles	ss disturbed or problematic.
Restrictive	Layer (if present):			-				·
Type:								
Depth (inch	es):					⊦	lydric Soil Presen	t? Yes x No
		rk with m	natrix value of 3 or le	es and c	hroma of	1 or less	s and at least 2 ner	cent redox that occurs within 12 inches of the
soil surface		Jit, Wit ii II		oo ana o	0111.0	. 000.	o ana at loadt 2 poi	Soft rodex that seed with 12 mones of the
HYDROLOGY	1							
Wetland Hy	drology Indicators:							
Primary Ind	icators (any one indica	ator is suf	ficient)					Secondary Indicators (2 or more required)
	ce Water (A1)			stained Le	eaves (B9) (exce	pt	Water-Stained Leaves (B9) (MLRA 1, 2,
	Vater Table (A2)				and 4B)			4A and 4B)
	ation (A3)			st (B11)	,			Drainage Patterns (B10)
	Marks (B1)			, ,	ates (B13	3)		Dry-Season Water Table (C2)
	ent Deposits (B2)				Odor (C1	,		Saturation Visible on Aerial Imagery (C9)
	eposits (B3)						ng Roots (C3)	Geomorphic Position (D2)
	Mat or Crust (B4)				uced Iron	•		Shallow Aquitard (D3)
	eposits (B5)					` '	Soils (C6)	FAC-Neutral Test (D5)
	e Soil Cracks (B6)				ed Plants		` /	Raised Ant Mounds (D6) (LRR A)
		lmagary				. , .		Frost-Heave Hummocks (D7)
	ation Visible on Aerial		· · ·	хріант ін	Remarks	,		Flost-neave nullillocks (D1)
	ely Vegetated Concav	e Suriace	(D0)					
Field Obse			No v Donth	(inches):				
Water table	ter Present? Yes Present? Yes	x		(inches): (inches):	_	10		
Saturation F				(inches):		2	Wetland Hydro	ology Present? Yes x No
,	apillary fringe)							
Describe Rec	orded Data (stream ga	auge, mo	nitoring well, aerial p	hotos, pr	evious in	spectior	ns), if available:	
Remarks:								
i vernarks.								

Project Site:	Sound Transit East Link Ex	tension Project		City/Cour	nty: Bellevue/King	Sampling Da	ite:	Feb. 1	4, 2013
Applicant/Owner:	Sound Transit				State:	WA Sampling Po		BNSF SPU	East
Investigator(s):	C Douglas & J. Pursley				Section, Townsh	ip, Range: <u>S29, T24</u>		<u> </u>	
Landform (hillslope, te	errace, etc.): Narrow area	between develop	ment Loc	al relief (cond	ave, convex, none): c	<u>oncave</u>	Slope (%): <u>0</u> '	% to 2%
Subregion (LRR):	<u>A</u>	Lat: <u>47.6</u>	62N		Long: <u>122.18W</u>	C	atum:		
Soil Map Unit Name:	Kitsap silt loam				N	IWI classification:	None Map	ped	
Are climatic / hydrolog	gic conditions on the site typic	al for this time of	year?	Yes 🛛	No ☐ (If no, e	explain in Remarks.)			
Are Vegetation	, Soil □, or Hydrolog	gy □, signifi	cantly disturbe	d? Are '	Normal Circumstances" p	present?	Yes	⊠ N	lo 🗆
Are Vegetation	, Soil □, or Hydrolog	gy □, natura	lly problemation	c? (If ne	eded, explain any answe	ers in Remarks.)			
SUMMARY OF FIN	NDINGS – Attach site ma	n showing sa	mplina poim	t locations	transects importan	t features, etc.			
Hydrophytic Vegetation		Yes 🗵	• • •		,po				
Hydric Soil Present?		Yes [Is the Samp			Yes [□ N	lo 🛛
Wetland Hydrology Pr	resent?	Yes [within a We	etland?				
	BNSF East is located in narro			and develop	nont Wotland is a narroy	w depression with cul-	verte at het	h onds	
	includes depressional HGM c		iaiiioau iiacks	and developi	nent. Wetland is a namo	w depression with curv	rens at but	ii eiius	·.
VEGETATION – U	se scientific names of p	lants							
Tree Stratum (Plot siz	ze: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worl	ksheet:			
1. <u>Alnus rubra</u>		<u>5</u>	<u>yes</u>	FAC	Number of Dominant S	necies			
2					That Are OBL, FACW,		<u>2</u>		(A)
3					Total Number of Domir	nant			
4					Species Across All Stra		<u>2</u>		(B)
50% = <u>1</u> , 20% = <u>0</u>		<u>5</u>	= Total Cov	er	Percent of Dominant S	pecies	100		(A (D)
Sapling/Shrub Stratur	m (Plot size: 15 foot radius)				That Are OBL, FACW,		<u>100</u>		(A/B)
1					Prevalence Index wor	ksheet:			
2					Total % Co	over of:	Multiply I	oy:	
3					OBL species		x1 =		
4					FACW species		x2 =		
5					FAC species		x3 =		-
50% = <u>0</u> , 20% = <u>0</u>		<u>0</u>	= Total Cov	er	FACU species		x4 =		-
Herb Stratum (Plot siz	ze: 3 foot radius)				UPL species		x5 =		
Agrostis capillaris		<u>50</u>	<u>yes</u>	FAC	Column Totals:	(A)			_ (B)
2. Festuca rubra		<u>15</u>	<u>no</u>	<u>FAC</u>	Prev	valence Index = B/A =	·		
3. <u>Juncus effusus</u>		<u>10</u>	<u>no</u>	<u>FACW</u>	Hydrophytic Vegetation	on Indicators:			
4					☐ 1 – Rapid Test fo	r Hydrophytic Vegetat	tion		
5					□ 2 - Dominance Tell □ 2 - Dominance Tell □ 3 - Dominance Tell □ 3 - Dominance Tell □ 4 - Dominance Tell □ 5 - Dominance Tell □ 6 - Dominance Tell □ 7 - Domina	est is >50%			
6					☐ 3 - Prevalence In	dex is <3.01			
7					4 - Morphological	Adaptations ¹ (Provide	e supportin	ıg	
8					data in Remar	ks or on a separate s	heet)		
9					5 - Wetland Non-	Vascular Plants ¹			
10					☐ Problematic Hydr	ophytic Vegetation ¹ (E	Explain)		
11					1				
50% = <u>1</u> , 20% = <u>0</u>		<u>75</u>	= Total Cov	er	¹ Indicators of hydric so be present, unless disti		gy must		
Woody Vine Stratum	(Plot size: 3 foot radius)								
Hedera hibernica									
2					Hydrophytic	Yes ⊠	1	No	
50% =, 20% =		<u>0</u>	= Total Cov	er	Vegetation Present?	res 🖂		NO	Ы
% Bare Ground in He	rb Stratum <u>25</u>								
Remarks:	100% dominant wetland vege	tation per the Do	minance Test,	only 2 domin	ant species.				
- tomanic									
1									

	Color (moist)	0	%	Color (r	noist)	%	Type ¹	Loc ²	Texture			Remark	S		
0 to 4	10YR 5/4	1	00	Non	<u>e</u>	None	None	None	Clay loam	!					
4 to 18+	10YR 5/4	<u>1</u>	00	Non	<u>e</u>	None	None	None	Clay loam	w/cobb	le & grave	<u>el</u>			
		_	—		_										
		_	—		_										
			—		_					-					
			—		_										
		_	_		_										
vpe: C= Co	oncentration, D=De	 epletion	RM=F	Reduced M	— atrix. CS=0	Covered or C	oated Sand	I Grains. ² L	ocation: PL=P	ore Lining. N	Л=Matrix				
	ndicators: (Appli	<u> </u>								tors for Pro		Hydric S	Soils ³ :		
Histoso						Redox (S5)				2 cm Muck	(A10)	-			
Histic E	Epipedon (A2)				Strippe	ed Matrix (S6)			Red Parent	Material (TF2)			
Black H	Histic (A3)				Loamy	Mucky Mine	eral (F1) (ex	cept MLRA 1)		Very Shallo	w Dark Su	urface (T	F12)		
] Hydrog	en Sulfide (A4)				Loamy	Gleyed Mati	rix (F2)			Other (Expl	ain in Ren	narks)			
] Deplete	ed Below Dark Sur	face (A	.11)		Deplet	ed Matrix (F3	3)								
Thick E	Oark Surface (A12))			Redox	Dark Surface	e (F6)		3						
_	Mucky Mineral (S				•	ed Dark Surf	` '			itors of hydrological					
	Gleyed Matrix (S4				Redox	Depressions	s (F8)			ess disturbed					
	.ayer (if present):														
pe: epth (inche:	Fill prism s): At surface							Hydric Soils I			Yes		No		\boxtimes
marks:	4 chroma							,							
emarks:	4 chroma							Tryano como							
emarks:								,							
YDROLO	GY Irology Indicator														
YDROLO fetland Hydrimary Indic	GY Irology Indicator ators (minimum of		quired;					Tryanio Conc.		ary Indicators	•		red)		
YDROLO fetland Hydrimary Indic	GY Irology Indicator: ators (minimum of e Water (A1)		quired;	check all th	Water-	Stained Leav	` '		□ W:	ater-Stained	Leaves (E	39)	red)		
YDROLO letland Hyd rimary Indic] Surfac] High V	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2)		quired;		Water-	ot MLRA 1, 2	` '		□ W:	ater-Stained	Leaves (E	39)	red)		
YDROLO Tetland Hydrimary Indic Surface High V	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3)		quired;		Water- (exception Salt Cr	ot MLRA 1, 2 rust (B11)	, 4A, and 4		Wi	ater-Stained ILRA 1, 2, 4, ainage Patte	Leaves (E A, and 4B erns (B10)	39))	red)		
YDROLO Yetland Hydrimary Indic Surfac High V Satura Water	GY drology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		quired;		Water- (except Salt Cr Aquation	ot MLRA 1, 2 rust (B11) c Invertebrate	es (B13)		W:	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W	Leaves (E A, and 4B erns (B10) ater Table	39) •)	,	2)	
YDROLO letland Hydrimary Indic letting Surface letting High V letting Satura letting Water letting Sedim	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		quired;		Water- (except Salt Cr Aquation Hydrog	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C	es (B13)	B)	Wi (M Dr Dr Sa	ater-Stained ILRA 1, 2, 4 ainage Patte y-Season W aturation Visi	Leaves (EA, and 4Berns (B10) atter Table	39) e (C2) rial Imag	,	9)	
YDROLO Vetland Hyd rimary Indic Surfac High V Satura Water Sedim Drift D	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		quired;		Water- (excep Salt Cr Aquati Hydrog Oxidize	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe	es (B13) Odor (C1) eres along I	JB)	War War War War War War War War War Wa	ater-Stained ILRA 1, 2, 4 ainage Patte y-Season W aturation Visi	Leaves (EA, and 4B erns (B10) atter Table ble on Aerosition (D2)	39) e (C2) rial Imag	,	99)	
YDROLO Yetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Algal N	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)		quired;		Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduc	es (B13) odor (C1) eres along L ed Iron (C4	Living Roots (C3	Wa (MM	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi ecomorphic Ponallow Aquita	Leaves (EA, and 4B) erns (B10) eater Table ble on Aerosition (D2) ard (D3)	39) e (C2) rial Imag	,	9)	
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Iron De	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	f one red	quired;		Water- (excep Salt Cr Aquati Hydrog Oxidize Preser Recen	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe	es (B13) Odor (C1) eres along Led Iron (C4	Living Roots (C3)	Wa	ater-Stained ILRA 1, 2, 4 ainage Patte y-Season W aturation Visi	Leaves (EA, and 4Berns (B10) atter Table ble on Aerosition (D2 ard (D3) est (D5)		ery (Cs	9)	
YDROLO Tetland Hydrorimary Indice Surface High V Satura Water Sedim Drift D Algal N Iron De	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	f one red			Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser Recen Stunte	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduc t Iron Reduct	es (B13) odor (C1) eres along L ed Iron (C4 tion in Tilled s Plants (D1	Living Roots (C3)	W:	atter-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi eomorphic Patte nallow Aquita	Leaves (EA, and 4B) erns (B10) atter Table ble on Aerosition (D2 ard (D3) est (D5) evands (D6)	39) (C2) (C2) (a) (LRR A	ery (Cs	9)	
YDROLO Tetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Algal N Iron Do	GY drology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6)	f one red	gery (B		Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser Recen Stunte	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduct t Iron Reduct d or Stresses	es (B13) odor (C1) eres along L ed Iron (C4 tion in Tilled s Plants (D1	Living Roots (C3)	W:	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T aised Ant Mo	Leaves (EA, and 4B) erns (B10) atter Table ble on Aerosition (D2 ard (D3) est (D5) evands (D6)	39) (C2) (C2) (a) (LRR A	ery (Cs	9)	
YDROLO Tetland Hydromary Indice Surface High V Satura Water Sedim Drift D Hon Do Surface Inundae	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Con	f one red	gery (B		Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser Recen Stunte	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduct t Iron Reduct d or Stresses	es (B13) odor (C1) eres along L ed Iron (C4 tion in Tilled s Plants (D1	Living Roots (C3)	W:	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T aised Ant Mo	Leaves (EA, and 4B) erns (B10) atter Table ble on Aerosition (D2 ard (D3) est (D5) evands (D6)	39) (C2) (C2) (a) (LRR A	ery (Cs	9)	
YDROLO Tetland Hydro Timary Indice Surface High V Satura Water Sedim Drift D Iron Do Surface Inunda Sparse Teld Observ	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Convations:	f one red	gery (B		Water- (exceptox Salt Crown Aquation Hydrogon Oxidizer Recent Stunter Other of the Control of th	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduct t Iron Reduct d or Stresses	es (B13) Door (C1) Heres along Leed Iron (C4 Hittion in Tilled Es Plants (D1 Hemarks)	Living Roots (C3)	W:	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T aised Ant Mo	Leaves (EA, and 4B) erns (B10) atter Table ble on Aerosition (D2 ard (D3) est (D5) evands (D6)	39) (C2) (C2) (a) (LRR A	ery (Cs	99)	
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Surface Inon De Inon De Inon de Sparse Veld Observer	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Convations: er Present?	f one red) rial Imag cave Su	gery (B urface (Water- (exceptox Salt Critical Aquation Aquation Country Count	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduc t Iron Reduct d or Stresses (Explain in Re	es (B13) Door (C1) Door (C1) Door (C4) Door (C	Living Roots (C3)	W:	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T aised Ant Mo	Leaves (EA, and 4B) erns (B10) atter Table ble on Aerosition (D2 ard (D3) est (D5) evands (D6)	39) (C2) (C2) (a) (LRR A	ery (Cs	9)	
Surface Surfac	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con vations: er Present? Present? esent?	rial Imac cave Su Yes Yes Yes	gery (B urface (Water- (exceptosalt Critical Aquation A	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduct t Iron Reduct d or Stresses (Explain in Re	es (B13) Door (C1) eres along L ed Iron (C4 cion in Tilled es Plants (D1 emarks)	Living Roots (C3) d Soils (C6) l) (LRR A)	W:	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi ecomorphic Pe nallow Aquita AC-Neutral Te aised Ant Mo ost-Heave H	Leaves (EAA, and 4BB erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) eumds (D6) ummocks	39) (C2) (C2) (a) (LRR A	ery (Cs	No No	
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Surface Inunda Sparse Vetla Observation Vater Table Saturation Princludes cap	GY Irology Indicator: ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Con vations: er Present? Present?	rial Ima cave Su Yes Yes Yes	gery (B urface (Water- (exceptosalt Critical Aquation A	ot MLRA 1, 2 rust (B11) c Invertebrate gen Sulfide C ed Rhizosphe nce of Reduct t Iron Reduct d or Stresses (Explain in Re	es (B13) Door (C1) eres along L ed Iron (C4 cion in Tilled es Plants (D1 emarks)	Living Roots (C3) d Soils (C6) l) (LRR A)	Wa (M) Dr Dr Sa Sa Sh Sh FA Fre	ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W aturation Visi ecomorphic Pe nallow Aquita AC-Neutral Te aised Ant Mo ost-Heave H	Leaves (EAA, and 4BB erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) eumds (D6) ummocks	39) (C2) (C2) (a) (LRR A (D7)	ery (Cs		

Project Site:	Sound Transit East L	ink Extension Project		City/Cour	ty: <u>Bellevue/King</u>	Sampling Date:	Feb. 14, 2013	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	BNSF East SPW	
Investigator(s):	C Douglas & J. Pursl	<u>ey</u>			Section, Township,	Range: <u>S29, T24N, R5E</u>		
Landform (hillslope, te	errace, etc.): <u>Narrov</u>	v area between develop	ment Loc	al relief (conc	ave, convex, none): conc	ave Slor	pe (%): 0% to 2%	<u>,</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	62N		Long: <u>122.18W</u>	Datum:		
Soil Map Unit Name:	Kitsap silt loam				NWI	classification: None N	<u>Mapped</u>	
Are climatic / hydrolog	gic conditions on the sit	e typical for this time of	year?	res ⊠	No 🔲 (If no, expl	ain in Remarks.)		
Are Vegetation	, Soil □, or H	ydrology 🔲, signifi	cantly disturbe	d? Are "	Normal Circumstances" pres	sent? Yes	⊠ No □	
Are Vegetation	, Soil □, or H	ydrology 🔲, natura	ally problemation	c? (If ne	eded, explain any answers i	n Remarks.)		
SUMMARY OF FIN	NDINGS – Attach si	te map showing sa	mpling poin	t locations	transects, important fe	atures, etc.		
Hydrophytic Vegetation	on Present?	Yes 🛭	No □					
Hydric Soil Present?		Yes 🛭	No □	Is the Samp		Yes	⊠ No □	
Wetland Hydrology Pr	resent?	Yes 🛭	I No □					
Remarks: Wetland	BNSF East is located in	n narrow area between	railroad tracks	and developr	nent. Wetland is a narrow de	epression with culverts at	both ends.	
	includes depressional I			,				
VEGETATION - U	se scientific names	s of plants						
Tree Stratum (Plot siz	ze: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksh	eet:		
1		<u>70 00vc1</u>	Орсокоз:	<u>Otatus</u>	Number of Dominant Spec	ries		
2.					That Are OBL, FACW, or f		(A)	
3.					Total Number of Dominant	,		
4.					Species Across All Strata:	- 3	(B)	
50% = <u>0</u> , 20% = <u>0</u>		<u>0</u>	= Total Cove	er	Percent of Dominant Spec	ies		
Sapling/Shrub Stratur	m (Plot size: <u>15 foot rac</u>	<u>lius</u>)			That Are OBL, FACW, or F	AC: <u>100</u>	(A/B	3)
1					Prevalence Index worksh	neet:		
2					Total % Cove	r of: Multi,	ply by:	
3					OBL species	x1 =		
4					FACW species	x2 =		
5					FAC species	x3 =		
50% = <u>0</u> , 20% = <u>0</u>		<u>0</u>	= Total Cove	er	FACU species	x4 =		
Herb Stratum (Plot size	ze: 3 foot radius)				UPL species	x5 =		
1. Juncus effusus		<u>15</u>	<u>no</u>	FACW	Column Totals:	(A)	(B)	
2. Lemna minor		<u>30</u>	<u>yes</u>	OBL		ence Index = B/A =		
3. Phalaris arundina	cea	<u>—</u> 50	yes	FACW	Hydrophytic Vegetation	Indicators:		_
4. Typha latifolia	<u></u>	<u>40</u>	<u>yes</u>	OBL	1	ydrophytic Vegetation		
5.		_			✓ 2 - Dominance Test			
6					☐ 3 - Prevalence Index			
7						laptations¹ (Provide suppo	artin a	
8.						iaptations (Provide suppo or on a separate sheet)	orting	
9.					☐ 5 - Wetland Non-Vas	scular Plants ¹		
10.							`	
11.					Problematic Hydropi	nytic Vegetation¹ (Explain)	,	
50% = <u>0</u> , 20% = <u>3</u>		100	= Total Cove		¹ Indicators of hydric soil ar		st	
	(Plot size: 3 foot radius		- Total Cove	5 1	be present, unless disturbe	ed or problematic.		
	(1 10t 312e. <u>3 100t 180103</u>	.)						
1					Hydrophytic			
2 50% =, 20% =					Vegetation	Yes 🛛	No 🗆	
		<u>0</u>	= Total Cove	31	Present?			
% Bare Ground in He	<u> </u>							
Remarks:	100% dominant wetlan	d vegetation per the Do	minance Test					

Depth N	atrix			Redox Feat								
		%	Color (m		Type ¹	Loc ²	Texture			Remarks		
<u>Color (moison of the first of </u>	<u> </u>	70 100	Color (m None		None	None	Duff	w/leaf litte		Remarks		
to 18+ 10YR 5/	-	100	None		None	None	Silt loam	wiedi iitte	<u>21.</u>			
<u></u>			110.110	<u></u>	110110	<u>. 1400</u>	<u>one rounn</u>					
	_			<u></u>								
	_											
	_											
	_											
	_											
pe: C= Concentration, D	=Depletion	n, RM=F	Reduced Ma	trix, CS=Covered or Co	ated Sand	Grains. ² Loo	cation: PL=Po	ore Lining, M=	Matrix			
dric Soil Indicators: (A	pplicable	to all LF	RRs, unless	otherwise noted.)			Indicat	ors for Proble	ematic H	lydric So	oils³:	
Histosol (A1)				Sandy Redox (S5)				2 cm Muck (A	10)			
Histic Epipedon (A2)				Stripped Matrix (S6)				Red Parent M	aterial (T	F2)		
Black Histic (A3)				Loamy Mucky Miner	al (F1) (exc	cept MLRA 1)		Very Shallow	Dark Sur	face (TF	12)	
Hydrogen Sulfide (A4	.)			Loamy Gleyed Matri	x (F2)			Other (Explain	n in Rema	arks)		
Depleted Below Dark	Surface (A	A11)		Depleted Matrix (F3)								
Thick Dark Surface (-			Redox Dark Surface			3,	61				
Sandy Mucky Minera				Depleted Dark Surfa	. ,		wetla	tors of hydroph and hydrology	nytic vego must be	etation a present	na ,	
Sandy Gleyed Matrix	-			Redox Depressions	(F8)			ss disturbed o				
strictive Layer (if prese	ent):											
De:										_		_
oth (inches):							CSCIII:		Yes	\boxtimes	No	
emarks: 1 chroma						Hydric Soils Pr						
· · · · · · · · · · · · · · · · · · ·						.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
marks: 1 chroma	ntors:											
marks: 1 chroma /DROLOGY etland Hydrology Indica		equired;	check all th	at apply)			Seconda	ry Indicators (;	2 or more	e require	d)	
marks: 1 chroma 'DROLOGY tland Hydrology Indica		equired;	check all th	at apply) Water-Stained Leave	es (B9)			ry Indicators (: ater-Stained Le			d)	
marks: 1 chroma DROLOGY tland Hydrology Indica mary Indicators (minimu	m of one re	equired;			,		☐ Wa		eaves (B	9)	d)	
TOROLOGY tland Hydrology Indicators (minimu Surface Water (A1)	m of one re	equired;		Water-Stained Leave	,		☐ Wa	ater-Stained Le	eaves (Bs	9)	d)	
DROLOGY tland Hydrology Indicators (minimu Surface Water (A1) High Water Table (A	m of one re	equired;	\boxtimes	Water-Stained Leave (except MLRA 1, 2,	4A, and 4E		☐ Wa	ater-Stained Le	eaves (B9 and 4B) as (B10)	9)	d)	
TDROLOGY tland Hydrology Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3)	m of one re	equired;		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and 4 Es (B13)		☐ Wa (MI ☐ Dra ☐ Dry	ater-Stained Le LRA 1, 2, 4A, ainage Pattern	eaves (B9 and 4B) is (B10) er Table	9) (C2)		
TDROLOGY tland Hydrology Indica mary Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1)	m of one re	equired;		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate	4A , and 4E s (B13) dor (C1)	В)	□ Wa (MI □ Dra □ Dry □ Sat	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Water	eaves (Bs and 4B) as (B10) er Table e on Aeria	(C2)		
TDROLOGY Itland Hydrology Indica mary Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (m of one re 2) 32)	equired;		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc	4A, and 4 E s (B13) dor (C1) res along Li	B)	☐ Wa (MI ☐ Dra ☐ Dry ☐ Sat ☐ Gee	ater-Stained Le LRA 1, 2, 4A, ainage Pattern /-Season Wate turation Visible	eaves (BS and 4B) as (B10) er Table e on Aeria ition (D2)	(C2)		
Marks: 1 chroma Marks: Marks	m of one re 2) 32) 4)	equired;		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and 4E s (B13) dor (C1) res along Lid Iron (C4)	B) iving Roots (C3)	☐ Wa (MI ☐ Dra ☐ Dry ☐ Sat ☐ Gea ☐ Sha	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3)	(C2)		
"DROLOGY Itland Hydrology Indica mary Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (Drift Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5) Surface Soil Cracks	m of one re 2) 32) 4) (B6)			Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	4A, and 4E s (B13) flor (C1) res along Li d Iron (C4) on in Tilled	B) iving Roots (C3) Soils (C6)	War (MI) Dra Dry Dry Sat Gee	ater-Stained Lec LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) t (D5)	(C2) al Image		
TDROLOGY Itland Hydrology Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5) Surface Soil Cracks Inundation Visible or	m of one re 2) 32) 4) (B6) Aerial Ima	agery (B		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled Plants (D1)	B) iving Roots (C3) Soils (C6)	Wa (MI Dra Dry Sat Gee Sha FAA	ter-Stained Lec LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)		
Marks: 1 chroma Marks: Marks (Marks) Mater M	m of one re 2) 32) 4) (B6) Aerial Ima	agery (B		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled Plants (D1)	B) iving Roots (C3) Soils (C6)	Wa (MI Dra Dry Sat Gee Sha FAA	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)		
TDROLOGY Itland Hydrology Indicators (minimu) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5)) Surface Soil Cracks Inundation Visible or Sparsely Vegetated Itd Observations:	m of one re 2) 32) 4) (B6) Aerial Ima Concave S	agery (B Surface (Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and 4E is (B13) for (C1) res along Li d Iron (C4) on in Tilled Plants (D1) marks)	B) iving Roots (C3) Soils (C6)) (LRR A)	Wa (MI Dra Dry Sat Gee Sha FAA	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)		
Marks: 1 chroma Marks: M	m of one re 2) 32) 4) (B6) Aerial Ima Concave S	agery (B Surface (Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and 4E s (B13) for (C1) res along Li d Iron (C4) on in Tilled Plants (D1) marks)	iving Roots (C3) Soils (C6)) (LRR A)	Wa (MI Dra Dry Sat Gee Sha FAA	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)		
PROLOGY Petland Hydrology Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated Petel Observations: Inface Water Present?	m of one re 2) 32) 4) (B6) Aerial Ima Concave S	agery (B Surface (Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and 4E is (B13) for (C1) res along Li d Iron (C4) on in Tilled Plants (D1) marks)	iving Roots (C3) Soils (C6)) (LRR A)	Wa (MI Dra Dry Sat Gee Sha FAA	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)		
Marks: 1 chroma Marks: Marks (Marks) Mater M	m of one re 2) 32) 4) (B6) Aerial Ima Concave S	agery (B Surface (Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and 4E s (B13) for (C1) res along Li d Iron (C4) on in Tilled Plants (D1) marks)	B) iving Roots (C3) Soils (C6)) (LRR A)	Wa (MI) Dra Dry Sat Gee Sha FAG Fro	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)		0
Marks: 1 chroma Marks: Marks (Marks) Mater M	m of one re 2) 32) 4) (B6) Aerial Ima Concave S Yes Yes Yes	agery (B Surface (Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	4A, and 4E s (B13) for (C1) res along Li d Iron (C4) on in Tilled Plants (D1) marks) 5 inches Surface Surface	iving Roots (C3) Soils (C6)) (LRR A)	Wa (MI) Dra Dry Sat Gee Sha FAG Fro	ater-Stained Le LRA 1, 2, 4A, ainage Pattern /-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun ost-Heave Hun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)	ry (C9)	0
PROLOGY Setland Hydrology Indicators (minimu) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (E Iron Deposits (B5) Surface Soil Cracks Inundation Visible or	m of one re 2) 32) 4) (B6) Aerial Ima Concave S Yes Yes Yes	agery (B Surface (Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	4A, and 4E s (B13) for (C1) res along Li d Iron (C4) on in Tilled Plants (D1) marks) 5 inches Surface Surface	iving Roots (C3) Soils (C6)) (LRR A)	Wa (MI) Dra Dry Sat Gee Sha FAG Fro	ater-Stained Le LRA 1, 2, 4A, ainage Pattern /-Season Wate turation Visible omorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun ost-Heave Hun	eaves (B9 and 4B) s (B10) er Table e on Aeric ition (D2) (D3) t (D5) ads (D6) ((C2) al Image (LRR A)	ry (C9)	0

Project Site:	Sound Transit East Link Extension	on Project		City/Coun	ty: <u>Bellevue/King</u>	Sampling Date:	May 15, 2013
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	BNSF North SPU
Investigator(s):	C Douglas & J. Pursley				Section, Township, Rai	nge: <u>S29, T24N, R5E</u>	
Landform (hillslope, te	rrace, etc.): Narrow area between	een developn	nent Loca	al relief (conc	ave, convex, none): <u>concave</u>	<u>s</u> Slope	e (%): <u>0% to 2%</u>
Subregion (LRR):	<u>A</u>	Lat: 47.62	<u>2N</u>		Long: <u>122.18W</u>	Datum: _	
Soil Map Unit Name:	Kitsap silt loam				NWI cla	ssification: None Ma	apped
Are climatic / hydrolog	ic conditions on the site typical for	this time of y	ear? Y	es 🛛	No 🔲 (If no, explain	in Remarks.)	
Are Vegetation □,	Soil □, or Hydrology	☐, significa	antly disturbed	l? Are "	Normal Circumstances" present	t? Yes	⊠ No □
Are Vegetation □,	Soil ☐, or Hydrology	□, naturall	ly problematic?	? (If ne	eded, explain any answers in R	demarks.)	
CUMMARY OF FIN	IDINGS Attack site man ak		anlina naint	lesstions	transacta important fact		
	IDINGS – Attach site map sh			locations,	transects, important feat	ures, etc.	
Hydrophytic Vegetation	n Present?	Yes ⊠	No 🗆	Is the Samp	led Area	V	_ N- M
Hydric Soil Present?	10	Yes 🗆	No ⊠	within a We	tland?	Yes	□ No ⊠
Wetland Hydrology Pre		Yes 🗆	No 🛛				
depressio	BNSF North is located in narrow and in with culverts at both ends that a included standing water at the time	re connected	to other wetla	nds in the ar	ea. Wetland includes depression	onal HGM class. The ma	ajority of the
VEGETATION – Us	se scientific names of plants						
Tree Stratum (Plot size	e: 30 foot radius)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet	:	
1. Arbutus menziesii		<u>5</u>	no	UPL	Number of Dominant Species		(4)
2. Populus trichocarp	<u>0a</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	That Are OBL, FACW, or FAC		(A)
3					Total Number of Dominant	<u>4</u>	(B)
4					Species Across All Strata:	<u> </u>	(B)
50% = <u>1</u> , 20% = <u>0</u>		<u>20</u>	= Total Cover	r	Percent of Dominant Species		(A/B)
Sapling/Shrub Stratum	n (Plot size: 15 foot radius)				That Are OBL, FACW, or FAC): 10	(700)
1. Rubus armeniacus	<u>2</u>	<u>50</u>	<u>ves</u>	<u>FACU</u>	Prevalence Index workshee	t:	
2					Total % Cover of	<u>f:</u> <u>Multipl</u>	y by:
3					OBL species	x1 =	
4					FACW species	x2 =	
5					FAC species	x3 =	
50% = <u>1</u> , 20% = <u>0</u>		<u>50</u>	= Total Cover	r	FACU species	. x4 =	
Herb Stratum (Plot siz	e: 3 foot radius)				UPL species	x5 =	
1. Agrostis capillaris		<u>10</u>	<u>yes</u>	FAC	Column Totals:	_ (A)	(B)
2. Phalaris arundinad	<u>cea</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	Prevalence	e Index = B/A =	
3					Hydrophytic Vegetation Ind	icators:	
4					☐ 1 – Rapid Test for Hydro	ophytic Vegetation	
5					2 - Dominance Test is >	50%	
6					☐ 3 - Prevalence Index is	<u>≤</u> 3.0 ¹	
7					4 - Morphological Adapt	tations ¹ (Provide suppor	ting
8					data in Remarks or c	on a separate sheet)	
9					5 - Wetland Non-Vascul	ar Plants ¹	
10					☐ Problematic Hydrophytic	c Vegetation ¹ (Explain)	
11					1		
50% = <u>1</u> , 20% = <u>1</u>		<u>15</u>	= Total Cover	r	¹ Indicators of hydric soil and was be present, unless disturbed of		
Woody Vine Stratum (Plot size: 3 foot radius)				т р		
1							
2					Hydrophytic	V \	No.
50% =, 20% =		<u>0</u>	= Total Cover	r	Vegetation ' Present?	Yes ⊠	No 🗆
% Bare Ground in Her	b Stratum <u>85</u>						
Remarks: 7	75% dominant wetland vegetation	per the Domi	nance Test. 1	00% Himalay	an blackberry in shrub cover.		

Other Filit Other None None None None None Street & angular rock 10 18+ 10 19 19 10 19 19 None None None None None None Street & angular rock None None None None None Street & angular rock None None None None None Street & angular rock None Non	emarks
Oto 4 Fill 100 None None None None None Sitt wiffil gravel	emarks
At or 18+ 10YR 3/4 100 None None None None None Sitt wiffil gravel	
ype: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Location: PL=Pore Lining, M=Matrix dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histoscol (A1)	
Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Red Parent Material (TF Black Histo (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (H15) Very Shallow Shallow Surface (H15) Very Shallow Dark Surface (H15) Very Shallow Surface (H15) Very Shallow Shallow Dark Surface	
Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Red Parent Material (TF Black Histo (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (H15) Very Shallow Shallow Surface (H15) Very Shallow Dark Surface (H15) Very Shallow Surface (H15) Very Shallow Shallow Dark Surface	
Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Red Parent Material (TF Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (H15) Very Shallow Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remail Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Present? Yes wetland hydrology must be puriless disturbed or problem strictive Layer (if present): Fill prism	
tric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	
Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Red Parent Material (TF Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (H15) Very Shallow Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remail Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Present? Yes wetland hydrology must be puriless disturbed or problem strictive Layer (if present): Fill prism	
Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Red Parent Material (TF Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (H15) Very Shallow Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remail Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Present? Yes wetland hydrology must be puriless disturbed or problem strictive Layer (if present): Fill prism	
Histosol (A1)	
Histic Epipedon (A2)	ydric Soils³:
Black Histic (A3)	
Hydrogen Sulfide (A4)	- 2)
Depleted Below Dark Surface (A12)	ace (TF12)
Thick Dark Surface (A12)	rks)
Sandy Mucky Mineral (S1)	
Sandy Gleyed Matrix (S4)	
Sandy Gleyed Matrix (S4)	tation and
e: Fill prism th (inches): 4 inches PROLOGY Itland Hydrology Indicators: arry Indicators (minimum of one required; check all that apply) Surface Water (A1)	
DROLOGY tland Hydrology Indicators: Surface Water (A1)	
DROLOGY Iland Hydrology Indicators: Secondary Indicators (2 or more Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leav	
DROLOGY Stand Hydrology Indicators: Pary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Satic Crust (B11) Water Marks (B2) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Secondary Indicators (2 or more Secondary Indicators (2 or more Water-Stained Leaves (B9) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Mater A1, 2, 4A, and 4B) Secondary Indicators (2 or more Mater Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Drainage Patter	
Surface Water (A1)	
Surface Water (A1)	
High Water Table (A2)	required)
Saturation (A3))
Water Marks (B1)	
Sediment Deposits (B2)	
Drift Deposits (B3)	02)
Algal Mat or Crust (B4)	I Imagery (C9)
Iron Deposits (B5) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ FAC-Neutral Test (D5) Surface Soil Cracks (B6) ☐ Stunted or Stresses Plants (D1) (LRR A) ☐ Raised Ant Mounds (D6) (L Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D	
Surface Soil Cracks (B6)	
Inundation Visible on Aerial Imagery (B7) Uher (Explain in Remarks) Frost-Heave Hummocks (D	
	-
)7)
Sparsely Vegetated Concave Surface (B8)	
eld Observations:	
rface Water Present? Yes No Depth (inches):	
ater Table Present? Yes No Depth (inches):	
truration Present? Yes	
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Yes □ No
	Yes □ No -
emarks: No saturation or water table observed in sample plot	Yes □ No

Project Site:	Sound Tran	nsit E	ast Link Extens	sion Proje	<u>ect</u>			City/Cour	nty:	Belle	vue/Kin	<u>ıg</u>		Sa	mpling	Date:	Ma	y 15, 2	2013
Applicant/Owner:	Sound Tran	nsit									S	State:	<u>WA</u>	Sa	mpling	Point:	BN SP	SF No W	<u>orth</u>
Investigator(s):	C Douglas	& J. F	<u>Pursley</u>							Se	ection, T	owns	ship, Ra	ange:	S29, T	24N, R5E			
Landform (hillslope, te	errace, etc.):	N	larrow area bet	ween dev	/elopm	<u>ent</u>	Loca	al relief (cond	ave, c	conve	x, none):	concav	<u>⁄e</u>		Slop	e (%):	0%	to 2%
Subregion (LRR):	<u>A</u>			Lat:	47.62	N			Lo	ong:	122.18	W				Datum:		_	
Soil Map Unit Name:	Kitsap silt	loam	1										NWI cl	assific	ation:	None N	Ларрес	<u>t</u>	
Are climatic / hydrolog	ic conditions	on th	ne site typical f	or this tin	ne of ye	ear?	Υ	'es ⊠	١	No		If no,	explair	n in Re	emarks.)			
Are Vegetation	, Soil [□,	or Hydrology	□, s	ignifica	ntly di	sturbed	d? Are	Norm	al Cir	cumsta	nces'	' preser	nt?		Yes	\boxtimes	No	
Are Vegetation	, Soil [□,	or Hydrology	□, n	aturally	prob	lematic	? (If ne	eded	, expl	ain any	ansv	vers in I	Rema	rks.)				
SUMMARY OF FIN	IDINGS – A	Δttac	ch site man	showing	ı samı	nlino	noint	locations	tran	sect	s imn	orta	nt feat	tures	etc				
Hydrophytic Vegetation			m one map c	Yes	<u>, ca</u>	No		10000110110	, trair		.c,p				, σισ.				
Hydric Soil Present?				Yes	⊠	No		Is the Sam								Yes	\boxtimes	No	
Wetland Hydrology Pr	resent?			Yes	⊠	No		within a We	etland	l?									
		io loo	ated in narrow					with dovolor	mont	looot	od outo	ido th	o railra	ad tra	oko M	otland is a	norro		
depression	on with culver of the wetland	rts at	both ends that uded standing	are conr	ected t	to oth	er wetla	ands in the a	ea. V	Vetlar	nd inclu	des d	epress	ional a	and slop	e HGM cl	asses.	The	south
VEGETATION - U	se scientifi	ic na	ames of plan	nts															
Tree Stratum (Plot siz	e: 30 foot rad	dius)		Absolu % Cov		Domii Speci		Indicator Status	Dor	minaı	nce Tes	t Wo	rkshee	et:					
1. Populus trichocar	<u>pa</u>			<u>60</u>		<u>ves</u>	<u> </u>	FAC	Nur	nher	of Domi	nant	Snecie	e					
2. <u>Salix lasiandra</u>				15		yes		FACW			OBL, F					<u>3</u>			(A)
3									Tota	al Nu	mber of	Dom	inant						(D)
4											Across					<u>4</u>			(B)
50% = <u>1</u> , 20% = <u>1</u>				<u>75</u>	:	= Tota	al Cove	r	Per	cent	of Domi	nant	Species	s		75			(A/D)
Sapling/Shrub Stratur	<u>n</u> (Plot size: <u>´</u>	15 fo	ot radius)						Tha	t Are	OBL, F	ACW	, or FA	C:		<u>75</u>			(A/B)
1. Rubus armeniacu	<u>s</u>			<u>15</u>		yes		<u>FACU</u>	Pre	valer	nce Inde	ex wo	orkshe	et:					
2. Solanum dulcama	<u>ıra</u>			<u>45</u>		<u>ves</u>		<u>FACW</u>			Tota	al % (Cover c	of:		Multip	oly by:		
Spiraea douglasii				<u>10</u>		<u>no</u>		<u>FACW</u>	OBI	L spe	cies			_		x1 =			
4									FAC	CW s	pecies			_		x2 =			
5									FAC	C spe	cies			_		x3 =	_		
50% = <u>1</u> , 20% = <u>1</u>				<u>70</u>	:	= Tota	al Cove	r	FAC	CU sp	ecies			_		x4 =	_		
Herb Stratum (Plot siz	ze: <u>3 foot radi</u>	ius)							UPI	L spe	cies			_		x5 =			
1					. ,				Col	umn ⁻	Totals:			(A)				((B)
2												Pr	evalend	ce Inde	ex = B/A	\ =			
3									Нус	droph	ıytic Ve	geta	tion Inc	dicato	rs:				
4										1 –	Rapid	Test	for Hyd	rophyl	tic Vege	tation			
5					. ,					2 -	Domina	ance '	Test is	>50%					
6										3 -	Prevale	ence l	ndex is	s <u><</u> 3.0¹					
7																ide suppo	orting		
8											data in	Rem	arks or	on a s	separate	e sheet)			
9					. ,					5 -	Wetland	d Nor	n-Vascı	ular Pl	ants ¹				
10										Pro	blemati	іс Ну	drophyt	tic Vec	getation	1 (Explain)			
11									1								_		
50% = <u>0</u> , 20% = <u>0</u>				<u>0</u>	:	= Tota	al Cove	r			rs of hyd					ology mus ic.	t		
Woody Vine Stratum	(Plot size: 3 f	foot ra	<u>adius</u>)						·										
1					. ,														
2					. ,				_	droph getati	-			Yes			No		
50% =, 20% =				<u>0</u>	:	= Tota	al Cove	r	_	sent'				103				,	ш
% Bare Ground in He	rb Stratum <u>10</u>	00																	
Remarks:	75% dominar	nt we	tland vegetatio	n per the	Domin	ance	Test												
ĺ																			

SOIL Sampling Point: BNSF North SPW Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Color (moist) Remarks (inches) Color (moist) % % Type¹ Loc² Texture 10YR 3/1 100 Silt loam w/dense root layer 0 to 2 None None None None 2 to 6 10YR 3/1 100 None None None None Silt loam 6 to 18+ 10YR 5/1 90 10YR 5/4 10 w/gravel D Silt loam ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) П \Box Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) \boxtimes Depleted Matrix (F3) Depleted Below Dark Surface (A11) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 chroma with redox features **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Salt Crust (B11) Saturation (A3) Drainage Patterns (B10) П \boxtimes Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Stunted or Stresses Plants (D1) (LRR A) Surface Soil Cracks (B6) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes \boxtimes No Depth (inches): 1 inch Yes \boxtimes Water Table Present? No Depth (inches): Surface Saturation Present? Wetland Hydrology Present? \boxtimes No Yes \boxtimes No Depth (inches): Surface Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Surface water1 inch deep at sample plot location, majority of the wetland included standing water at the time of the investigation. Remarks:

Project Site:	Sound Transit East Link Extension	on Project		City/Coun	ty: <u>Bellevue/King</u>	Sampling Date:		23, 2013
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	BNS Sout SPW	hwest
Investigator(s): Landform (hillslope, tel Subregion (LRR):	C Douglas & J. Pursley rrace, etc.): Area adjacent to F	RR Tracks Lat: <u>47.62</u>		relief (conca	Section, Township, Ran ave, convex, none): <u>concave</u> Long: <u>122.18W</u>		: (%):	0% to 2%
Soil Map Unit Name:	Alderwood gravelly sandy loam	=		_	<u> </u>	ssification: None Ma	<u>apped</u>	
·	ic conditions on the site typical for	_			No [(If no, explain i	•	_	
Are Vegetation ,			antly disturbed		Normal Circumstances" present		\boxtimes	No 🗆
Are Vegetation □,	Soil □, or Hydrology	□, naturall	y problematic?	(IT ne	eded, explain any answers in Re	marks.)		
SUMMARY OF FIN	DINGS – Attach site map sh	nowing sam	npling point	locations,	transects, important featu	res, etc.		
Hydrophytic Vegetation	n Present?	Yes 🛚	No 🗆					
Hydric Soil Present?		Yes 🗆		Is the Samp within a We		Yes		No 🛛
Wetland Hydrology Pre	esent?	Yes 🗆	No 🛛					
	BNSF Southwest is located adjace ses. Jurisdictional ditch along rail					Vetland includes depre	ssional	I and slope
VEGETATION – Us	se scientific names of plants		Daminant	la dia atau				1
Tree Stratum (Plot size	e: 30 foot radius)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet:			
1					Number of Dominant Species	. <u>1</u>		(A)
2					That Are OBL, FACW, or FAC			(7.7)
3					Total Number of Dominant	<u>3</u>		(B)
4					Species Across All Strata:	_		()
50% = <u>0</u> , 20% = <u>0</u>		<u>0</u>	= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC	. 37		(A/B)
	(Plot size: 15 foot radius)							
Cytisus scoparius		<u>40</u>	<u>yes</u>	<u>UPL</u>	Prevalence Index worksheet			
2. Rubus armeniacus	<u>}</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	Total % Cover of:	•	y by:	
3 4.					OBL species	x1 = x2 =		_
5.					FACW species	x3 =		_
50% = <u>1</u> , 20% = <u>1</u>		<u></u>	= Total Cover		FACU species	x4 =		_
	o: 2 foot radius)	<u>00</u>	- Total Cover		•	x5 =		_
Herb Stratum (Plot siz	e. <u>5 100t faulus</u>)	60		ГАС	UPL species			— (D)
Agrostis capillaris		<u>60</u>	<u>yes</u>	FAC	Column Totals:	(A)		(B)
2. Phalaris arundinad		<u>5</u>	<u>no</u>	FACW		Index = B/A =		
 Tanacetum vulgar Trifolium pratense 	_	<u>5</u>	no no	<u>UPL</u> <u>FACU</u>	Hydrophytic Vegetation India 1 – Rapid Test for Hydro			
5.		<u>10</u>	<u>no</u>	FACU	□ 1 - Rapid Test for Hydro□ 2 - Dominance Test is >5			
6.					_			
7.					_	_		
8.					4 - Morphological Adapta data in Remarks or or		ting	
9.					5 - Wetland Non-Vascula	ar Plants ¹		
10					☐ Problematic Hydrophytic			
11					— Froblematic Hydrophytic	vegetation (Explain)		
50% = <u>1</u> , 20% = <u>0</u>		80	= Total Cover		¹ Indicators of hydric soil and w			
-	Plot size: 3 foot radius)				be present, unless disturbed o	r problematic.		
1				ŀ				
2					Hydrophytic			_
50% =, 20% =		0	= Total Cover		•	es 🗆	No	⊠
% Bare Ground in Her					Present?			
	37% dominant wetland vegetation	per the Domii	nance Test.					
remains.	•							

SOIL Sampling Point: BNSF Southwest SPW

Depth	Matrix				Redox Fea	atures		_				
inches)	Color (moist)	%	Cold	or (mois	st) %	Type ¹	Loc ²	Texture		Remark	S	
0 to 18+	10YR 5/3	<u>85</u>	<u>10</u>	YR 4/6	<u>15</u>	<u>D</u>	<u>M</u>	Sandy clay	w/gravel			
			-									
			-									
			-									
			-									
			_									
			_									
		lotion DM	-Poduso	d Motrix		antad Sand	Croino ² l d		E Lining, M=Matrix			
	oncentration, D=Dep Indicators: (Applica					oaleu Sanu	Giallis. Lo		rs for Problemation		coile ³ :	
		Die to all	LKKS, un	_	Sandy Redox (S5)				cm Muck (A10)	, riyuric s	ouis .	
_	Epipedon (A2)				Stripped Matrix (S6	()		_	ed Parent Material	(TF2)		
	Histic (A3)				Loamy Mucky Mine		cept MLRA 1)		ery Shallow Dark S		F12)	
_	gen Sulfide (A4)				Loamy Gleyed Mat				ther (Explain in Re	-	,	
	ed Below Dark Surfa	ice (A11)			Depleted Matrix (F3					,		
	Dark Surface (A12)	, ,		_	Redox Dark Surfac	•						
Sandy	Mucky Mineral (S1)				Depleted Dark Surf	ace (F7)		³ Indicator	rs of hydrophytic ve	egetation	and	
Sandy	Gleyed Matrix (S4)				Redox Depressions	s (F8)			nd hydrology must s disturbed or prob		ıt,	
estrictive L	_ayer (if present):								, , , , , , , , , , , , , , , , , , ,			
уре:												
epth (inche	s):						Hydric Soils P	resent?	Yes		No	Σ
	3 chroma with redo	x features										
IYDROLO												
IYDROLO Vetland Hyd	GΥ			all that a	apply)			Secondary	Indicators (2 or m	ore requir	ed)	
IYDROLO Vetland Hyd Primary Indic	GY drology Indicators:				apply) Water-Stained Lea	ves (B9)			Indicators (2 or m		ed)	
YDROLO /etland Hydrimary Indic	GY drology Indicators: eators (minimum of o					. ,	В)	☐ Wate		(B9)	ed)	
IYDROLO Vetland Hyd rimary Indic Surfac	GY drology Indicators: cators (minimum of o				Water-Stained Lea	. ,	В)	☐ Wate	er-Stained Leaves	(B9)	ed)	
HYDROLO Wetland Hyd rimary Indic Surfac High V	GY drology Indicators: cators (minimum of o be Water (A1) Vater Table (A2)				Water-Stained Lear (except MLRA 1, 2	2, 4A, and 4	В)	☐ Wate (MLF	er-Stained Leaves	(B9) B)	ed)	
HYDROLO Wetland Hyd rimary Indic Surfac High V Satura Water	GY drology Indicators: eators (minimum of o be Water (A1) Vater Table (A2) stion (A3)				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11)	es (B13)	в)	Wate (MLF	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10	(B9) B) (b)		
IYDROLO Vetland Hyd rimary Indic Surfac High V Satura Water Sedim	GY drology Indicators: eators (minimum of o e Water (A1) Vater Table (A2) ution (A3) Marks (B1)				Water-Stained Lead (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat	es (B13)		☐ Wate (MLF ☐ Drair ☐ Dry-5	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab	(B9) B) I) Ie (C2) erial Image		
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Water Sedim Drift D Algal I	GY drology Indicators: eators (minimum of of othe Water (A1) Vater Table (A2) eation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduc	es (B13) Odor (C1) eres along L ed Iron (C4)	.iving Roots (C3	Wate (MLF Drain Dry-5 Satu Geor	er-Stained Leaves (RA 1, 2, 4A, and 4) hage Patterns (B10) Season Water Tab ration Visible on Amorphic Position (Elow Aquitard (D3)	(B9) B) I) Ie (C2) erial Image		
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Water Sedim Drift D Algal I	GY drology Indicators: eators (minimum of o be Water (A1) Vater Table (A2) etion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduc Recent Iron Reduction	es (B13) Odor (C1) eres along L ed Iron (C4) tion in Tilled	iving Roots (C3) Soils (C6)		er-Stained Leaves (RA 1, 2, 4A, and 4) hage Patterns (B10) Season Water Tab ration Visible on Admorphic Position (D3) Neutral Test (D5)	(B9) B) I) Ie (C2) Perial Image D2)	ery (C9)	
HYDROLO Wetland Hyd rimary Indic Surfac High V Satura Water Sedim Drift D Algal I Surfac	GY drology Indicators: eators (minimum of of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) et Soil Cracks (B6)	ne require	d; check a		Water-Stained Lead (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduct Recent Iron Reduct Stunted or Stresses	es (B13) Odor (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Geason Water Tab ration Visible on Acmorphic Position (Dow Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6)	(B9) B) Ile (C2) erial Image (D2)	ery (C9)	
HYDROLO Vetland Hyd rimary Indic Surfac High V Satura Water Sedim Drift D Algal I Iron D Surfac	GY drology Indicators: eators (minimum of ore Water (A1) Vater Table (A2) eation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ee Soil Cracks (B6) eation Visible on Aeria	ne require	d; check a		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduc Recent Iron Reduction	es (B13) Odor (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	er-Stained Leaves (RA 1, 2, 4A, and 4) hage Patterns (B10) Season Water Tab ration Visible on Admorphic Position (D3) Neutral Test (D5)	(B9) B) Ile (C2) erial Image (D2)	ery (C9)	
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Sedim Sedim Iron D Surfac	GY drology Indicators: cators (minimum of or the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Wat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Aeria	ne require	d; check a		Water-Stained Lead (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduct Recent Iron Reduct Stunted or Stresses	es (B13) Odor (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Geason Water Tab ration Visible on Acmorphic Position (Dow Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6)	(B9) B) Ile (C2) erial Image (D2)	ery (C9)	
HYDROLO Vetland Hyd rimary Indic Surfac High V Satura Sedim Drift D Iron D Surfac	GY drology Indicators: cators (minimum of or the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6) ation Visible on Aeria tely Vegetated Concar vations:	ne require	d; check a		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduc Recent Iron Reduct Stunted or Stresses Other (Explain in R	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Geason Water Tab ration Visible on Acmorphic Position (Dow Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6)	(B9) B) Ile (C2) erial Image (D2)	ery (C9)	
YPDROLO /etland Hydrimary Indice Surface High V Satura Water Sedim Iron D Surface Inunda Sparse ield Observariace Water	GY drology Indicators: eators (minimum of or the Water (A1) Vater Table (A2) eation (A3) Marks (B1) eent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Aeria ely Vegetated Concavations: ear Present? Year	ne require al Imagery ave Surface	d; check a (B7) e (B8)		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduc Recent Iron Reduci Stunted or Stresses Other (Explain in R	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Geason Water Tab ration Visible on Acmorphic Position (Dow Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6)	(B9) B) Ile (C2) erial Image (D2)	ery (C9)	
IYDROLO Vetland Hyd rimary Indic Surfac High V Satura Water Sedim Iron D Surfac Inunda Sparse ield Observ Vater Table	GY drology Indicators: cators (minimum of or the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca vations: er Present? Present?	al Imagery ave Surface	d; check a		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduc Recent Iron Reduci Stunted or Stresses Other (Explain in R	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3) Soils (C6)) (LRR A)	Wate (MLF Drain Dry-5 Satur Satur Shall FAC: Raise Frost	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Season Water Tab ration Visible on Admorphic Position (Down Aquitard (D3) Neutral Test (D5) and Ant Mounds (D6) Heave Hummock	(B9) B) Ile (C2) Brian Image (C2) (B) (LRR A S (D7)	ery (C9)	
HYDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Iron D Surface Inunda Sparse Gurface Water Vater Table Saturation Preserved	GY drology Indicators: cators (minimum of or the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Aeria ely Vegetated Conca vations: er Present? Present?	ne require al Imagery ave Surface	d; check a (B7) e (B8)		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduc Recent Iron Reduci Stunted or Stresses Other (Explain in R	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3) Soils (C6)) (LRR A)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Season Water Tab ration Visible on Admorphic Position (Down Aquitard (D3) Neutral Test (D5) and Ant Mounds (D6) Heave Hummock	(B9) B) Ile (C2) erial Image (D2)	ery (C9)	No
HYDROLO Vetland Hyd Primary Indic Surface High V Satura Water Sedim Iron D Surface Inunda Sparse Gurface Water Vater Table Saturation Princludes cap	GY drology Indicators: eators (minimum of or the Water (A1) Vater Table (A2) eation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Aeria ely Vegetated Concar vations: er Present? Yeresent? Yeresent?	al Imagery ave Surface es es es	d; check a		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduc Recent Iron Reduci Stunted or Stresses Other (Explain in R Depth (inches) Depth (inches)	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3 Soils (C6)) (LRR A)	Wate (MLF Drain Dry-5 Satur Satur Shall FAC: Raise Frost	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Season Water Tab ration Visible on Admorphic Position (Down Aquitard (D3) Neutral Test (D5) and Ant Mounds (D6) Heave Hummock	(B9) B) Ile (C2) Brian Image (C2) (B) (LRR A S (D7)	ery (C9)	No
Primary Indice Primary Indice Surface High V Satura Water Sedim Drift D Algal I Iron D Surface Inunda Sparse Field Observ Surface Water Water Table Saturation Princludes cap	GY drology Indicators: eators (minimum of of the Water (A1) Vater Table (A2) attion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ee Soil Cracks (B6) attion Visible on Aeria ely Vegetated Concavations: er Present? Present? Yeresent? Yeresent? Yeresent?	al Imagery ave Surface es es es	d; check a		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizosphi Presence of Reduc Recent Iron Reduci Stunted or Stresses Other (Explain in R Depth (inches) Depth (inches)	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3 Soils (C6)) (LRR A)	Wate (MLF Drain Dry-5 Satur Satur Shall FAC: Raise Frost	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Season Water Tab ration Visible on Admorphic Position (Down Aquitard (D3) Neutral Test (D5) and Ant Mounds (D6) Heave Hummock	(B9) B) Ile (C2) Brian Image (C2) (B) (LRR A S (D7)	ery (C9)	No
HYDROLO Vetland Hydrimary Indic Surface High V Satura Water Sedim Iron D Iron D Iron D Iron D Surface Inunda Sparse Gurface Water Vater Table Staturation Princludes cap	GY drology Indicators: eators (minimum of of the Water (A1) Vater Table (A2) attion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ee Soil Cracks (B6) attion Visible on Aeria ely Vegetated Concavations: er Present? Present? Yeresent? Yeresent? Yeresent?	al Imagery ave Surface es gauge, me	(B7) e (B8) No No No onitoring v	UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU	Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses Other (Explain in R Depth (inches) Depth (inches) Depth (inches)	es (B13) Door (C1) eres along L ed Iron (C4) tion in Tilled s Plants (D1 emarks)	iving Roots (C3 Soils (C6)) (LRR A)	Wate (MLF Drain Dry-5 Satur Satur Shall FAC: Raise Frost	er-Stained Leaves of RA 1, 2, 4A, and 4 hage Patterns (B10 Season Water Tab ration Visible on Admorphic Position (Down Aquitard (D3) Neutral Test (D5) and Ant Mounds (D6) Heave Hummock	(B9) B) Ile (C2) Brian Image (C2) (B) (LRR A S (D7)	ery (C9)	No

Project Site:	Sound Transit East Link Extension	on Project		City/Coun	ty: <u>Bellevue/King</u>	Sampling Date:	April 23, 2013
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	BNSF Southwest SPW
Investigator(s):	C Douglas & J. Pursley				Section, Township, Ran	ge: <u>S29, T24N, R5E</u>	
Landform (hillslope, ter	rrace, etc.): Area adjacent to F	RR Tracks	Local	relief (conca	ave, convex, none): <u>concave</u>	Slope	e (%): <u>0% to 2%</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.62</u>	<u>2N</u>		Long: <u>122.18W</u>	Datum: _	
Soil Map Unit Name:	Alderwood gravelly sandy loam	<u>.</u>			NWI clas	sification: None Ma	apped
Are climatic / hydrologi	ic conditions on the site typical for	this time of y	ear? Ye	s 🛛	No	n Remarks.)	
Are Vegetation \square ,	Soil □, or Hydrology	□, signification	antly disturbed	? Are "I	Normal Circumstances" present?	Yes	⊠ No □
Are Vegetation \square ,	Soil ☐, or Hydrology	☐, naturall	y problematic?	(If ne	eded, explain any answers in Re	emarks.)	
SUMMARY OF FIN	DINGS – Attach site map sh	nowing sam	npling point	locations,	transects, important featu	res, etc.	
Hydrophytic Vegetation	n Present?	Yes 🛚	No 🗆				
Hydric Soil Present?		Yes 🛛		ls the Samp within a We		Yes	⊠ No □
Wetland Hydrology Pre	esent?	Yes 🛚	No 🗆				
	BNSF Southwest is located adjace ses. Jurisdictional ditch along rail					Vetland includes depres	ssional and slope
VEGETATION – Us	se scientific names of plants	6					
Tree Stratum (Plot size	e: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1			<u></u>		Number of Dominant Species		(4)
2					That Are OBL, FACW, or FAC	<u>1</u>	(A)
3					Total Number of Dominant	<u>1</u>	(B)
4					Species Across All Strata:	<u> -</u>	(5)
50% = <u>0</u> , 20% = <u>0</u>		<u>0</u>	= Total Cover		Percent of Dominant Species	<u>100</u>	(A/B)
•	n (Plot size: 15 foot radius)				That Are OBL, FACW, or FAC	· · · · · · · · · · · · · · · · · · ·	
1					Prevalence Index worksheet		
2					Total % Cover of:	Multiply	<u>v by:</u>
3					OBL species	x1 =	
4					FACW species	x2 =	
5					FACILIAN STATES	x3 =	
$50\% = \underline{0}, 20\% = \underline{0}$	a. 2 fact radius)	<u>0</u>	= Total Cover		FACU species	x4 =	
Herb Stratum (Plot siz	e. <u>5 100t radius</u>)	00		F40	UPL species	x5 =	
1. Agrostis capillaris		<u>60</u>	<u>yes</u>	FAC		(A)	(B)
2. <u>Dipsacus fullonum</u>	•	1	<u>no</u>	FAC		Index = B/A =	
3. <u>Phalaris arundinad</u>	<u>:ea</u>	<u>20</u>	<u>no</u>	FACW	Hydrophytic Vegetation India		
4. <u>Poa pratensis</u>		<u>20</u>	<u>no</u>	FAC	☐ 1 – Rapid Test for Hydro	-	
5. <u>Rumex crispus</u>		<u>1</u>	<u>no</u>	<u>FAC</u>			
6					☐ 3 - Prevalence Index is ≤		
7					4 - Morphological Adapta data in Remarks or or	itions ¹ (Provide support	ting
8					5 - Wetland Non-Vascula	. ,	
10					_		
10					☐ Problematic Hydrophytic	Vegetation' (Explain)	
11 50% = <u>1</u> , 20% = <u>0</u>		100	= Total Cover		¹ Indicators of hydric soil and w	etland hydrology must	
-	Plot size: 3 foot radius)	100	- Total Cover		be present, unless disturbed o	· problematic.	
1	1 100 0120. <u>0 1000 144140</u>)			ŀ			
2				-	Hydrophytic		
50% =, 20% = _		0	= Total Cover		•	es 🛛	No 🗆
% Bare Ground in Her		-	. 5 50701		Present?		
1	00% dominant wetland vegetation	n per the Dom	ninance Test				
Remarks:	22.5 asimilarit wouldn't vogotation	. , כי, ווטם סוו					

SOIL Sampling Point: BNSF Southwest

inches)	Color (moint)	0/		olor (mo	iot)	Redox Feat	Type ¹	Loc ²					Remark			
nches)	Color (moist)	100		None	151)				Textu		w/gravel	ı	Remain	.5		
0 to 2	10YR 4/2	100 70	1	None	1	None 30	None D	None M	Sand Sand		w/gravel	<u>ı</u> I & cobble	0			
2 to 6	<u>10YR 4/2</u> 10YR 4/2	<u>70</u> <u>60</u>	_	<u>0YR 5/</u> 0YR 5/		<u>30</u> 40	<u>D</u>	<u>М</u> М	<u>Sand</u> Sand				<u>E</u>			
6 to 18+	10111 4/2	<u>00</u>		0 1 IX 3/	<u>.</u>	40	<u>D</u>	<u>IVI</u>	Sanu	y Siit	<u>w/gravel</u>	<u>!</u>				
			=							_						
		-	=							_	-					
			-													
			-													
vpe: C= Co	oncentration, D=De	pletion, R	- M=Reduc	ed Matr	ix, CS=C	overed or Coa	ated San	d Grains.	² Location: F	 L=Pore	Lining, M	=Matrix				
	ndicators: (Applic										s for Prob		Hydric :	Soils ³	:	
] Histoso			-,-			Redox (S5)					cm Muck (,			
_	Epipedon (A2)				-	Matrix (S6)					ed Parent N		TF2)			
_	Histic (A3)						al (F1) (e :	xcept MLRA 1			ery Shallow			F12)		
_	gen Sulfide (A4)				-	Gleyed Matrix		•	, –		ther (Expla		-	,		
_	ed Below Dark Sur	ace (A11)	⊠	•	d Matrix (F3)	. ,		_		()		,			
_	Dark Surface (A12)				-	Dark Surface										
	Mucky Mineral (S1)				d Dark Surfa			³ lr	dicator	s of hydrop	phytic ve	getation	and		
_	Gleyed Matrix (S4)	,			-	Depressions (d hydrolog disturbed			nt,		
	_ayer (if present):						,			unicsa	disturbed	or proble	mauc.			
уре:	, , ,															
epth (inche	s).							Hydric Soils	s Present?			Yes	\boxtimes	No		
emarks:	2 chroma with red	ox														
YDROLO	GY															
YDROLO	GY drology Indicators	:	rad: chack	all tha	t apply)				San	ondany	Indicators	(2 or mo	ure requi	red)		
rimary Indic	GY drology Indicators ators (minimum of	:	red; check			tained Louve	oo (PO)				Indicators	`		red)		
YDROLO /etland Hyd rimary Indic	GY drology Indicators eators (minimum of the Water (A1)	:	red; check	call tha	Water-S	Stained Leave	` ,	AR)	Sec 🗆	Wate	r-Stained L	Leaves (E	39)	red)		
YDROLO /etland Hyd rimary Indic Surfac High V	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2)	:	red; check	⊠	Water-S	MLRA 1, 2,	` ,	4B)		Wate	r-Stained L	Leaves (E	39) 3)	red)		
YDROLO Vetland Hydrimary Indic Surfac High V Satura	GY drology Indicators eators (minimum of the Water (A1) Vater Table (A2) attion (A3)	:	red; check		Water-S (except Salt Cru	MLRA 1, 2, st (B11)	4A, and	4B)		Wate (MLR Drain	r-Stained L RA 1, 2, 4A age Patter	Leaves (E a, and 4B rns (B10)	39) 3)	red)		
YDROLO Vetland Hydrimary Indic Surface High V Satura Water	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) stion (A3) Marks (B1)	:	red; check		Water-S (except Salt Cru Aquatic	MLRA 1, 2, est (B11) Invertebrates	4A , and	4B)		Wate (MLR Drain Dry-S	er-Stained L RA 1, 2, 4A Lage Patter Season Wa	Leaves (E Leaves (E Leaves (B Leaves (B	39) 3) e (C2)	•	20)	
YDROLO etland Hydrimary Indic Surface High V Satura Water Sedim	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2)	:	red; check		Water-S (except Salt Cru Aquatic Hydroge	MLRA 1, 2, est (B11) Invertebrates en Sulfide Od	4A , and see (B13) for (C1)			Wate (MLR Drain Dry-S Satur	r-Stained L RA 1, 2, 4A age Patter Season Wa ration Visib	Leaves (E A, and 4B rns (B10) ater Table ble on Aer	39) (6) (C2) (rial Imag	•	¢9)	
YDROLO Vetland Hyd rimary Indic Surfac High V Satura Water Sedim Drift D	GY drology Indicators eators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3)	:	red; check		Water-S (except) Salt Cru Aquatic Hydrogo Oxidize	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher	4A, and s (B13) lor (C1) res along	Living Roots (C3)	Wate (MLR Drain Dry-S Satur Geor	r-Stained L RA 1, 2, 4A age Patter Season Wa ration Visib norphic Po	Leaves (E A, and 4B rns (B10) ater Table ble on Aer osition (D2	39) (6) (C2) (rial Imag	•	229)	
YDROLO Yetland Hydrimary Indic Surfac High V Satura Water Sedim Drift D Algal N	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) stion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)	:	red; check		Water-S (except Salt Cru Aquatic Hydrogo Oxidize Presence	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher ee of Reduced	4A, and s (B13) lor (C1) res along d Iron (C4	Living Roots (0	C3)	Wate (MLR Drain Dry-S Satur Geon Shall	r-Stained L RA 1, 2, 4A lage Patter Season Wa ration Visib norphic Po ow Aquitar	Leaves (E a, and 4B rns (B10) ater Table ble on Aer osition (D2	39) (6) (C2) (rial Imag	•	(20)	
YDROLO /etland Hydrimary Indic Surface High V Satura Water Sedim Drift D Iron D	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5)	:	red; check		Water-S (except Salt Cru Aquatic Hydrogo Oxidize Present	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher de of Reduced Iron Reduction	4A, and sign (B13) lor (C1) res along d Iron (C4) on in Tille	Living Roots (64) ad Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall	rr-Stained L RA 1, 2, 4A rage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te	Leaves (E a, and 4B rns (B10) ater Table ble on Aer sition (D2 rd (D3) est (D5)	(C2) rial Imag	ery (C	C(9)	
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YDROLO etland Hydrimary Indice Surface High V Satura Water Sedim Drift D Algal N Iron Do Surface	GY drology Indicators eators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6) tation Visible on Aer	: one requi	y (B7)		Water-S (except) Salt Cru Aquatic Hydrogo Oxidize Presence Recent Stunted	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher de of Reduced Iron Reduction	4A, and s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (64) ad Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geor Shall FAC- Raise	rr-Stained L RA 1, 2, 4A rage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te	Leaves (EA, and 4B rns (B10) ater Table ole on Aer sistion (D2 rd (D3) est (D5) unds (D6)	39) (C2) (C2) (a) (LRR A	ery (C	C9)	
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Hon Della Surface Inunda	GY drology Indicators eators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6) tation Visible on Aer tely Vegetated Concepts	: one requi	y (B7)		Water-S (except) Salt Cru Aquatic Hydrogo Oxidize Presence Recent Stunted	MLRA 1, 2, ist (B11) Invertebrates en Sulfide Od d Rhizospher se of Reduced Iron Reduction or Stresses	4A, and s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (64) ad Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geor Shall FAC- Raise	r-Stained L RA 1, 2, 4A rage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te	Leaves (EA, and 4B rns (B10) ater Table ole on Aer sistion (D2 rd (D3) est (D5) unds (D6)	39) (C2) (C2) (a) (LRR A	ery (C	C9)	
YDROLO Vetland Hydromary Indication Surface High V Satura Sedim Sedim Inon Della Surface Inunda Sparse Seldd Observa	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6) tation Visible on Aer tely Vegetated Concevations:	: one requi	y (B7) ice (B8)		Water-S (except Salt Cru Aquatic Hydrog Oxidize Present Recent Stunted Other (f	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Od d Rhizospher ce of Reduced Iron Reduction or Stresses I	4A, and s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (64) ad Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geor Shall FAC- Raise	r-Stained L RA 1, 2, 4A rage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te	Leaves (EA, and 4B rns (B10) ater Table ole on Aer sistion (D2 rd (D3) est (D5) unds (D6)	39) (C2) (C2) (a) (LRR A	ery (C	C9)	
YDROLO Vetland Hydrimary Indice Surface High V Satura Sedim Drift D Surface Inon Do Inon Do Surface Sparse Vetla Observa	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6) ation Visible on Aer tely Vegetated Cond	: one requi	y (B7) ice (B8)		Water-S (except Salt Cru Aquatic Hydrogu Oxidize Present Recent Stunted Other (E	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher be of Reduced Iron Reduction or Stresses in Explain in Renatt (inches):	4A, and s (B13) lor (C1) res along d Iron (C4) on in Tille Plants (D marks)	Living Roots (04) and Soils (C6) and (LRR A)	C3)	Wate (MLR Drain Dry-S Satur Geor Shall FAC- Raise	r-Stained L RA 1, 2, 4A rage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te	Leaves (EA, and 4B rns (B10) ater Table ole on Aer sistion (D2 rd (D3) est (D5) unds (D6)	39) (C2) (C2) (a) (LRR A	ery (C	259)	
Surface	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) the Soil Cracks (B6) ation Visible on Aer tely Vegetated Concevations: ter Present?	: one requi	y (B7) ice (B8)		Water-S (except Salt Cru Aquatic Hydrogu Oxidize Present Recent Stunted Other (E	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Od d Rhizospher ce of Reduced Iron Reduction or Stresses I	4A, and s (B13) lor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (04) ad Soils (C6) b1) (LRR A)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	rr-Stained L RA 1, 2, 4A lage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te led Ant Mou -Heave Hu	Leaves (E.	39) (C2) (C2) (a) (LRR A	ery (C	259)	
YDROLO Vetland Hydrimary Indice Surface Water Sedim Drift D Surface Inundae Sparse Vetla Observator	GY drology Indicators eators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6) te Soil Cracks (B6) tely Vegetated Concevations: ter Present? Present?	: one requi	y (B7) ice (B8)] No] No		Water-S (except Salt Cru Aquatic Hydrogo Oxidize Present Recent Stunted Other (t	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher be of Reduced Iron Reduction or Stresses in Explain in Renatt (inches):	4A, and s (B13) lor (C1) res along d Iron (C4) on in Tille Plants (D marks)	Living Roots (44) ed Soils (C6) 11) (LRR A)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	rr-Stained L RA 1, 2, 4A lage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te led Ant Mou -Heave Hu	Leaves (E.	39) (C2) (C2) (a) (LRR A	ery (C	No.	
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Iron Do Inunda Sparse eld Observation Princludes cap	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) the Soil Cracks (B6) tation Visible on Aer tely Vegetated Conditions ter Present? The service of the	: one requi ial Imager cave Surfa /es [/e	y (B7) ace (B8)] No] No] No		Water-S (except Salt Cru Aquatic Hydrogy Oxidize Present Recent Stunted Other (E	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher de of Reduced Iron Reduction or Stresses (Explain in Reduction to the (inches): both (inches): both (inches):	4A, and s (B13) lor (C1) res along d Iron (C- on in Tille Plants (D marks) 6 inche Surface	Living Roots (04) and Soils (C6) and (LRR A) by the second	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	rr-Stained L RA 1, 2, 4A lage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te led Ant Mou -Heave Hu	Leaves (E.	39) (C2) (C2) (C3) (C3) (C4) (C5) (C7)	(C		
YDROLO etland Hyd imary Indice Surface High V Satura Water Sedim Drift D Iron Do Surface Inundae Sparse etd Observation Princludes cap	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) the Soil Cracks (B6) ation Visible on Aer tely Vegetated Concevations: ter Present? Present? tesent?	: one requi ial Imager cave Surfa /es [/e	y (B7) ace (B8)] No] No] No		Water-S (except Salt Cru Aquatic Hydrogy Oxidize Present Recent Stunted Other (E	MLRA 1, 2, ast (B11) Invertebrates en Sulfide Odd Rhizospher de of Reduced Iron Reduction or Stresses (Explain in Reduction to the (inches): both (inches): both (inches):	4A, and s (B13) lor (C1) res along d Iron (C- on in Tille Plants (D marks) 6 inche Surface	Living Roots (04) and Soils (C6) and (LRR A) by the second	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	rr-Stained L RA 1, 2, 4A lage Patter Season Wa ration Visib norphic Po ow Aquitar Neutral Te led Ant Mou -Heave Hu	Leaves (E.	39) (C2) (C2) (C3) (C3) (C4) (C5) (C7)	(C		

Project Site:	Sound Transit East Link Extension	on Project		City/Coun	ty: <u>Bellevue/King</u>	Sampling Date:	<u>Feb</u>	. 14, 20	<u>013</u>
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	<u>Nor</u> SPL	<u>th Lake</u> J	2
Investigator(s):	C Douglas & J. Pursley				Section, Township, Ra	inge: <u>S29, T24N, F</u>	R5E	_	
Landform (hillslope, ter	rrace, etc.): Narrow area betw	een developr	ment Loca	I relief (conc	ave, convex, none): <u>concav</u>	<u>e</u> :	Slope (%):	0% to	2%
Subregion (LRR):	<u>A</u>	Lat: <u>47.6</u>	<u>2N</u>		Long: <u>122.18W</u>	Datu	m:	i	
Soil Map Unit Name:	Alderwood gravelly sandy loam	1			NWI cla	assification: Nor	ne Mapped	<u>l</u>	
Are climatic / hydrologi	ic conditions on the site typical for	this time of y	year? Ye	es 🛛	No	n in Remarks.)			
Are Vegetation □,	Soil □, or Hydrology	☐, signific	antly disturbed	? Are "	Normal Circumstances" preser	ıt? Y	′es ⊠	No	
Are Vegetation □,	Soil □, or Hydrology	☐, natural	ly problematic?	(If ne	eded, explain any answers in F	Remarks.)			
SUMMARY OF FIN	IDINGS – Attach site map sl	nowing san	npling point	locations,	transects, important feat	ures, etc.			
Hydrophytic Vegetation	n Present?	Yes 🛛							
Hydric Soil Present?		Yes 🗌		Is the Samp within a We		Y	′es □	No	\boxtimes
Wetland Hydrology Pre	esent?	Yes 🗆		within a we	uanu :				
Remarks: Wetland N	North Lake is located in narrow are	ea between ra	ailroad tracks a	nd commerc	ial development. Wetland incli	udes slope HGM cla	ass.		
Tronding.	Torus Zano io robatoa in riamon an	, a 20111001111	am odd traono a		iai aoroiopinonii rrollana ino.	2400 0.000 1.0 0.0			
VEGETATION – Us	se scientific names of plants	S							
Tree Stratum (Plot size	e: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator	Dominance Test Workshee	t:			
1		78 COVEL	Species:	<u>Status</u>	Number of Dominant Species				
2.					That Are OBL, FACW, or FA			((A)
3.			· <u>——</u>		Total Number of Dominant				
4.					Species Across All Strata:	<u>2</u>		((B)
50% = <u>0</u> , 20% = <u>0</u>		0	= Total Cover		Percent of Dominant Species				
Sapling/Shrub Stratum	n (Plot size: 15 foot radius)				That Are OBL, FACW, or FA		<u>)</u>	((A/B)
1. Rubus armeniacus	2	<u>20</u>	<u>ves</u>	FACU	Prevalence Index workshee				
2.			_		Total % Cover o	<u>f:</u> <u>M</u>	ultiply by:		
3.					OBL species	_	1 =		
4					FACW species	_ x:	2 =		
5					FAC species	_ x:	3 =		
50% = <u>1</u> , 20% = <u>0</u>		<u>20</u>	= Total Cover	,	FACU species	_ X ²	1 =		
Herb Stratum (Plot siz	e: 3 foot radius)				UPL species	- X,	5 =		
Cirsium arvense	· <u></u> ,	<u>5</u>	<u>no</u>	<u>FACU</u>	Column Totals:	(A)		(B)	,
Epilobium watsonii	ii	<u>1</u>	no	FACW		e Index = B/A =		(D)	,
3. Equisetum arvens	-	<u>+</u> 1	no no	FAC	Hydrophytic Vegetation Inc				
4. <u>Juncus effusus</u>	<u>u</u>	<u>1</u> 20		FACW	☐ 1 – Rapid Test for Hydi				
5. Phalaris arundinad	cea	<u>80</u>	<u>no</u> <u>yes</u>	FACW					
6	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	<u>55</u>	100						
						_			
7 8					4 - Morphological Adap				
9.					☐ 5 - Wetland Non-Vascu	,	,		
10.					_		-:->		
11.					☐ Problematic Hydrophyt	c vegetation* (Expi	ain)		
·		100	- Total Cavar		¹ Indicators of hydric soil and	wetland hydrology r	nust		
50% = 1, 20% = 0	Plot size: 3 foot radius)	<u>100</u>	= Total Cover		be present, unless disturbed	or problematic.			
,	F10t \$12e. <u>5 100t Taulus</u>)								
1			_		Hydrophytic				
2						Yes 🖂	No		
50% =, 20% = _		<u>0</u>	= Total Cover		Present?				
% Bare Ground in Her									
Remarks: 5	50% dominant wetland vegetation	per the Domi	inance Test, on	nly 2 dominar	nt species.				

0 to 18+ 10YR 3/3 10	None	e None None						
	<u> </u>	, INOTIC INOTIC	<u>None</u>	Sandy loam	w/cobble			
			_					
			_					
			_					
	-	- — —	-					
		- — —						
ype: C= Concentration, D=Depletion,	— — — — — — — — — — — — — — — — — — —	triv CS-Covered or Costed S	and Grains 2	ocation: DI =Dor	e Lining, M=Matrix			
ydric Soil Indicators: (Applicable to			and Grains. L		rs for Problemation		nils ³ ·	
Histosol (A1)		Sandy Redox (S5)		_	cm Muck (A10)	o rryario oc	JII3 .	
Histic Epipedon (A2)		Stripped Matrix (S6)		_	Red Parent Material	(TF2)		
Black Histic (A3)	_	Loamy Mucky Mineral (F1)	(except MLRA 1)	_	ery Shallow Dark S	` '	12)	
☐ Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	,	_) Other (Explain in Re		,	
Depleted Below Dark Surface (A1	11)	Depleted Matrix (F3)						
Thick Dark Surface (A12)		Redox Dark Surface (F6)						
Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)		ers of hydrophytic ve			
Sandy Gleyed Matrix (S4)		Redox Depressions (F8)			nd hydrology must s disturbed or prob		,	
estrictive Layer (if present):								
ype:								
epth (inches):			Hydric Soils F	Present?	Yes		No	\boxtimes
IYDROLOGY								
Vetland Hydrology Indicators:	uired; check all th	at apply)		Secondary	y Indicators (2 or m	ore required	d)	
Vetland Hydrology Indicators: rimary Indicators (minimum of one req	juired; check all th	at apply) Water-Stained Leaves (B9)			y Indicators (2 or m er-Stained Leaves		d)	
Vetland Hydrology Indicators: rimary Indicators (minimum of one required Surface Water (A1)				☐ Wate	` ` `	(B9)	d)	
Vetland Hydrology Indicators: rimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3)		Water-Stained Leaves (B9)		☐ Wate	er-Stained Leaves	(B9) B)	d)	
/etland Hydrology Indicators: rimary Indicators (minimum of one requirements) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13)	nd 4B)	☐ Wate (ML) ☐ Drain	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab	(B9) B) (C2)	,	
/etland Hydrology Indicators: rimary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	n d 4B)))	☐ Wate (MLI ☐ Drain ☐ Dry- ☐ Satu	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab arration Visible on A	(B9) B) O) le (C2) erial Imager	,	
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along	nd 4B))) ng Living Roots (C3	Wate (ML Drain Dry- Satu	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab rration Visible on Ar morphic Position (I	(B9) B) O) le (C2) erial Imager	,	
Vetland Hydrology Indicators: rimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alone Presence of Reduced Irone	nd 4B))) ng Living Roots (C3 (C4)	Wate Wate (ML Drain Dry- Satu Geo Shall	RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab gration Visible on Ar morphic Position (Ellow Aquitard (D3)	(B9) B) O) le (C2) erial Imager	,	
Vetland Hydrology Indicators: rimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alone Presence of Reduced Iron Recent Iron Reduction in Tile	nd 4B))) ng Living Roots (C3 (C4) illed Soils (C6)	Wate Wate (ML Drain Dry- Satu Geo Shal	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on Ar morphic Position (I llow Aquitard (D3) -Neutral Test (D5)	(B9) B) I) Ie (C2) erial Imager D2)	,	
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres also Presence of Reduced Iron Recent Iron Reduction in Till Stunted or Stresses Plants	nd 4B)) ng Living Roots (C3 (C4) illed Soils (C6) (D1) (LRR A)	Wate Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on A morphic Position (I llow Aquitard (D3) -Neutral Test (D5) sed Ant Mounds (D6)	(B9) B) O) le (C2) erial Imager O2)	,	
/etland Hydrology Indicators: rimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alone Presence of Reduced Iron Recent Iron Reduction in Tile	nd 4B)) ng Living Roots (C3 (C4) illed Soils (C6) (D1) (LRR A)	Wate Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on Ar morphic Position (I llow Aquitard (D3) -Neutral Test (D5)	(B9) B) O) le (C2) erial Imager O2)	,	
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres also Presence of Reduced Iron Recent Iron Reduction in Till Stunted or Stresses Plants	nd 4B)) ng Living Roots (C3 (C4) illed Soils (C6) (D1) (LRR A)	Wate Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on A morphic Position (I llow Aquitard (D3) -Neutral Test (D5) sed Ant Mounds (D6)	(B9) B) O) le (C2) erial Imager O2)	,	
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images Sparsely Vegetated Concave Surfield Observations:	gery (B7)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alooperesence of Reduced Iron Recent Iron Reduction in Tile Stunted or Stresses Plants Other (Explain in Remarks)	nd 4B)) ng Living Roots (C3 (C4) illed Soils (C6) (D1) (LRR A)	Wate Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on A morphic Position (I llow Aquitard (D3) -Neutral Test (D5) sed Ant Mounds (D6)	(B9) B) O) le (C2) erial Imager O2)	,	
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images Sparsely Vegetated Concave Surfield Observations: urface Water Present? Yes	gery (B7)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres aloo Presence of Reduced Iron Recent Iron Reduction in Tile Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches):	nd 4B)) ng Living Roots (C3 (C4) illed Soils (C6) (D1) (LRR A)	Wate Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on A morphic Position (I llow Aquitard (D3) -Neutral Test (D5) sed Ant Mounds (D6)	(B9) B) O) le (C2) erial Imager O2)	,	
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imag Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes Saturation Present? Yes	gery (B7)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres aloof Presence of Reduced Iron Recent Iron Reduction in Tile Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches):	nd 4B)) ng Living Roots (C3 (C4) illed Soils (C6) (D1) (LRR A)	Wate Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on A morphic Position (I llow Aquitard (D3) -Neutral Test (D5) sed Ant Mounds (D0 st-Heave Hummock	(B9) B) O) le (C2) erial Imager O2)	,	, [
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requirement) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images Sparsely Vegetated Concave Surface Water Present? Ves	gery (B7)	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres aloo Presence of Reduced Iron Recent Iron Reduction in Tile Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches): Depth (inches):	nd 4B) ing Living Roots (C3) (C4) illed Soils (C6) (D1) (LRR A)	Wate	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B10 Season Water Tab aration Visible on A morphic Position (I llow Aquitard (D3) -Neutral Test (D5) sed Ant Mounds (D0 st-Heave Hummock	(B9) B) Ile (C2) erial Imager D2) 6) (LRR A) s (D7)	ry (C9)	

Project Site:	Sound Transit East Link Exter	nsion Project			City/Cour	nty: <u>Bellevue/King</u>	Sa	ampling Date:	Feb	o. 14, 2	<u> 2013</u>
Applicant/Owner:	Sound Transit					State	e: <u>WA</u> Sa	ampling Point:	Noi SP	<u>rth Lak</u> W	<u>(e</u>
Investigator(s):	C Douglas & J. Pursley					Section, Tow	nship, Range:	S29, T24N, R5	<u>E</u>		
Landform (hillslope, ter	rrace, etc.): Narrow area be	tween develor	<u>oment</u>	Loca	al relief (conc	ave, convex, none):	concave	Sid	ope (%):	0%	to 2%
Subregion (LRR):	<u>A</u>	Lat: 47.	.62N			Long: <u>122.18W</u>		Datum:	<u> </u>	_	
Soil Map Unit Name:	Alderwood gravelly sandy lo	<u>am</u>					NWI classific	cation: <u>None</u>	Маррес	<u>d</u>	
Are climatic / hydrologi	ic conditions on the site typical	for this time of	f year?	Y	′es ⊠	No ☐ (If n	o, explain in R	emarks.)			
Are Vegetation \square ,	Soil ☐, or Hydrology	☐, signif	icantly d	isturbed	d? Are "	Normal Circumstance	s" present?	Yes	s 🛛	No	
Are Vegetation □,	Soil ☐, or Hydrology	☐, natura	ally prob	lematic	? (If ne	eeded, explain any ans	swers in Rema	arks.)			
SHMMADY OF FIN	DINGS – Attach site map	showing sa	mpline	noin	t locations	transacts import	ant features	e etc			
Hydrophytic Vegetation			Mo No	-	liocations	, transects, import	ant reatures	5, 616.			$\neg \neg$
Hydric Soil Present?	iri resent:	_	⊠ No		Is the Samp			Yes	s 🛛	No	
Wetland Hydrology Pre	seent?		⊠ No		within a We	etland?		16:	• 🖂	NO	
						Colored Nation	u 12 1 1	.l HOM .l.			
Remarks: Wetland N	North Lake is located in narrow	area between	railroad	tracks	and commerc	cial development. We	tland includes	slope HGM class	S.		
VEGETATION - Us	se scientific names of pla	nts									
Tree Stratum (Plot size		Absolute	Domi		Indicator	Dominance Test W	/orksheet·				
	o. <u>oo loot laalab</u>)	% Cover	Speci	ies?	Status EAC						
Alnus rubra Salix scouleriana		<u>10</u> 40	<u>yes</u>		<u>FAC</u> <u>FAC</u>	Number of Dominar That Are OBL, FAC		<u>3</u>			(A)
3		40	<u>yes</u>		<u>I AC</u>						
4.						Total Number of Do Species Across All S		<u>4</u>			(B)
50% = <u>1</u> , 20% = <u>1</u>		<u>50</u>	= Tota	al Cove		Percent of Dominan	at Species				
	(Plot size: 15 foot radius)	<u>55</u>		u. 0070	•	That Are OBL, FAC		<u>75</u>			(A/B)
Rubus armeniacus	-	<u>15</u>	<u>ves</u>		FACU	Prevalence Index v	worksheet:				
2	-					Total %	6 Cover of:	Muli	tiply by:		
3.						OBL species		x1 =			
4						FACW species		x2 =	: <u> </u>		
5						FAC species		x3 =	·		
50% = <u>1</u> , 20% = <u>0</u>		<u>15</u>	= Tota	al Cove	er	FACU species		x4 =	. <u> </u>		
Herb Stratum (Plot size	e: 3 foot radius)					UPL species		x5 =	: <u> </u>		
1. Epilobium watsonii	i	<u>5</u>	no		FACW	Column Totals:	(A))		(E	3)
2. <u>Juncus effusus</u>		<u>15</u>	no		FACW		Prevalence Ind	lex = B/A =	_		
3. Phalaris arundinad	<u>cea</u>	80	yes		FACW	Hydrophytic Veget	ation Indicate	ors:			
4						☐ 1 – Rapid Tes	t for Hydrophy	tic Vegetation			
5											
6						☐ 3 - Prevalence	e Index is <3.0	1			
7						4 Morpholog	_	ns ¹ (Provide supp	oortina		
8								separate sheet)			
9						☐ 5 - Wetland N	on-Vascular P	lants ¹			
10						☐ Problematic H	lydrophytic Ve	getation ¹ (Explai	n)		
11											
50% = <u>1</u> , 20% = <u>0</u>		<u>100</u>	= Tota	al Cove	er	¹ Indicators of hydric be present, unless of			ıst		
Woody Vine Stratum (Plot size: 3 foot radius)					be present, unless t	alstarbea or pr	obiematic.			
1											
2						Hydrophytic	Vaa	M	Ma		
50% =, 20% = _		<u>0</u>	= Tota	al Cove	er	Vegetation Present?	Yes		No	,	
% Bare Ground in Her	b Stratum <u>0</u>										
Remarks: 7	5% dominant wetland vegetati	on per the Dor	ninance	Test							
İ											

SOIL Sampling Point: North Lake SPW Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features (inches) Color (moist) % Color (moist) % Type¹ Loc² Texture Remarks w/cobble & angular rock 0 to 5 10YR 2/1 100 <u>Loam</u> None None None None 5 to 8 10YR 3/1 100 None None None None Loam w/angular rock 8 to 18+ 10YR 5/1 60 10YR 5/6 w/angular rock D Sandy clay ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) П Stripped Matrix (S6) \Box Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 chroma with redox **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) П Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Water Table Present? Yes \boxtimes No Depth (inches): 3 inches Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Saturation and water table observed in sample plot

Project Site:	Sound Transit East Link Exten	sion Project			City/Coun	ty: <u>Bellevue/King</u>	S	ampling Dat	e:	Feb	. 14, 2	<u>2013</u>
Applicant/Owner:	Sound Transit					State	e: <u>WA</u> S	ampling Poi	nt:	Cen SPL	<u>tral La</u> J	<u>ake</u>
Investigator(s):	C Douglas & J. Pursley					Section, Tow	nship, Range	S29, T24I	N, R5E		-	
Landform (hillslope, te	rrace, etc.): Narrow area bet	ween develop	<u>ment</u>	Loca	al relief (conc	ave, convex, none):	concave		Slope	: (%):	<u>0% t</u>	<u>o 2%</u>
Subregion (LRR):	<u>A</u>	Lat: 47.	62N			Long: <u>122.18W</u>		D	atum: _			
Soil Map Unit Name:	Alderwood gravelly sandy loa	ı <u>m</u>					NWI classif	ication:	None Ma	apped		
Are climatic / hydrolog	ic conditions on the site typical f	or this time of	year?	Y	es 🛚	No 🗌 (If n	o, explain in F	Remarks.)				
Are Vegetation ☐,	Soil ☐, or Hydrology	☐, signifi	cantly distu	ırbed	l? Are "	Normal Circumstance	s" present?		Yes	\boxtimes	No	
Are Vegetation □,	Soil □, or Hydrology	☐, natura	ally problem	natic1	? (If ne	eded, explain any ans	wers in Rem	arks.)				
OURAN ARY OF FIN	IDINOO Attack alta wasan							1-				
	DINGS – Attach site map				locations,	transects, import	ant reature	s, etc.				
Hydrophytic Vegetation	n Present?	Yes 🖸			Is the Samp	oled Area			V		N-	5 7
Hydric Soil Present?		Yes [within a We	tland?			Yes		No	
Wetland Hydrology Pre		Yes [
Remarks: Wetland D	D is located in narrow area between	een railroad tr	acks and d	evel	opment on La	ake Bellevue. Wetland	d includes de	pressional H	GM clas	SS.		
VEGETATION _ III	se scientific names of plar	nte										
Tree Stratum (Plot size	•	Absolute	Dominan		Indicator	Dominance Test W	orksheet:					
	o. <u>oo toot taalao</u> ,	% Cover	Species?	<u>?</u>	<u>Status</u>							
1 2						Number of Dominar That Are OBL, FAC			<u>1</u>			(A)
3												
4.						Total Number of Do Species Across All S			<u>2</u>			(B)
50% = <u>0</u> , 20% = <u>0</u>		<u> </u>	= Total C	Cove	 r	Percent of Dominan	t Cassica					
	n (Plot size: 15 foot radius)	<u>-</u>				That Are OBL, FAC			<u>50</u>			(A/B)
Rubus armeniacus	-	<u>10</u>	<u>yes</u>		<u>FACU</u>	Prevalence Index v	vorksheet:					
2	_					Total %	Cover of:		Multiply	y by:		
3.						OBL species			x1 =			
4						FACW species			x2 =			
5						FAC species			x3 =			
50% = <u>1</u> , 20% = <u>0</u>		<u>10</u>	= Total C	Cove	r	FACU species			x4 =		_	
Herb Stratum (Plot siz	e: 3 foot radius)					UPL species			x5 =			
1. Epilobium watsoni	<u>ii</u>	<u>10</u>	<u>yes</u>		FACW	Column Totals:	(A	١)			(E	3)
2. Verbascum thapsu	<u>us</u>	<u>1</u>	no		<u>UPL</u>		Prevalence In	dex = B/A =				
3.						Hydrophytic Veget						
4.						☐ 1 – Rapid Tes	t for Hydroph	ytic Vegetati	on			
5							e Test is >50%	%				
6						☐ 3 - Prevalence	e Index is <3.0	D ¹				
7						4 Morpholog	_		suppor	tina		
8							marks or on a			9		
9						☐ 5 - Wetland N	on-Vascular F	Plants ¹				
10						☐ Problematic H	ydrophytic Ve	egetation ¹ (E	xplain)			
11												
50% = <u>1</u> , 20% = <u>0</u>		<u>11</u>	= Total C	Cove	r	¹ Indicators of hydric be present, unless of			gy must			
Woody Vine Stratum (Plot size: 3 foot radius)					be present, unless t	notarbed or p	robicinatic.				
1												
2						Hydrophytic	Van	⊠		N.		
50% =, 20% = _		<u>0</u>	= Total C	Cove	r	Vegetation Present?	Yes			No		
% Bare Ground in Her	b Stratum 89											
Remarks: 5	50% dominant wetland vegetation	n per the Don	ninance Tes	st, or	nly 2 domina	nt species.						

Profile Description: (Des								<u>Lake SPU</u>	
		e depth	needed to	document the indicator or co	onfirm the absend	ce of indicato	ors.)		
	latrix			Redox Features	1 . 2		_		
inches) Color (mo	st)	%	Color (m			Texture	Rem		
0 to 18+ None	1	<u>None</u>	None	None None	<u>None</u>	<u>Sand</u>	Fill prism gravel & ang	ular rock	
	-								
	_								
	_				-				
	_				-				
	_								
	_								
Type: C= Concentration	– Doplotio	n DM-	Poducod Ma	trix, CS=Covered or Coated S	and Grains 2	l ocation: DI =	Pore Lining, M=Matrix		
ydric Soil Indicators: (A	-				and Orams.		ators for Problematic Hydr	ic Soils ³ :	
Histosol (A1)	ppou			Sandy Redox (S5)			2 cm Muck (A10)		
☐ Histic Epipedon (A2)				Stripped Matrix (S6)			Red Parent Material (TF2)		
☐ Black Histic (A3)				Loamy Mucky Mineral (F1)	(except MLRA 1)	_	Very Shallow Dark Surface	e (TF12)	
☐ Hydrogen Sulfide (A	!)			Loamy Gleyed Matrix (F2)	,		Other (Explain in Remarks		
☐ Depleted Below Dar	-	A11)		Depleted Matrix (F3)		_	, ,	,	
Thick Dark Surface (,		Redox Dark Surface (F6)					
☐ Sandy Mucky Miner	-			Depleted Dark Surface (F7))		cators of hydrophytic vegetati		
☐ Sandy Gleyed Matrix	(S4)			Redox Depressions (F8)			etland hydrology must be pre nless disturbed or problemation		
estrictive Layer (if pres	ent):							-	
ype: <u>Fill pris</u>	<u>m</u>								
epth (inches): At surf	<u>ice</u>				Hydric Soils	Present?	Yes 🗆] No	\boxtimes
Remarks: Fill prism of		ei, and a	Ingulai Tock						
· 		ei, anu a	Ingulai Tock						
HYDROLOGY		ei, anu a	ingulai 100k						
HYDROLOGY Vetland Hydrology Indic	ators:			at apply)		Secon	dary Indicators (2 or more rec	quired)	
HYDROLOGY Vetland Hydrology Indic Primary Indicators (minimu	ators:			at apply) Water-Stained Leaves (B9)			dary Indicators (2 or more red Vater-Stained Leaves (B9)	quired)	
HYDROLOGY Vetland Hydrology Indic Primary Indicators (minimulators) Surface Water (A1)	ators: m of one r		check all tha					quired)	
HYDROLOGY Vetland Hydrology Indic Primary Indicators (minimu) Surface Water (A1) High Water Table (A	ators: m of one r		check all tha	Water-Stained Leaves (B9)			Vater-Stained Leaves (B9)	quired)	
HYDROLOGY Vetland Hydrology Indic Primary Indicators (minimulators) Surface Water (A1) High Water Table (A) Saturation (A3)	ators: m of one r		check all tha	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, an	d 4B)		Vater-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B)		
HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimulators) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1)	ators: m of one r 2)		check all tha	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11)	d 4B)) (Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10))	
HYDROLOGY Vetland Hydrology Indic Primary Indicators (minimulations) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits	ators: m of one r 2)		check all tha	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13)	d 4B))) 1 1 2 2 8	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2))	
HYDROLOGY Vetland Hydrology Indic Primary Indicators (minimulators) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	ators: m of one r 2) B2)		check all tha	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	d 4B)) ng Living Roots (C	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial In)	
HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimulators) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (A)	ators: m of one r 2) B2)		check all tha	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along	d 4B)) ng Living Roots (C(C4)	V	Vater-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2))	
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimum) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (I) Iron Deposits (B5)	ators: m of one r 2) B2)		check all tha	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alond Presence of Reduced Iron (B13)	d 4B) ng Living Roots (C(C4)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Im Geomorphic Position (D2) Shallow Aquitard (D3)) nagery (C9)	
HYDROLOGY Wetland Hydrology Indic Primary Indicators (minimulations) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (I1) Iron Deposits (B5) Surface Soil Cracks	ators: m of one r 2) B2) B4)	equired;	check all the	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, an Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in Ti	d 4B) ng Living Roots (C(C4) lled Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	nagery (C9)	
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimulations) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Indicated Soil Cracks) Surface Soil Cracks Inundation Visible o	ators: m of one r 2) B2) B4) (B6) n Aerial Im	equired;	check all that	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alout Presence of Reduced Iron Recent Iron Reduction in Tis Stunted or Stresses Plants	d 4B) ng Living Roots (C(C4) lled Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimulation (A1)) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Inon Deposits (B5)) Surface Soil Cracks Inundation Visible of Sparsely Vegetated	ators: m of one r 2) B2) B4) (B6) n Aerial Im	equired;	check all that	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alout Presence of Reduced Iron Recent Iron Reduction in Tis Stunted or Stresses Plants	d 4B) ng Living Roots (C(C4) lled Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimulation) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (III) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations:	ators: m of one r 2) B2) B4) (B6) n Aerial Im	equired;	check all that	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alout Presence of Reduced Iron Recent Iron Reduction in Tis Stunted or Stresses Plants	d 4B) ng Living Roots (C(C4) lled Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimumous Martin Mart	ators: m of one r 2) B2) (B6) n Aerial Im Concave S	required; nagery (E Surface	check all that	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron of Recent Iron Reduction in Till Stunted or Stresses Plants Other (Explain in Remarks)	d 4B) ng Living Roots (C(C4) lled Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimulations) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (I) Iron Deposits (B5) Surface Soil Cracks Inundation Visible o	ators: m of one r 2) B2) 44) (B6) n Aerial Im Concave S	required; aggery (E	check all that	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres alone Presence of Reduced Irone Recent Iron Reduction in Tile Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches):	d 4B) ng Living Roots (C(C4) Illed Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	· [
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimumonic Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (I) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations: Surface Water Present? Water Table Present? Saturation Present? includes capillary fringe)	ators: m of one r 2) B2) (B6) n Aerial Im Concave S Yes Yes	required;	check all the	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron of Recent Iron Reduction in Tile Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches): Depth (inches):	d 4B) ng Living Roots (C(C4) Illed Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI Frost-Heave Hummocks (D7)	nagery (C9)	0 [
HYDROLOGY Wetland Hydrology Indice Primary Indicators (minimumonic Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (I) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated Field Observations: Surface Water Present? Water Table Present? Saturation Present? includes capillary fringe)	ators: m of one r 2) B2) (B6) n Aerial Im Concave S Yes Yes	required;	check all the	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, an Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1 Oxidized Rhizospheres alor Presence of Reduced Iron Recent Iron Reduction in Ti Stunted or Stresses Plants Other (Explain in Remarks) Depth (inches): Depth (inches):	d 4B) ng Living Roots (C(C4) Illed Soils (C6) (D1) (LRR A)	V	Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Interpretation (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI Frost-Heave Hummocks (D7)	nagery (C9)	· ·

Project Site:	Sound Transit East Link Extens	sion Project			City/Cour	nty: <u>Be</u>	ellevue/King		Sampling I	Date:	Feb.	14, 2	<u>013</u>
Applicant/Owner:	Sound Transit						Sta	te: WA	Sampling I	Point:	Cent SPW	<u>ral La</u> '	<u>ke</u>
Investigator(s):	C Douglas & J. Pursley						Section, Tow	nship, Rang	e: <u>S29, T</u>	24N, R5E			
Landform (hillslope, te	errace, etc.): Narrow area bet	ween develop	ment	Loca	al relief (conc	cave, con	ivex, none):	concave		Slope	e (%):	<u>0% to</u>	<u>) 2%</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.6</u>	<u> 32N</u>			Long	g: <u>122.18W</u>			Datum:			
Soil Map Unit Name:	Alderwood gravelly sandy loa	<u>m</u>						NWI class	ification:	None Ma	<u>apped</u>		
Are climatic / hydrolog	ic conditions on the site typical f	or this time of	year?	Y	es 🛚	No	☐ (If r	no, explain in	Remarks.)			
Are Vegetation	, Soil □, or Hydrology	☐, signifi	cantly di	sturbed	l? Are "	"Normal	Circumstance	es" present?		Yes	\boxtimes	No	
Are Vegetation	, Soil □, or Hydrology	☐, natura	Illy probl	ematic'	? (If ne	eeded, e	xplain any an	swers in Rer	marks.)				
SUMMARY OF FIN	IDINGS Attach site man	showing co	mnlina	noint	locations	trance	oto impor	tant faatuu	ac ata				
Hydrophytic Vegetation	IDINGS – Attach site map	Yes 🗵			iocations,	, transe	ecis, impor	tani reatur	es, etc.				
Hydric Soil Present?	iii Fiesent!	Yes 🗵			Is the Samp		a			Yes	\boxtimes	No	
_	acant?	Yes 🗵			within a We	etland?				163		NO	
Wetland Hydrology Pr													
Remarks: Wetland	Central Lake is located in narrow	area betweei	n railroa	d tracks	and develop	pment or	n Lake Bellev	ue. Wetland	includes o	depression	al HGM	l class	à.
VEGETATION – U	se scientific names of plan	ts											
Tree Stratum (Plot siz		Absolute	Domir		Indicator	Domir	nance Test V	Vorksheet:					
1. Alnus rubra		<u>% Cover</u> <u>5</u>	Specie yes	es?	Status FAC	Niumb	or of Domino	nt Chaoina					
2		<u>~</u>	100		17.0		er of Domina are OBL, FAC			<u>5</u>			(A)
3.						Total N	Number of Do	ominant					
4.							es Across All			<u>6</u>			(B)
50% = <u>1</u> , 20% = <u>0</u>		<u>5</u>	= Tota	al Cove	r	Percei	nt of Domina	nt Species					(A.D.)
Sapling/Shrub Stratur	n (Plot size: 15 foot radius)						are OBL, FAC			<u>83</u>			(A/B)
1. Cornus sericea		<u>1</u>	<u>no</u>		<u>FACW</u>	Preva	lence Index	worksheet:					
2. Rubus armeniacu	<u>s</u>	<u>20</u>	<u>yes</u>		<u>FACU</u>		Total 9	% Cover of:		Multipl	y by:		
Spiraea douglasii		<u>50</u>	<u>yes</u>		<u>FACW</u>	OBL s	pecies			x1 =		_	
4						FACW	species			x2 =		_	
5						FAC s	pecies			x3 =		_	
50% = <u>1</u> , 20% = <u>1</u>		<u>71</u>	= Tota	al Cove	r	FACU	species			x4 =		_	
Herb Stratum (Plot siz	ze: 3 foot radius)					UPL s	pecies			x5 =		_	
Epilobium watson	<u>ii</u>	<u>20</u>	<u>yes</u>		<u>FACW</u>	Colum	ın Totals:	((A)			(B)
2. <u>Ludwigia palustris</u>		<u>60</u>	<u>yes</u>		<u>OBL</u>			Prevalence I	ndex = B/A	\ =			
3. Phalaris arundina	cea	<u>20</u>	<u>yes</u>		<u>FACW</u>	_	phytic Vege						
4							1 – Rapid Te			tation			
5							2 - Dominano	e Test is >50	0%				
6							3 - Prevalenc	e Index is <3	3.0 ¹				
7							4 - Morpholog				ting		
8						l		marks or on	•	e sneet)			
9							5 - Wetland N	lon-Vascular	Plants'				
10							Problematic I	Hydrophytic \	egetation ¹	(Explain)			
11						1Indica	ators of hydric	c soil and we	tland hydro	oloav must			
50% = <u>1</u> , 20% = <u>2</u>	(5)	<u>100</u>	= Tota	al Cove	r		sent, unless						
	(Plot size: <u>3 foot radius</u>)												
1						Hvdro	phytic						
2				ol Com		Veget		Ye	s	\boxtimes	No		
50% =, 20% =		<u>0</u>	- 1018	al Cove	ı	Prese	nt?						
% Bare Ground in He		n nor the D-	inca	Toct									
Remarks:	33% dominant wetland vegetatio	n per the Dom	ıınance	rest									

SOIL Sampling Point: Central Lake SPW Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Color (moist) Texture Remarks (inches) Color (moist) % % Type¹ Loc2 10YR 3/1 100 Silt loam 0 to 3 None None None None w/organic material 3 to 8 10YR 5/2 <u>60</u> 10YR 5/6 <u>40</u> D M Sandy loam w/gravel 8 to 18+ Gley 1 5/5G 100 None None w/gravel & angular rock None None Sandy clay ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) П Stripped Matrix (S6) \Box Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 and 2 chroma with redox and gley soils **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) П Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Yes \boxtimes Water Table Present? No Depth (inches): 5 inches Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Saturation and water table observed in sample plot

Project Site:	Sound Transit Ea	ast Link Extensti	on Proje	ct			City/Cour	nty:	Belle	vue/King		Sampling	g Date:	Fel	o. 14,	2013
Applicant/Owner:	Sound Transit									Sta	te: <u>WA</u>	Sampling	g Point:	So: SP	uth La <u>U</u>	<u>ke</u>
Investigator(s):	C Douglas & J. F	Pursley							Se	ction, Tov	vnship, Rai	nge: <u>S29,</u>	T24N, R5E			
Landform (hillslope, te	errace, etc.): <u>Na</u>	arrow area betwe	een deve	elopm	<u>ent</u>	Loca	al relief (conc	ave,	conve	x, none):	concave	2	Slo	oe (%):	0%	to 2%
Subregion (LRR):	<u>A</u>		Lat:	47.62	N			L	ong:	122.18W			Datum:		_	
Soil Map Unit Name:	Alderwood grav	velly sandy loam									NWI cla	ssification:	None	Марре	<u>d</u>	
Are climatic / hydrolog	ic conditions on th	ne site typical for	this time	e of ye	ear?	Υ	'es ⊠	ı	No	☐ (If i	no, explain	in Remark	s.)			
Are Vegetation	, Soil □,	or Hydrology	□, sig	nifica	ntly di	sturbed	d? Are "	Norm	al Cir	cumstanc	es" presen	t?	Yes	\boxtimes	No	
Are Vegetation	, Soil □,	or Hydrology	□, na	turally	probl	ematic	? (If ne	eded	l, expl	ain any ar	swers in R	Remarks.)				
SUMMARY OF FIN		h site map sh				-	locations	, trar	sect	s, impor	tant feat	ures, etc.				
Hydrophytic Vegetatio	n Present?		Yes	\boxtimes	No		Is the Sam	aled A	Δrea							
Hydric Soil Present?			Yes		No		within a We						Yes		No	\boxtimes
Wetland Hydrology Pr			Yes		No	\boxtimes										
Remarks: Wetland	South Lake is locat	ted in narrow are	ea betwe	en ra	ilroad	tracks	and developr	ment	on Lal	ke Bellevu	ie. Wetlan	d includes	depression	al HGN	/I class	3 .
VECETATION	!!!!															
VEGETATION – Us		mes or plants	Absolut	:e	Domir	nant	Indicator									
Tree Stratum (Plot siz			% Cove	<u>er</u>	Specie	es?	<u>Status</u>	ро	mınar	ice Test V	Vorksheet	:				
Populus trichocar	<u>pa</u>		<u>20</u>		<u>yes</u>		<u>FAC</u>				nt Species		<u>4</u>			(A)
2. <u>Salix hookeriana</u>			<u>20</u>	,	<u>ves</u>		<u>FACW</u>	ina	at Are	OBL, FAC	CW, or FAC	<i>)</i> :	_			` ,
3							-			mber of D			<u>7</u>			(B)
4								Spe	ecies i	Across All	Strata.					
50% = 2, $20% = 0$	n (Diet eine: 15 fee	at radius)	<u>40</u>		= I ota	al Cove	r				nt Species CW, or FAC		<u>57</u>			(A/B)
Sapling/Shrub Stratur	n (Plot size: 15 foc	ot radius)	4-				FAOU			-						
1. <u>Ilex aquifolium</u>			<u>15</u>		<u>ves</u>		<u>FACU</u>	Pre	evalen		workshee					
2. <u>Rubus armeniacu</u>	<u>s</u>		<u>30</u>		<u>yes</u>		<u>FACU</u>	00			% Cover of	<u>:</u>		ply by:		
3									L spe			•	x1 =			
4 5.									Cvv s _l C spe	oecies			x2 = x3 =			
			15			al Cove			-			•	x4 =			
50% = <u>1</u> , 20% = <u>1</u>	ray 2 fact radius)		<u>45</u>		- 10ta	ai Cove	1		CU sp					_		
Herb Stratum (Plot siz			4-				E4 014/		L spe				x5 =			5 .
1. <u>Epilobium watson</u>	_		<u>15</u>		<u>yes</u>		<u>FACW</u>	Col	lumn 7	Fotals:	_ —	_(A)			(3)
2. <u>Equisetum arvens</u>	<u>se</u>		<u>15</u>		<u>yes</u>		<u>FAC</u>					e Index = B	/A =	•		
3											tation Ind					
4							—			-	-	ophytic Veg	getation			
5					—						e Test is >					
6					—						e Index is	_				
7							—					tations¹ (Pro on a separa		orting		
8												•	ite sileet)			
9											Non-Vascu					
10								Ш	Pro	blematic I	-lydrophyti	c Vegetatio	n¹ (Explain)		
11								1Inc	dicato	rs of hydri	c soil and v	wetland hyd	drology mus	st		
50% = 2, $20% = 0$	(Diet eize, 2 feet re	adiua)	<u>30</u>		= 10ta	al Cove	r					or problema				
Woody Vine Stratum	(Piot size. <u>3 100t ra</u>	auius)	100				LIDI									
1. <u>Hedera hibernica</u>			<u>100</u>	,	<u>yes</u>		<u>UPL</u>	Hve	droph	ytic						
2			100			al Cour-		-	getati	-	,	Yes	\boxtimes	No)	
50% = <u>1</u> , 20% = <u>0</u>	1. 011		<u>100</u>		- 1018	al Cove		Pre	esent?	?						
% Bare Ground in He		land		<u> </u>		T										
Remarks:	57% dominant wet	iand vegetation	per the L	omin	ance	ıest										

	Color (moist)	9	%	Color (mo	oist) %	Type ¹	Loc ²	Texture		Remark	(S		
0 to 4	10YR 3/3	1	00	None	None	None	<u>None</u>	Sandy loam	w/gravel				
4 to 18+	10YR 3/3	<u>1</u>	00	None	<u>None</u>	None	None	Sandy loam	w/grave, cobble	e, & angul	ar rockl		
		_											
		_	—		· —								
		_			· ——								
		_			· —								
		_	_		·								
vpe: C= Co	oncentration, D=De	epletion	. RM=R	Reduced Mat	rix, CS=Covered or	Coated Sand	Grains. ² Lo	cation: PL=Pore	Lining, M=Matrix	(
		•			otherwise noted.)				s for Problemati		Soils ³ :		_
Histoso	ol (A1)				Sandy Redox (S5	5)		□ 2 0	cm Muck (A10)	-			
Histic E	Epipedon (A2)				Stripped Matrix (S	86)		☐ Re	ed Parent Materia	l (TF2)			
Black H	Histic (A3)				Loamy Mucky Mir	neral (F1) (exc	cept MLRA 1)	□ Ve	ery Shallow Dark	Surface (1	F12)		
] Hydrog	en Sulfide (A4)				Loamy Gleyed Ma	atrix (F2)		☐ Ot	ther (Explain in Re	emarks)			
] Deplete	ed Below Dark Sur	face (A	.11)		Depleted Matrix (F3)							
Thick E	Oark Surface (A12)	į			Redox Dark Surfa	ace (F6)		3					
	Mucky Mineral (S1	∣)			Depleted Dark Su	` '			s of hydrophytic v id hydrology must				
	Gleyed Matrix (S4				Redox Depressio	ns (F8)			disturbed or prob		-,		
	.ayer (if present):												
rpe:										_			_
ptii (iiiciic	5).						Hydric Soils P	resentr	Yes		No		
epth (inche	3 chroma with no	redox f	features	;			Hydric Soils P	resent f	Tes				
emarks:	3 chroma with no	redox f	features	3			Hydric Soils P	esent?	Tes				
emarks:	3 chroma with no		features	-			Hydric Soils P	esent?	Tes				
YDROLO	3 chroma with no	s:			at apply)		Hydric Soils P		Indicators (2 or m				
emarks: IYDROLO /etland Hydrimary Indic	3 chroma with no GY Irology Indicators	s:			nt apply) Water-Stained Le	<u>'</u>	Hydric Soils P	Secondary		nore requi			
YDROLO Vetland Hydrimary Indic	3 chroma with no GY drology Indicators ators (minimum of	s:		check all tha		eaves (B9)		Secondary □ Wate	Indicators (2 or m	nore requi			
YDROLO Vetland Hydrimary Indice Surface High V	GY drology Indicators ators (minimum of e Water (A1)	s:		check all tha	Water-Stained Le	eaves (B9)		Secondary Wate	Indicators (2 or m	nore requi (B9)			
YDROLO Vetland Hydrimary Indic Surface High V Satura	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2)	s:		check all tha	Water-Stained Le	eaves (B9) , 2, 4A, and 4 E		Secondary Wate (MLR	Indicators (2 or mor-Stained Leaves	nore requi (B9) B) 0)			
YDROLO Vetland Hydrimary Indic Surface High V Satura Water	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3)	s:		check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11)	eaves (B9) , 2, 4A, and 4E ates (B13)		Secondary Wate (MLR Drain	Indicators (2 or more-Stained Leaves RA 1, 2, 4A, and 4 age Patterns (B1)	nore requi (B9) (B B) 0) ole (C2)	red)		
YDROLO /etland Hydrimary Indic Surfac High V Satura Water Sedim	GY drology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1)	s:		check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra	eaves (B9) , 2, 4A, and 4E ates (B13) Odor (C1)	В)	Secondary Wate (MLR Drain Dry-S	Indicators (2 or morestained Leaves AA 1, 2, 4A, and 4 age Patterns (B1) Season Water Tab	nore requi (B9) (B) (D) (D) (D) (C2) (erial Imag	red)		
YDROLO letland Hydrimary Indic Surfac High V Satura Water Sedim Drift D	GY drology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)	s:		check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide	eaves (B9) , 2, 4A, and 4E ates (B13) Odor (C1) sheres along Li	B)	Secondary Wate (MLR Drain Dry-S Satur Geon	Indicators (2 or morestained Leaves AA 1, 2, 4A, and 4 age Patterns (B1) Season Water Tabration Visible on A	nore requi (B9) (B) (D) (D) (D) (C2) (erial Imag	red)		
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Algal N	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	s:		check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp	eaves (B9) 2, 4A, and 4E ates (B13) Odor (C1) wheres along Li uced Iron (C4)	B) iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Satur Geon	Indicators (2 or mar-Stained Leaves RA 1, 2, 4A, and 4 age Patterns (B1) Geason Water Table attion Visible on A morphic Position (1	nore requi (B9) (B) (D) (D) (D) (D2)	red)		
YDROLO Vetland Hydrimary Indice High V Satura Water Sedim Sedim Drift D Iron De	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)	s: one red		check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu	eaves (B9) ates (B13) Odor (C1) heres along Li uced Iron (C4)	iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Geon Shall	Indicators (2 or mater-Stained Leaves A 1, 2, 4A, and 4 age Patterns (B16 Season Water Tabration Visible on Amorphic Position (Iow Aquitard (D3)	nore requi (B9) (B) 0) ole (C2) erial Imag D2)	red) gery (C9		
YDROLO Yetland Hydrimary Indic Surfac High V Satura Water Sedim Drift D Algal N Iron Do	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	s:	quired;	check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu	eaves (B9) ates (B13) Odor (C1) Theres along Licuced Iron (C4) Tection in Tilled Tection in Tilled Tection (B1)	iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Satur Geon Shall FAC-	Indicators (2 or more-Stained Leaves AA 1, 2, 4A, and 4 age Patterns (B1) Geason Water Tabration Visible on Amorphic Position (1 ow Aquitard (D3) Neutral Test (D5)	nore requi (B9) (B) 0) ole (C2) erial Imag (D2)	red) gery (C9		
YDROLO /etland Hydrimary Indic Surfac High V Satura Water Sedim Drift D Algal N Iron Do	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Aeiely Vegetated Con	s: one rec	quired;	check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebric Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress	eaves (B9) ates (B13) Odor (C1) Theres along Licuced Iron (C4) Tection in Tilled Tection in Tilled Tection (B1)	iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Satur Geon Shall FAC-	Indicators (2 or more-stained Leaves A 1, 2, 4A, and 4 lage Patterns (B16 Season Water Tabration Visible on Anorphic Position (Iow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D	nore requi (B9) (B) 0) ole (C2) erial Imag (D2)	red) gery (C9		
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Drift D Iron Do Surface Inundae Inundae	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Aelely Vegetated Convations:	s: one rec	quired;	check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	eaves (B9) 1, 2, 4A, and 4E ates (B13) Odor (C1) wheres along Licuced Iron (C4) action in Tilled es Plants (D1) Remarks)	iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Satur Geon Shall FAC-	Indicators (2 or more-stained Leaves A 1, 2, 4A, and 4 lage Patterns (B16 Season Water Tabration Visible on Anorphic Position (Iow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D	nore requi (B9) (B) 0) ole (C2) erial Imag (D2)	red) gery (C9		
WATER OF THE PROPERTY OF THE P	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Con vations: er Present?	s: fone rec rial Image cave Su	quired;	check all that	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	eaves (B9) ates (B13) Odor (C1) heres along Li uced Iron (C4) iction in Tilled es Plants (D1) Remarks)	iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Satur Geon Shall FAC-	Indicators (2 or more-stained Leaves A 1, 2, 4A, and 4 lage Patterns (B16 Season Water Tabration Visible on Anorphic Position (Iow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D	nore requi (B9) (B) 0) ole (C2) erial Imag (D2)	red) gery (C9		
YDROLO Yetland Hydrimary Indic Surfac High V Satura Vater Sedim Inon Do Surfac Inunda Sparse Seld Observ urface Water	GY drology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Con vations: er Present? Present?	s: one rec	quired;	check all tha	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	eaves (B9) ates (B13) Odor (C1) heres along Li uced Iron (C4) iction in Tilled es Plants (D1) Remarks)	iving Roots (C3)	Secondary Wate (MLR Drain Dry-S Satur Geon Shall FAC-	Indicators (2 or more-stained Leaves A 1, 2, 4A, and 4 lage Patterns (B16 Season Water Tabration Visible on Anorphic Position (Iow Aquitard (D3) Neutral Test (D5) ed Ant Mounds (D	nore requi (B9) (B) 0) ole (C2) erial Imag (D2)	red) gery (C9		
YDROLO Vetland Hydrimary Indice Surface High V Satura Water Sedim Iron Do Surface Inunda Sparse Vetla Observator	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aei ely Vegetated Con vations: er Present? Present?	s: fone rec rial Image cave Su	quired;	check all that	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	eaves (B9) , 2, 4A, and 4E ates (B13) Odor (C1) wheres along Li uced Iron (C4) action in Tilled es Plants (D1) Remarks) s): s): s):	B) Soils (C6)) (LRR A)	Secondary Wate (MLR Drain Dry-S Satur Geon Shall FAC-	Indicators (2 or morestained Leaves AA 1, 2, 4A, and 4 age Patterns (B1) Season Water Taboration Visible on Anorphic Position (Ioow Aquitard (D3) Neutral Test (D5) and Ant Mounds (D-Heave Hummock	nore requi (B9) (B) 0) ole (C2) erial Imag (D2)	gery (C9		
YDROLO Vetland Hydrimary Indic Surface High V Satura Water Sedim Drift D Surface Inunda Sparse Vater Table Seturation Procludes cap	GY Irology Indicators ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) ation Visible on Ae ely Vegetated Con vations: er Present? Present? esent?	rial Imag cave Su Yes Yes	gery (B urface (l	check all that	Water-Stained Le (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	eaves (B9) ates (B13) Odor (C1) wheres along Licuced Iron (C4) action in Tilled es Plants (D1) Remarks) s): s):	iving Roots (C3) Soils (C6)) (LRR A)	Secondary Wate (MLR Drain Dry-S Satur Shalle FAC- Raise	Indicators (2 or morestained Leaves AA 1, 2, 4A, and 4 age Patterns (B1) Season Water Taboration Visible on Anorphic Position (Ioow Aquitard (D3) Neutral Test (D5) and Ant Mounds (D-Heave Hummock	nore requi (B9) (B) (D) (D) (B) (C2) (B) (C2) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C4) (C4) (C4) (C4) (C4	gery (C9)	

Project Site:	Sound Transit East Link Extens	tion Project		City	//County:	Bellevue/King	Sampli	ng Date:	Feb.	14, 2	013
Applicant/Owner:	Sound Transit					State	e: <u>WA</u> Sampli	ng Point:	South SPW	h Lak	<u>e</u>
Investigator(s):	C Douglas & J. Pursley					Section, Town	nship, Range: S29), T24N, R5E	<u> </u>	-	
Landform (hillslope, te	errace, etc.): Narrow area bety	veen develop	ment L	ocal relief	(concave	, convex, none):	<u>concave</u>	Slope	e (%):	0% to	o 2%
Subregion (LRR):	<u>A</u>	Lat: <u>47.6</u>	<u> 62N</u>			Long: <u>122.18W</u>		Datum:			
Soil Map Unit Name:	Alderwood gravelly sandy loar	<u>n</u>					NWI classification	n: None M	apped		
Are climatic / hydrolog	gic conditions on the site typical fo	or this time of	year?	Yes	\boxtimes	No 🗌 (If no	o, explain in Remar	ks.)			
Are Vegetation	, Soil □, or Hydrology	☐, signific	cantly distur	bed?	Are "Nor	mal Circumstances	s" present?	Yes	\boxtimes	No	
Are Vegetation	, Soil □, or Hydrology	☐, natura	ally problem	atic?	(If neede	ed, explain any ans	wers in Remarks.)				
	NDINGS – Attach site map s		• • •		tions, tra	ansects, importa	ant features, etc). 			
Hydrophytic Vegetation	on Present?	Yes 🗵		le the	Sampled	l Area			_		_
Hydric Soil Present?		Yes 🗵		within	n a Wetlar			Yes	\boxtimes	No	
Wetland Hydrology Pr		Yes 🗵									
Remarks: Wetland	South Lake is located in narrow a	rea between	railroad trad	ks and de	velopmen	nt on Lake Bellevue	. Wetland includes	depressional	HGM o	class.	
VEGETATION – U	se scientific names of plan	Absolute	Dominan	l ladio	otor						
Tree Stratum (Plot siz	ze: 30 foot radius)	% Cover	Species?			ominance Test W	orksheet:				
1. <u>Salix hookeriana</u>		<u>50</u>	<u>yes</u>	FAC\	<u> </u>	umber of Dominan	t Species	4			(A)
2					. TI	hat Are OBL, FACV	N, or FAC:	<u>4</u>			(八)
3						otal Number of Dor		<u>6</u>			(B)
4					S	pecies Across All S	Strata:	<u>u</u>			(D)
50% = <u>1</u> , 20% = <u>0</u>		<u>50</u>	= Total C	over	P	ercent of Dominant	t Species	<u>67</u>			(A/B)
Sapling/Shrub Stratur	m (Plot size: 15 foot radius)				TI	hat Are OBL, FACV	N, or FAC:	<u>07</u>			(700)
Rubus armeniacu	<u> 18</u>	<u>20</u>	<u>yes</u>	FACI	<u>J</u> P	revalence Index w	vorksheet:				
2. Rubus spectabilis		<u>30</u>	<u>yes</u>	FAC		Total %	Cover of:	Multipl	y by:		
Spiraea douglasii		<u>40</u>	<u>yes</u>	FAC\	<u>w</u> 0	BL species		x1 =		_	
4					. F	ACW species		x2 =		_	
5					. F	AC species		x3 =		_	
50% = <u>1</u> , 20% = <u>2</u>		<u>90</u>	= Total C	over	F	ACU species		x4 =		_	
Herb Stratum (Plot size	ze: 3 foot radius)				U	PL species		x5 =		_	
Equisetum telmat	<u>eia</u>	<u>5</u>	<u>no</u>	FAC\	<u>W</u> C	olumn Totals:	(A)			(B	.)
2. Juncus effusus		<u>1</u>	<u>yes</u>	FAC\	<u> </u>	Р	revalence Index =	B/A =			
3. Phalaris arundina	cea	<u>90</u>	<u>yes</u>	FAC\	<u>₩</u> H	ydrophytic Vegeta	ation Indicators:				
4					. 🗆	1 – Rapid Test	t for Hydrophytic Ve	egetation			
5					. 🛮 🗵	2 - Dominance	e Test is >50%				
6					. 🗆	3 - Prevalence	Index is <3.01				
7					. _	4 - Morphologi	cal Adaptations ¹ (F	rovide suppor	ting		
8					. -	data in Ren	narks or on a sepa	rate sheet)			
9					. 🗆	5 - Wetland No	on-Vascular Plants	1			
10					. 🗆	Problematic H	ydrophytic Vegetat	ion ¹ (Explain)			
11											
50% = <u>1</u> , 20% = <u>0</u>		<u>96</u>	= Total C	over		ndicators of hydric e present, unless d					
Woody Vine Stratum	(Plot size: 3 foot radius)					- p	р				
1. <u>Hedera hibernica</u>		<u>10</u>	<u>yes</u>	<u>UPL</u>							
2						ydrophytic	Vaa	⊠	N.		_
50% =, 20% =		<u>10</u>	= Total C	over		egetation resent?	Yes		No		
% Bare Ground in He	rb Stratum 4										
Remarks:	67% dominant wetland vegetation	per the Dom	ninance Tes	t	<u> </u>						
rtemants.											

SOIL Sampling Point: South Lake SPW Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Remarks (inches) Color (moist) % Color (moist) % Type¹ Loc² Texture 10YR 3/2 100 Silt w/roots throughout 0 to 3 None None None None 3 to 18+ 10YR 2/1 100 None None None None Loam w/roots throughout ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) П Stripped Matrix (S6) \Box Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: 1 and 2 chroma **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) \boxtimes Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) П \boxtimes Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Water Table Present? Yes \boxtimes No Depth (inches): 1 inch Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Saturation and water table observed in sample plot

Project Site:	Sound Transit East Link Ex	tenstion Project		City/Cour	nty: <u>Bellevue/King</u>	5	Sampling Date	: ,	April 9	, 2013
Applicant/Owner:	Sound Transit				State	e: <u>WA</u> S	Sampling Point		<u>Lake B</u> SPU	<u>Bellevue</u>
Investigator(s):	C Douglas & J. Pursley				Section, Tow	nship, Range	e: <u>S29, T24N,</u>	R5E		
Landform (hillslope, te	errace, etc.): Narrow area Lake	between railroad	and Loca	al relief (cond	ave, convex, none):	concave		Slope (%): <u>0</u> '	% to 1%
Subregion (LRR):	<u> </u>	Lat: <u>47.6</u>	<u>2N</u>		Long: <u>122.18W</u>		Dat	um:		
Soil Map Unit Name:	Alderwood gravelly sandy	<u>loam</u>				NWI classi	fication: Pl	<u>JBH</u>		
Are climatic / hydrolog	ic conditions on the site typic	cal for this time of	/ear? Y	es 🛛	No ☐ (If n	o, explain in	Remarks.)			
Are Vegetation	, Soil □, or Hydrolo	gy □, signific	antly disturbed	l? Are '	Normal Circumstance	es" present?		Yes	⊠ N	lo 🗆
Are Vegetation	, Soil □, or Hydrolo	gy □, natural	ly problematic	? (If ne	eeded, explain any ans	swers in Rem	narks.)			
SUMMARY OF FIN	IDINGS – Attach site ma	ap showing sar	npling point	locations	, transects, import	tant feature	es, etc.			
Hydrophytic Vegetatio		Yes 🛛	No 🗆						-	
Hydric Soil Present?		Yes □	No 🛛	Is the Samp within a We				Yes [_ N	lo 🛛
Wetland Hydrology Pr	resent?	Yes 🗆	No 🛛							
Remarks: The Upla	nd soil plot is located in a n	arrow area betwee	en railroad trac	ks and deve	opment on Lake Belle	evue. Wetlan	d includes de	oression	al HGN	M class.
VEGETATION – U	se scientific names of p		Dominant	Indicator	1					
Tree Stratum (Plot siz	e: 30 foot radius)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test W	orksheet:				
1. Populus trichocar	<u>pa</u>	<u>60</u>	<u>yes</u>	FAC	Number of Dominar	nt Species		<u>4</u>		(A)
2. <u>Alnus rubra</u>		<u>20</u>	<u>yes</u>	<u>FAC</u>	That Are OBL, FAC	W, or FAC:	-	-		()
3			_		Total Number of Do Species Across All			<u>7</u>		(B)
4										
50% = <u>1</u> , 20% = <u>1</u>	m (Plot size: 15 foot radius)	<u>80</u>	= Total Cove	Γ	Percent of Dominan That Are OBL, FAC		!	<u>57</u>		(A/B)
1. <u>Ilex aquifolium</u>	n (Plot size: 15 foot radius)	10	VOC	FACU	Prevalence Index	-				
Rubus armeniacu	\$	<u>10</u> 30	<u>yes</u> <u>yes</u>	FACU		6 Cover of:		Multiply I	hv.	
3	<u>o</u>	<u>50</u>	<u>ycs</u>	17100	OBL species	0 OOVET OI.	•	x1 =	<u> </u>	
4					FACW species			x2 =		•
5					FAC species			x3 =		•
50% = <u>1</u> , 20% = <u>1</u>		<u>40</u>	= Total Cove	r	FACU species		;	x4 =		_
Herb Stratum (Plot siz	ze: 3 foot radius)				UPL species		;	x5 =		
1. Epilobium watson	<u></u> <u>ii</u>	<u>10</u>	<u>ves</u>	FACW	Column Totals:	(/	A)			(B)
Equisetum arvens	<u>se</u>	<u>5</u>	<u>yes</u>	FAC		Prevalence Ir	ndex = B/A =			
3					Hydrophytic Veget	tation Indica	tors:			
4					☐ 1 – Rapid Tes	t for Hydroph	nytic Vegetation	n		
5					□ 2 - Dominance	e Test is >50	%			
6					☐ 3 - Prevalence	e Index is <3.	0 ¹			
7					4 - Morpholog	ical Adaptation	ons ¹ (Provide s	supportin	ıg	
8					data in Rer	marks or on a	a separate she	et)		
9					5 - Wetland N	on-Vascular	Plants ¹			
10					☐ Problematic H	lydrophytic V	egetation ¹ (Ex	plain)		
11					¹ Indicators of hydric	soil and wet	land hydrology	must		
50% = <u>1</u> , 20% = <u>1</u>	(District of O.C. 11)	<u>15</u>	= Total Cove	r	be present, unless of			muot		
	(Plot size: <u>3 foot radius</u>)	400		LID						
1. <u>Hedera helix</u>		<u>100</u>	<u>yes</u>	<u>UPL</u>	Hydrophytic					
2 50% = 1, 20% = 0		100	= Total Cove		Vegetation	Yes	s 🛛		No	
	ub Otrasticas 70	<u>100</u>	- Total Cove	•	Present?					
% Bare Ground in He		ation north-D-	nance Test							
Remarks:	57% dominant wetland veget	alion per the Dom	nance rest							

nches)	Color (moist)		%	Color (m	noist)	%	Type ¹	Loc ²	Texture			Remark	s	
0 to 3	10YR 3/3	1	100	None	2	None	None	None	Sandy loar	m w/grave	el and coa	arse root	matt	
3 to 18+	10YR 3/3	<u>1</u>	100	None	<u> </u>	None	None	None	Sandy loar	m w/grave	el, cobble,	& angul	ar rock	
					_									
			—		_									
		_			_									
		_	—	-	_									
		_	_		_									
vpe: C= Cc	ncentration, D=De	 epletion	—— ı. RM=F	Reduced Ma	- trix. CS=0	Covered or Co	nated Sand	Grains. ² L	ocation: PL=P	ore Lining. N	Л=Matrix			
	ndicators: (Appli									tors for Pro		Hydric S	Soils ³ :	
Histoso				. 🗆		Redox (S5)				2 cm Muck		•		
Histic E	pipedon (A2)				Strippe	d Matrix (S6))			Red Parent	Material ((TF2)		
Black F	listic (A3)				Loamy	Mucky Miner	ral (F1) (ex c	cept MLRA 1)		Very Shallo	w Dark Sı	urface (T	F12)	
] Hydrog	en Sulfide (A4)				Loamy	Gleyed Matri	ix (F2)			Other (Expl	ain in Ren	narks)		
] Deplete	ed Below Dark Sur	face (A	(11)		Deplet	ed Matrix (F3)							
Thick D	ark Surface (A12)	,			Redox	Dark Surface	e (F6)		2					
] Sandy	Mucky Mineral (S	1)			Deplet	ed Dark Surfa	ace (F7)			itors of hydro land hydrolo				
	Gleyed Matrix (S4				Redox	Depressions	(F8)			ess disturbed			,	
	ayer (if present):													
pe:												_	No	×
	3 chroma with no	redox	features	s and sever	al pieces o	f concrete an	nd asphalt fo	Hydric Soils F		from railroad	Yes d.			
		redox	features	s and sever	al pieces c	f concrete an	nd asphalt fo			from railroad				
emarks:	3 chroma with no	redox	features	s and sever	al pieces c	f concrete an	d asphalt fo			from railroa				
emarks:	3 chroma with no		features	s and sever	al pieces c	f concrete an	nd asphalt fo			from railroad				
YDROLO etland Hyc	3 chroma with no	s:				f concrete an	nd asphalt fo		cent soils. Fill		d.			
rimary Indic	3 chroma with no GY Irology Indicators ators (minimum of	s:		check all th	at apply)				Seconda	ary Indicators	d. s (2 or mo	ore requir		
YDROLO etland Hyc imary Indic	3 chroma with no GY rology Indicators ators (minimum of	s:			at apply) Water-	Stained Leav	res (B9)	ound in the adja	Seconda	ary Indicators	s (2 or mo Leaves (I	ore requir B9)		
YDROLO etland Hyd imary Indic Surfac High W	3 chroma with no GY Irology Indicators ators (minimum of	s:		check all th	at apply) Water-		res (B9)	ound in the adja	Seconda	ary Indicators	s (2 or mo Leaves (I A, and 4B	ore requir B9)		
YDROLO etland Hyc imary Indic Surfac High W Satura	3 chroma with no 3 Chroma with no GY Irology Indicators ators (minimum of e Water (A1) //ater Table (A2)	s:		check all th	at apply) Water- (excep	Stained Leav	res (B9) , 4A, and 4 l	ound in the adja	Seconda (M	ary Indicators ater-Stained ILRA 1, 2, 4,	s (2 or mo Leaves (I A, and 4B ems (B10)	ore requir B9) 3)		
YDROLO etland Hyc imary Indic Surfac High W Satura Water	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3)	s:		check all th	at apply) Water- (excep Salt Cr Aquati	Stained Leav of MLRA 1, 2, ust (B11)	res (B9) , 4A, and 4 l	ound in the adja	Seconda Seconda (M) Dr	ary Indicators ater-Stained ILRA 1, 2, 4, rainage Patte	s (2 or mo Leaves (I A, and 4B erns (B10)	ore requir B9) 3)) e (C2)	red)	
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedim	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1)	s:		check all th	at apply) Water- (excep Salt Cr Aquati	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate gen Sulfide Or	res (B9) , 4A , and 4 l es (B13) dor (C1)	ound in the adja	Seconda Seconda (M) Dr Dr	ary Indicators ater-Stained ILRA 1, 2, 4, ainage Patte y-Season W	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae	ore requir B9) 3)) e (C2) rial Imag	red)	
YDROLO etland Hyo imary Indic Surfac High W Satura Water Sedim	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)	s:		check all th	at apply) Water- (excep Salt Cr Aquati Hydrog Oxidize	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate gen Sulfide Or	res (B9) , 4A, and 4l es (B13) dor (C1) eres along L	B)	Seconda Seconda M M Dr Dr Dr Sa Control General	ary Indicators ater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D.	ore requir B9) 3)) e (C2) rial Imag	red)	
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedim Drift Do	GY rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	s:		check all th	at apply) Water- (excep Salt Cr Aquati- Hydrog Oxidize	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate Invertebrate Invertebrate Invertebrate Invertebrate Invertebrate Invertebrate	res (B9) , 4A, and 4l es (B13) dor (C1) eres along L ed Iron (C4)	B) Living Roots (C3	Seconda Seconda (M) Dr Dr Sa) Seconda	ary Indicators ater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic Po	s (2 or mo Leaves (I A, and 4B erns (B10) later Table ble on Ae osition (Dard (D3)	ore requir B9) 3)) e (C2) rial Imag	red)	
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedim Drift Do Algal M	GY Prology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4)	s: f one re		check all th	at apply) Water- (excep Salt Cr Aquati- Hydrog Oxidize Preser Recen	Stained Leav at MLRA 1, 2, ust (B11) c Invertebrate gen Sulfide Or ed Rhizosphe ice of Reduce	res (B9) 4A, and 4I es (B13) dor (C1) eres along Led Iron (C4) ion in Tilled	B) Living Roots (C3) Soils (C6)	Seconda Seconda (M) Dr Dr Sa) Ge Sh	ary Indicators ater-Stained ILRA 1, 2, 4, ainage Patte ry-Season W aturation Visi eomorphic Pe nallow Aquita	s (2 or mo Leaves (I A, and 4B erms (B10) ater Table ble on Ae osition (D: urd (D3) est (D5)	ore requir B9) 3) e (C2) rial Imag 2)	ery (C9)	
YDROLO etland Hyd imary Indic Surfac High W Satura Water Sedim Drift D Algal N Iron De Surfac	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae	s: f one re	equired;	check all th	at apply) Water- (excep Salt Cr Aquati- Hydrog Oxidize Preser Recen Stunte	Stained Leav MLRA 1, 2, ust (B11) c Invertebrate gen Sulfide Or ed Rhizosphe ace of Reduce	res (B9) , 4A, and 4I es (B13) dor (C1) eres along Led Iron (C4) ion in Tilled Plants (D1	B) Living Roots (C3) Soils (C6)	Seconda	ary Indicators ater-Stained ILRA 1, 2, 4, ainage Patte ry-Season W aturation Visi eomorphic Periodic Periodical	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: ard (D3) est (D5) ounds (D6	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLO etland Hyo imary Indic Surfac High W Satura Water Drift Dr Algal N Iron De Surfac	GY rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae	s: f one re	equired;	check all th	at apply) Water- (excep Salt Cr Aquati- Hydrog Oxidize Preser Recen Stunte	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate gen Sulfide Or ed Rhizosphe ice of Reduce I Iron Reducti d or Stresses	res (B9) , 4A, and 4I es (B13) dor (C1) eres along Led Iron (C4) ion in Tilled Plants (D1	B) Living Roots (C3) Soils (C6)	Seconda	ary Indicators ater-Stained ILRA 1, 2, 4, ainage Patte ry-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: ard (D3) est (D5) ounds (D6	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLO etland Hyo imary Indic Surfac High W Satura Water Sedim Drift D Iron De Surfac Inunda Inunda Inunda	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con rations:	s: f one re rial Ima cave Si	equired; agery (B urface (check all th	at apply) Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser Recen Stunte Other (Stained Leav In MLRA 1, 2, ust (B11) Invertebrate Jen Sulfide Or Reduce Reduce Iron Reducti Jen Stresses Explain in Re	res (B9) 4A, and 4I es (B13) dor (C1) eres along L ed Iron (C4) ion in Tilled Plants (D1 emarks)	B) Living Roots (C3) Soils (C6)	Seconda We (M) Dr Dr Sa SFA Ra	ary Indicators ater-Stained ILRA 1, 2, 4, ainage Patte ry-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: ard (D3) est (D5) ounds (D6	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedim Drift D Iron De Surfac Inunda Sparse eld Observ	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con rations:	s: f one re rial Ima cave Si	equired;	check all th	at apply) Water- (excep Salt Cr Aquati Hydrog Oxidize Preser Recen Stunte Other	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate gen Sulfide Or ed Rhizosphe uce of Reduce I Iron Reducti d or Stresses Explain in Re	res (B9) 4A, and 4I es (B13) dor (C1) eres along L ed Iron (C4) ion in Tilled Plants (D1) emarks)	B) Living Roots (C3) Soils (C6)	Seconda We (M) Dr Dr Sa SFA Ra	ary Indicators ater-Stained ILRA 1, 2, 4, ainage Patte ry-Season W aturation Visi eomorphic Pe nallow Aquita AC-Neutral T	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: ard (D3) est (D5) ounds (D6	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedim Drift D Surfac Inunda Sparse eld Observ urface Water	GY Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con fations: er Present?	s: f one re rial Ima cave Si	equired; agery (B urface (check all th	at apply) Water- (excep Salt Cr Aquati Hydrog Oxidize Preser Recen Stunte Other	Stained Leav In MLRA 1, 2, ust (B11) Invertebrate Jen Sulfide Or Reduce Reduce Iron Reducti Jen Stresses Explain in Re	res (B9) 4A, and 4I es (B13) dor (C1) eres along L ed Iron (C4) ion in Tilled Plants (D1) emarks)	B) Living Roots (C3) Soils (C6)) (LRR A)	Seconda	ary Indicators ater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic Potallow Aquita AC-Neutral Toaised Ant Mo ost-Heave H	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: urd (D3) est (D5) unds (D6 ummocks	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLO etland Hyc imary Indic] Surfac] High W] Satura] Water] Sedim.] Drift D.] Iron Do] Surfac] Inunda] Sparse eld Observ arface Water ater Table le	GY rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con rations: er Present?	s: f one re rial Ima cave Si	equired;	check all th	at apply) Water- (excep Salt Cr Aquatir Hydrog Oxidizr Preser Recen Stunte Other	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate gen Sulfide Or ed Rhizosphe uce of Reduce I Iron Reducti d or Stresses Explain in Re	res (B9) , 4A, and 4I es (B13) dor (C1) eres along L ed Iron (C4) ion in Tilled Plants (D1) emarks)	B) Living Roots (C3) Soils (C6)) (LRR A)	Seconda We (M) Dr Dr Sa SFA Ra	ary Indicators ater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic Potallow Aquita AC-Neutral Toaised Ant Mo ost-Heave H	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: urd (D3) est (D5) unds (D6 ummocks	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	No
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedim Drift D Algal M Iron De Surfac Inunda Sparse eld Observ urface Wate ater Table I	GY Prology Indicators ators (minimum of the Water (A1) Prology Indicators ators (minimum of the Water (A1) Prology Indicators ators (minimum of the Water (A1) Prology Indicators (B2) the Water (B2) the County (B3) Proposits (B3) And or Crust (B4) the County (B4) the Cou	s: f one re rial Ima cave Si Yes Yes Yes	equired;	check all th	at apply) Water- (excep Salt Cr Aquati Hydrog Oxidizr Preser Recen Stunte Other	Stained Leav It MLRA 1, 2, ust (B11) Invertebrate gen Sulfide Or ed Rhizosphe ice of Reduce it Iron Reducti d or Stresses Explain in Re epth (inches):	res (B9) 4A, and 4I es (B13) dor (C1) eres along L ed Iron (C4) ion in Tilled Plants (D1) emarks)	B) Living Roots (C3) Soils (C6)) (LRR A)	Seconda	ary Indicators ater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic Potallow Aquita AC-Neutral Toaised Ant Mo ost-Heave H	s (2 or mo Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (D: urd (D3) est (D5) unds (D6 ummocks	ore requir B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	ery (C9)	

Project Site:	Sound Transit East Link Extensti	on Project		City/Coun	ty: <u>Bellevue/King</u>	Sampling Date:	April 9	, 2013
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	<u>Lake E</u> SPW	<u>Bellevue</u>
Investigator(s):	C Douglas & J. Pursley				Section, Township, Rar	nge: <u>S29, T24N, R5E</u>	<u> </u>	
Landform (hillslope, te	errace, etc.): <u>Depression/Laket</u>		Loca	I relief (conc	ave, convex, none): concave	<u>s</u> Slope	e (%): <u>0</u>	% to 2%
Subregion (LRR):	<u>A</u>	Lat: 47.6	<u>2N</u>		Long: <u>122.18W</u>	Datum:		
Soil Map Unit Name:	Alderwood gravelly sandy loam	!			NWI cla	ssification: PUBH		
Are climatic / hydrolog	ic conditions on the site typical for	this time of y	/ear? Y	es 🛚	No	in Remarks.)		
Are Vegetation □,	, Soil □, or Hydrology	☐, signific	antly disturbed	? Are "	Normal Circumstances" present	t? Yes	⊠ N	1o 🗆
Are Vegetation ,	, Soil □, or Hydrology	□, natural	ly problematic	? (If ne	eded, explain any answers in R	emarks.)		
SUMMARY OF FIN	IDINGS – Attach site map sh	nowing san	npling point	locations,	transects, important feat	ures, etc.		
Hydrophytic Vegetatio	n Present?	Yes 🛛	No 🗆					
Hydric Soil Present?		Yes 🛛	No 🗆	Is the Samp within a We		Yes	⊠ N	lo 🗆
Wetland Hydrology Pro	esent?	Yes 🛚	No 🗆	within a vic	uana i			
Remarks: Wetland L	_ake Bellevue is located east of an	existing rail	line and is sur	rounded by a	commercial buisness park and	parking lots.		
Tromania Productia	iano Bonordo lo localca caci el al-	. 07.101.119 . 4.11			oommoroidi balonooo palii aha	parring rote.		
VEGETATION – Us	se scientific names of plants	6						
Tree Stratum (Plot siz	e: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator	Dominance Test Worksheet	:		
1. Salix hookeriana		<u>% Cover</u> 30	<u>Species?</u> <u>yes</u>	Status FACW	Number of Deminent Chasins			
Populus balsamife	era	<u>50</u>	<u>yes</u>	FAC	Number of Dominant Species That Are OBL, FACW, or FAC			(A)
3	<u></u>	<u>55</u>	, 00	<u> </u>	Total Number of Dominant			
4.					Species Across All Strata:	<u>6</u>		(B)
50% = <u>1</u> , 20% = <u>1</u>		80	= Total Cove		Percent of Dominant Species			
	n (Plot size: 15 foot radius)				That Are OBL, FACW, or FAC			(A/B)
Spiraea douglasii	<u>1</u> (* 101 01201 <u>10 1001 100100</u>)	<u>20</u>	<u>ves</u>	FACW	Prevalence Index workshee			
2		<u>20</u>	<u>yes</u>	IACW	Total % Cover of		lv hv:	
3					OBL species	<u> </u>	y by.	
4					FACW species	x2 =		-
5.					FAC species	x3 =		-
50% = 1, 20% =		20	= Total Cover		FACU species	x4 =		-
-		<u>20</u>	- Total Cove	ı	UPL species	•		-
Herb Stratum (Plot siz	· <u></u>	00		E4.0\4/	•	x5 =		- (5)
1. <u>Phalaris arundinad</u>	<u>cea</u>	<u>20</u>	<u>yes</u>	FACW		_ (A)		_ (B)
2. <u>Juncus effusus</u>		<u>5</u>	<u>yes</u>	<u>FACW</u>		e Index = B/A =		
3					Hydrophytic Vegetation Ind			
4					1 – Rapid Test for Hydro			
5					2 - Dominance Test is >	50%		
6					3 - Prevalence Index is	<u><</u> 3.0¹		
7					4 - Morphological Adapt		ting	
8					data in Remarks or d	,		
9					5 - Wetland Non-Vascul	ar Plants ¹		
10					☐ Problematic Hydrophytic	c Vegetation ¹ (Explain)		
11					¹ Indicators of hydric soil and v	uetland budralagu must		
50% = <u>1</u> , 20% = <u>1</u>		<u>25</u>	= Total Cover	r	be present, unless disturbed of			
Woody Vine Stratum ((Plot size: 3 foot radius)							
1. <u>Hedera helix</u>		<u>25</u>	<u>yes</u>	<u>UPL</u>	Healmanh (C)			
2					Hydrophytic Vegetation	Yes ⊠	No	
50% = <u>1</u> , 20% =	_	<u>25</u>	= Total Cover	r	Present?			
% Bare Ground in Her	rb Stratum <u>4</u>							
Remarks: 8	33% dominant wetland vegetation	per the Domi	nance Test. So	oil plot was lo	ocated at the Lake edge.			

SOIL Sampling Point: Lake Bellevue SPW Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Remarks (inches) Color (moist) % Color (moist) % Type¹ Loc² Texture 10YR 2/1 100 Loam_ w/roots throughout 0 to 2 None None None None Sandy 2 to 18+ 10YR 2/1 100 None None None None w/rocks and sandt ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) П \Box Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Loamy Gleyed Matrix (F2) Hydrogen Sulfide (A4) Other (Explain in Remarks) Depleted Matrix (F3) Depleted Below Dark Surface (A11) \boxtimes Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and П Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes Depth (inches): No Remarks: Fines are limited in the soil due to constant wave action from the Lake surface. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) X Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) ☐ Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) \boxtimes Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) \boxtimes Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) П Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) \boxtimes Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): Yes \boxtimes Water Table Present? No Depth (inches): 2 inch Saturation Present? Wetland Hydrology Present? Yes \boxtimes No Yes \boxtimes No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Saturation year round by the constant fluctuation of Lake Bellevue and debris at the Lake outflow to Sturtevant Creek. Remarks:

DITCH FIELD DATA SHEET

Project Sound Transit East	1:0	K Ext	Date 4/23/2013				
Applicant Sound Transis	<i>- CIN</i>) -	County/State King IWA				
Investigators C. Douglar, J.G		e٩	S/T/R 29/24N/5E				
3 / 3	,						
Ditch Name	Phot	O Yes					
Location BNSF ROW							
Ditch Connects to Navigable Water (jurisdictional under Talent)? 🕱 yes 🗆 no (explain)							
West Tributary to Kelsey	Co	eek 1	ha colverts				
Field Observations							
Ditch Characteristics Bed and bank apparent Steeply sloped Vegetation flattened from possible water f Scour signs Debris rack present No vegetation in scour area Vegetation with very shallow roots in cent Vegetation or soil stained with water mark Vegetation is thick, deep roots, and no flow marks Soil is cracked, or other evidence of pondin (explain) Ditch is flat and/or wide	er S W	Standing Water fl Water fl Large qu season. C Culvert s Soils are Soils are planned/ Soils are If ditch i	•				
Does site appear to be regularly maintained?	ves 🔀	l no (explain)					
Has site been recently mowed? yes Ano (e Length Y Width Total Area Ditch with water flowing during site visit	xplain)		nding water during site visit 30%				
Notes:							
			·				

DITCH FIELD DATA SHEET

Project Sound Transit East Lin	K EXT.	Date 4/23/2013
Applicant Sound Transit		County/State King WA
Investigators C. Douglas, J. Pursle	Z	S/T/R 29/24N/ 5E
Ditch Name Pho	oto Yes	
Location BNSF ROW		
Ditch Connects to Navigable Water (jurisdictional un	nder Talent)?	yes □ no (explain)
West Tributery to Kelley Co.		
3		
Field Observations Ditch Characteristics		Other Observations
Bed and bank apparent Steeply sloped Vegetation flattened from possible water flow Scour signs □ Debris rack present □ No vegetation in scour area Vegetation with very shallow roots in center □ Vegetation or soil stained with water marks □ Vegetation is thick, deep roots, and no flow marks □ Soil is cracked, or other evidence of ponding (explain) □ Ditch is flat and/or wide	□ Standin □ Water f □ Large c season. □ Soils ar □ Soils ar plannec □ Soils ar	rges into catchbasin of culvert circle) ag water present % of ditch lowing in ditch during dry season quantities of water flowing during wet or after rain event showing water stains or marks re hydric re native re fill, sand, or clearly indicative of d/constructed ditch re saturated during the dry season is rock lined, there are water stained or indicate a high water mark or flow line
Other Information		
Does site appear to be regularly maintained? yes Has site been recently mowed? yes no (explain Length Width Total Area Ditch with water flowing during site visit %	n)	nding water during site visit <u>&</u> %

DITCH FIELD DATA SHEET

511 01. 1 12.2.	DATA OF	
Project Sound Transit East Lini	C EXT.	Date 4/23/2013
Applicant Sound Transit		County/State King WA
Investigators C. Douglas, J. Purche	4	S/T/R 29/24N/56
	<u> </u>	
Ditch Name Pho	oto Yes	
Location BNSF ROW	90 P	
Ditch Connects to Navigable Water (jurisdictional un	nder Talent)? (Yyes \(\square\) no (explain)
West Tributary to Kelsey C		
Field Observations		
Ditch Characteristics Bed and bank apparent Steeply sloped Vegetation flattened from possible water flow Scour signs Debris rack present No vegetation in scour area Vegetation with very shallow roots in center Vegetation or soil stained with water marks Vegetation is thick, deep roots, and no flow marks Soil is cracked, or other evidence of ponding (explain) Ditch is flat and/or wide	Standing Water fl Large qu season. Culvert Soils are Soils are planned. Soils are	*
Other Information		
Does site appear to be regularly maintained? 🚨 yes (∆no (explain)	
Has site been recently mowed? yes Ano (explain Length 6 Width Total Area Ditch with water flowing during site visit 30%	•	nding water during site visit
Notes:		

Attachment E

Ecology Wetland Rating Forms

SP3.

Name of wetland (if known): BNSF West

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

Date of site visit: April 23, 2013

 \boxtimes

 \boxtimes

 \boxtimes

Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes No Date				of training: <u>M</u>	<u>1ay 2007</u>			
SEC: <u>29</u> TOWNSHP: <u>24N</u> RNGE: <u>5E</u> Is S/T/R in Apper			ndix D? Yes	☐ No ⊠				
	Map of wetland unit: Figure Estimated size							
	SUMMARY OF RATING							
Category based	Category based on FUNCTIONS provided by wetland: I II III III IV							
C	ategory I = Score > 70]	Score for Wa	iter Quality Func	etions	14		
Ca	tegory II = Score 51 - 69		Score for	Hydrologic Func	etions	16		
Cat	egory III = $Score 30 - 50$		Score	for Habitat Func	etions	12		
Cat	egory IV = Score < 30		TOTA	L Score for Func	etions	42	7	
Category based	on SPECIAL CHARACTER	SISTCS of Wet	land 🔲 I			Does not ap	ply	
	Final Cate	gory (choose	e the "highest"	category from a	bove")	III	7	
			C	0 ,	, L		_	
	Summary of basic Wetland Unit has Spec			HGM Class				
	Characteristics	lai		or Rating				
	Estuarine		Depressiona					
	Natural Heritage Wetlan	ıd 🗌	Riverine					
	Bog		Lake-fringe					
	Mature Forest		Slope					
	Old Growth Forest		Flats					
	Coastal Lagoon		Freshwater	Tidal				
	Interdunal							
	None of the above		Check if unit HGM classes	has multiple s present				
Does the wetland 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.								
need to protect t					cs found in th	le wettand.		
Check List for Wetlands that 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.								
SP2 Has the w	etland unit been documented	l as habitat for	any State liste	d Threatened or				

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

SP4. Does the wetland unit have a local significance in addition to its functions? For example, the

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

freshwater wetland

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Established	☐ YES – the wetland class is Tidal Fringe nual low flow below 0.5 ppt (parts per thousand)? ☐ NO – Saltwater Tidal Fringe (Estuarine) **use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it tarine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please
2.		ne wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	•
3.	the surface) where at least 20 acres (8ha) in si At least 30% of the open water area is deeper than 6	of a body of permanent open water (without any vegetation on ze;
4.	subsurface, as sheetflow, or in a swale withou The water leaves the wetland without being impous NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dep	on (unidirectional) and usually comes from seeps. It may flow t distinct banks.
5.	Does the entire wetland meet all of the following criteria?	To House to Stope
	☐ The unit is in a valley or stream channel where it go ☐ The overbank flooding occurs at least once every to NOTE: The riverine unit can contain depress	ets inundated by overbank flooding from that stream or river. wo years. ions that are filled with water when the river is not flooding ne wetland class is Riverine
6.	the year. This means that any outlet, if present is higher the	aich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. The wetland class is Depressional
7.	pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The The wetland class is Depressional
8.	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGAREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your the second column represents 10% or more of the total area of the w than 10% of the unit, classify the wetland using the class that represents the represents representation of the representation	IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in vetland unit being rated. If the area of the class listed in column 2 is less
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional Lake fringe
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special

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.

characteristics

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	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 outlet points = 2	Figure
	 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 ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing 	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland 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 years.	Figure _
	 Area seasonally ponded is > 1/2 total area of wetland	2
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	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 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 Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier
_	▼YES multiplier is 2 ■ NO multiplier is 1	2
_	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>14</u>
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D 3	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)	2
	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). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	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 unit	3
	Total for D 3 Add the points in the boxes above	8

Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)				
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					
indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems.					
 Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems 	Multiplier				
YES multiplier is 2 NO multiplier is 1	2				
<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	<u>16</u>				
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> 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 Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other Wes multiplier is 2 No multiplier is 1				

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)
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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)	Figure ∏
	that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	2
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure <u></u>
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	2
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	8

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	Н 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 55% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure □
	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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR □ YES = 1 point • Within 1 mile of a lake greater than 20 acres?	

Comments:

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
and wildlife (full descriptions in WDFW PHS report 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%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
component is important (full descriptions in WDFW PHS report p. 158).	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a	
wet prairie (full descriptions in WDFW PHS report p. 161).	
☐ Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	
functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are ≥ 2 m (6.5 ft) in height. Priority logs are ≥ 30 cm (12 in) in diameter at the largest	1
end, and > 6 m (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	0
No habitats = 0 points	0
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
Nearby wetlands are addressed in question H 2.4)	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 8	4)
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	"
wetlands within 1/2 mile points = 5	1
•	[†]
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	,
disturbedpoints = 3	i
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 mile points = 3] [
• There is at least 1 wetland within 1/2 mile	
• There are no wetlands within 1/2 mile	$\begin{bmatrix} 1 \\ 1 \end{bmatrix}$ 3
	┶╾╾╾
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.	4 4
TOTAL for H 1 from page	8
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p.	1 12
Comments	<u> </u>

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type - Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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.	
	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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Ш
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland	I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	
CCA	Natural Heritage Wetlands (see p. 87)	
SC2	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.)	
	☐ 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 a site with state threatened	Cat I
	or endangered plant species?	
	☐ YES = Category 1	_
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \square NO = Is not a bog for purpose of rating	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	C 4 T
	less than that found in old-growth.	Cat. I
	■ YES = Category I ■ NO = not a forested wetland with special characteristics	
SC5	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 surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
000	Interdunal Wetlands (see p. 93)	
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	\square YES = Go to SC 6.1 \square 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:	
	• 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 (1. Lather without a new control of the state	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	Category of wetland based on Special Characteristics	
▼	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	TAT A
1	If you answered NO for all types enter "Not Applicable" on p. 1	<u>NA</u>

Comments:

Name of wetland (if known): BNSF Northwest

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

Date of site visit: April 23, 2013

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Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes No Date				of training:	<u>1ay 2007</u>		
SEC: <u>29</u>	SEC: <u>29</u> TOWNSHP: <u>24N</u> RNGE: <u>5E</u> Is S/T/R in Appe			in Appen	ndix D? Yes	□ No ⊠	
	Map of we	tland unit: Fi	igure Estima	ated size			
			<u> </u>				
		SUMMA	ARY OF RATING				
Category based	on FUNCTIONS provided	d by wetland:] II \Box] III	\boxtimes IV	
C	ategory I = Score > 70		Score for Water Q	Quality Function	ıs	8	
Са	ategory II = Score 51 - 69		Score for Hydr	ologic Function	ıs	6	
Cat	segory III = $Score 30 - 50$		Score for I	Habitat Function	ıs	10	
Cat	egory IV = Score < 30		TOTAL Sco	ore for Function	ıs	24	7
Category based	on SPECIAL CHARACTE	– RISTCS of We	tland 🗌 I	□II	\boxtimes] Does not ap	ply
	Final Cate	egory (choos	e the "highest" cate	gory from above	e")	IV	7
	Summary of basi	c information	about the wetland	unit.			_
	Wetland Unit has Spec	cial	Wetland HG	M Class			
Characteristics used for Rating							
	Estuarine		Depressional				
	Natural Heritage Wetla	nd	Riverine		닏		
	Bog		Lake-fringe				
	Mature Forest		Slope				
	Old Growth Forest		Flats	,	片		
	Coastal Lagoon		Freshwater Tida	1	片		
	Interdunal		G1 1 10 111	1.1.1			
	None of the above		Check if unit has HGM classes pres				
Does the wetlan	nd being rated meet any of	the criteria he	alow? If you answer	r VES to any of	the quest	ions below w	ou will
	the wetland according to the						ou wiii
	Check List for Wetland	ds that Need	Additional Prote	ction		YES	NO
	(in addition to the prote	ection recomm	ended for its categ	ory)			
Endanger For the p	vetland unit been documente red animal or plant species (urposes of this rating system	(T/E species)?					
	ederal database. vetland unit been documente	d as habitat fo	r any State listed Th	reatened or			

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

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

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

SP3.

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic of			
1.	 NO − go to 2 If yes, is the salinity of the water during periods of ann YES − Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Es 	☐ YES – the wetland class is Tidal Fringe that low flow below 0.5 ppt (parts per thousand)? ☐ NO – Saltwater Tidal Fringe (Estuarine) use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it arine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please		
2.		ne wetland class is Flats		
_	If your wetland can be classified as a "Flats" wetland,			
3.	the surface) where at least 20 acres (8ha) in sign At least 30% of the open water area is deeper than 6	f a body of permanent open water (without any vegetation on ze;		
4.				
5.	NO – go to 5	ne wetland class is Slope		
	☐ The unit is in a valley or stream channel where it go ☐ The overbank flooding occurs at least once every two NOTE: The riverine unit can contain depress	ets inundated by overbank flooding from that stream or river. wo years. ions that are filled with water when the river is not flooding the wetland class is Riverine		
6.	the year. This means that any outlet, if present is higher that	ich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. The wetland class is Depressional		
7.	pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not so to be maintained by high groundwater in the area. The The wetland class is Depressional		
8.	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REG AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your	IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in retland unit being rated. If the area of the class listed in column 2 is less		
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional Laboration and Laborati		
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional		
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional		
	Salt Water Tidal Fringe and any other class of	Treat as FSTUARINE 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.

freshwater wetland

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure <u></u> 1
	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") Provide photo or drawing	•
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure 🔲
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland 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 years.	Figure <u></u>
	 Area seasonally ponded is > 1/2 total area of wetland	0
	Total for D 1 Add the points in the boxes above	4
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 44)
	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 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 Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier
	▼YES multiplier is 2 ■ NO multiplier is 1	2
<u> </u>	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>8</u>
D 2	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	16)
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit	(see p.46)
	 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 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) points = 0 	0
	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). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	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 unit	3
	Total for D 3 Add the points in the boxes above	<u> </u>

D 4	Does the wetland have the opportunity 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. <i>Note which of the following</i>	
	indicators of opportunity apply.	
	 ✓ 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 	
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	Multiplier
	Other XES multiplier is 2 NO multiplier is 1	2
	Z 1E3 multiplier is 2	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	<u>6</u>

The	se questions apply to wetlands of all HGM classes.	Points	
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)	
H 1	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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure 🔲	
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	1	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure	
	☐ Freshwater tidal wetland = 2 points Map of hydroperiods	1	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure □	
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2	
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	6	

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	Н 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure □
	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 a 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). VES = 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points 	0

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
and wildlife (full descriptions in WDFW PHS report 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%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
component is important (full descriptions in WDFW PHS report p. 158).	
Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a	
wet prairie (full descriptions in WDFW PHS report p. 161).	
☐ Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	
functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
☐ Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ☐ Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
end, and > 6 m (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	0
No habitats = 0 points	0
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
Nearby wetlands are addressed in question H 2.4)	
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 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 mile	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
disturbed	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 mile points = 3	
• There is at least 1 wetland within 1/2 mile points = 2	_
• There are no wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
TOTAL score – opportunity for providing nabitat Ada the scores from H2.1, H2.2, H2.3, H2.4	-
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	<u> 10</u>

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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 With a saminty greater than 0.3 ppt. \square YES = Go to SC 1.1 \square 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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or	I/II
	contiguous freshwater wetlands.	Ш
SC2	Natural Heritage Wetlands (see p. 87)	
- C	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? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	☐ 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 a site with state threatened	
	or endangered plant species?	Cat I
	☐ YES = Category 1 ☐ NO not a Heritage Wetland	
g G 3	Bogs (see p. 87)	
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \square NO = Is not a bog for purpose of rating	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	\square Mature forests: (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	☐ YES = Category I ☐ NO = not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
500	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.	
	\Box The lagoon in which the wetland is located contains surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	☐ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
	☐ YES = Category I ☐ NO = Category II	
SC6	<u>Interdunal Wetlands</u> (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	\square YES = Category II \square NO = go to SC 6.2	
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	☐ YES = Category III	
	Category of wetland based on Special Characteristics	
♦	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Comments:

RATIN	NG SUM	MARY -	- Weste	n Was	hington	
Name of wetland (c	or ID #): <u>E</u> 2	-1		Date of s	site visit: 12/15/	14
Rated by Torre	1 Luitin	Traine	ed by Ecology?	∠YesNo	Date of training	120
		I .			classes?YN	
NOTE: Form Source of	is not complete base aerial pho	e without the toto/map	figures request	ed (figures o	an be combined).	4
OVERALL WETLA	ND CATEGO	RY III (ba				
1. Category of w	etland based		2142	otal Es	Stimuted Ar Lacre	ea
					Score for each	
	Category II – To				function based on three	
	Category III – To				ratings	
	Category IV – To	otal score = 9 -	15		(order of ratings is not	
FUNCTION	Improving Water Quality	Hydrologic	Habitat		important) 9 = H,H,H	
		Circle the ap	propriate ratings	1	8 = H,H,M	
Site Potential	H M L	H (M) L	H M L]	7 = H,H,L	
Landscape Potential	H M L	H M L	H M L]	7 = H,M,M	
Value	H M L	H M L	H M L	TOTAL	6 = H,M,L	
Score Based on Ratings	7	7	4	18	6 = M,M,M 5 = H,L,L 5 = M,M,L	
		:			3 = W,W,L 4 = M,L,L 3 = L,L,L	

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of: E2-	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	D-1
Hydroperiods	D 1.4, H 1.2	D-2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	D-1/2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	D-3
Map of the contributing basin	D 4.3, D 5.3	D-4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	D-4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	D-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	D-6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #	
Cowardin plant classes	H 1.1, H 1.4		
Hydroperiods	H 1.2		
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3		
Plant cover of dense , rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1		
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2		
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3		

HGM Classification of Wetlands in Western Washington

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

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

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

NO – go to 2

YES - the wetland class is Tidal Fringe - go to 1.1

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

NO - Saltwater Tidal Fringe (Estuarine)

YES - Freshwater Tidal Fringe

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

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

NO - go to 3

YES - The wetland class is Flats

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

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 - __At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

- 4. Does the entire wetland unit meet all of the following criteria?
 - ___The wetland is on a slope (slope can be very gradual),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 - The water leaves the wetland without being impounded.

NO – go to 5

YES – The wetland class is **Slope**

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

- 5. Does the entire wetland unit meet all of the following criteria?
 - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 - ___The overbank flooding occurs at least once every 2 years.

Wetland name or number \mathbb{E}^{2}

NO - go to 6

YES - The wetland class is **Riverine**

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

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

NO - go to 7

YES - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO - go to 8

YES - The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating	
Slope + Riverine	Riverine	
Slope + Depressional	Depressional	
Slope + Lake Fringe	Lake Fringe	
Depressional + Riverine along stream within boundary of depression	Depressional	
Depressional + Lake Fringe	Depressional	
Riverine + Lake Fringe	Riverine	
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE	

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

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1 0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	3
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1 D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 Ng = 0	1
	9
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):	/
Wetland has persistent, ungrazed, plants > 95% of area points 5	
Wetland has persistent, ungrazed, plants > ½ of area points = 3	5
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1	
Wetland has persistent, ungrazed plants <1/10 of area points = 0	
D 1.4. Characteristics of seasonal ponding or inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	
Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland	
Area seasonally ponded is > $\frac{1}{2}$ total area of wetland	2
Area seasonally ponded is < 1/4 total area of wetland points = 0	
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is: 12-16 = H 6-11 M 0-5 = L Record the rating on the first page	ge
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	/
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes #1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No $\neq 0$	- //
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 D 2.3?	-4
Source human habitation Yes = 1 No = 0	/
Total for D 2 Add the points in the boxes above	3
Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M0 = L Record the rating on the first	
D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	Ø
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes=1 No = 0	
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES	- [
if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	8
Total for D 3 Add the points in the boxes above	/
Rating of Value If score is:2-4 = H	

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradati	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Points 4	4
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1	Ø
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. West Trib basin. The area of the basin is less than 10 times the area of the unit 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 wetland is in the Flats class points = 0 points = 0 points = 5 points = 0 points = 5 points = 5	3
Total for D 4 Add the points in the boxes above	7
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the f	irst page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	3
Rating of Landscape Potential If score is: 13 = H 1 or 2 = M 0 = L Record the rating on the fi	rst page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	telad.
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooding occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why points = 0	1
There are no problems with flooding downstream of the wetland. points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	Ø
Total for D 6 Add the points in the boxes above	7
Rating of Value If score is: $2-4 = H$ $\sqrt{1 = M}$ $0 = L$ Record the rating on the fi	rst page

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat H 1.0. Does the site have the potential to provide habitat? H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 _Emergent 3 structures: points = 2 _Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present: points = 3 Seasonally flooded or inundated 2.3/acres 3 types present: points = 2 Occasionally flooded or inundated 2 types present: points **£** 1 Saturated only 0.36ac 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points Freshwater tidal wetland 2 points H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species points = 25 - 19 species points **# 1** < 5 species points = 0 H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row are HIGH = 3points

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of checks is the number, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for dennir slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in area permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see strata)	s at least 3.3 ft (1 m) ng (> 30 degree yet weathered s that are	2
Total for H 1 Add the points i	n the boxes above	5
Rating of Site Potential If score is:15-18 = H7-14 = M	Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2 If total accessible habitat is: > ¹/₃ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon < 10% of 1 km Polygon H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat	points = 3 points = 2 points = 1 points = 0	4
Undisturbed habitat > 50% of Polygon Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon	points = 3 points = 2 points = 1 points = 0	/
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity	points = (- 2) points = 0	-2
Patter of the transfer of the	n the boxes above	_/_
Rating of Landscape Potential If score is:4-6 = H1-3 = M1 = L	Record the rating on th	ne first page
H 3.0. Is the habitat provided by the site valuable to society?		
 H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only that applies to the wetland being rated. Site meets ANY of the following criteria: — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the statement is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural — It has been categorized as an important habitat site in a local or regional comprehensive 	points = 2 ate or federal lists) Resources	,
Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m Site does not meet any of the criteria above	points = 1 points = 0	/
Rating of Value If score is:2 = H0 = L	Record the rating on t	he first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

Wetland name or number $\frac{E2-1}{}$

WDFW Priority Habitats

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

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

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

Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long. In Welland E2-4

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

Wetland name or number <u>E2-1</u>

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met	Category
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category No = Category I	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV	Cat. I
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	
 SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? 	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	Cat. I

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions</i> .	į
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
 Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	}
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
 The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) 	Cat. I
Yes — Go to SC 5.1 No = Not a wetland in a coastal lagoon	outi,
SC 5.1. Does the wetland meet all of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	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.	51.1
— The wetland is larger than $\frac{1}{10}$ ac (4350 ft ²)	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:	
Long Beach Peninsula: Lands west of SR 103	
— Grayland-Westport: Lands west of SR 105	Cat I
Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
Yes — Go to SC 6.1 No = not an interdunal wetland for rating	
SCC 1 lethe water d 1 as a least and a scale of the scale	C-+ 11
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2	Cat. II
for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
Yes = Category II No – Go to SC 6.3	Cat. III
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	
Yes = Category III No = Category IV	Cat. IV
Category of wetland based on Special Characteristics	VS 1.0
If you answered No for all types, enter "Not Applicable" on Summary Form	N/H



Figure D-1: E2-4 and E2-1 Cowardin Plant Classes Ecosystems Technical Report



Figure D-2: E2-4 and E2-1 Hydroperiods Ecosystems Technical Report



Figure D-3: E2-4 and E2-1 150ft Boundary Areas Ecosystems Technical Report

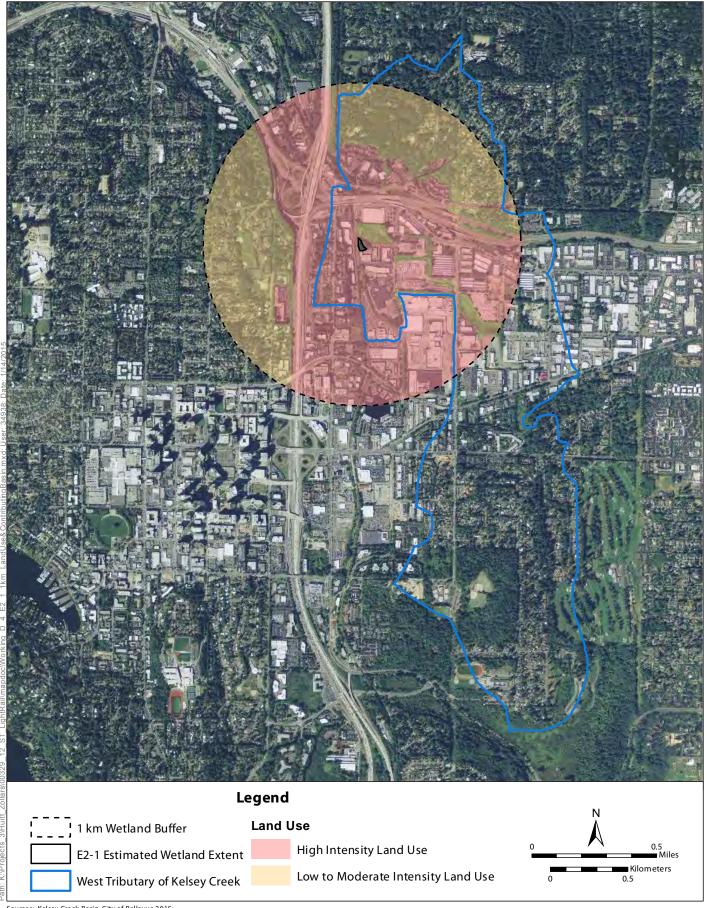
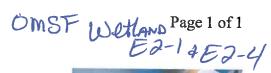


Figure D-4. E2-1 Wetland Contributing Basin and Land Use Intensity Ecosystems Technical Report

303(d) Report Screen Shot





Washington State Water Quality Assessment 303(d)/305(b) Integrated Report



Category 3 listings contain data insufficient in determining water quality and so have been removed from your results. Click here to include these 14 omitted listings.

Search	Results:	9 Matches
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View Listing	Category	WRIA	Waterbody Name	<u>Parameter</u>	Medium	Map Link
7026	5	8 - Cedar-Sammamish	KELSEY CREEK	Temperature	Water	7026
12624	1	8 - Cedar-Sammamish	KELSEY CREEK	pH	Water	12624
<u>12674</u>	5	8 - Cedar-Sammamish	KELSEY CREEK	Dissolved Oxygen	Water	12674
<u>13126</u>	5	8 - Cedar-Sammamish	KELSEY CREEK	Bacteria	Water	13126
13584	2	8 - Cedar-Sammamish	KELSEY CREEK	Copper	Water	13584
13587	2	8 - Csdar-Sammamish	KELSEY CREEK	Mercury	Water	13587
<u>46931</u>	5	8 - Cedar-Sammamish	KELSEY CREEK	Bacteria	Water	46931
<u>47987</u>	2	8 - Cedar-Sammamish	KELSEY CREEK	Dissolved Oxygen	Water	47987
<u>51279</u>	1	8 - Cedar-Sammamish	KELSEY CREEK	рН	Water	51279

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http://www.ecy.wa.gov

Water Quality Improvement Projects (TMDLs)

Water Quality Improvement > Water Quality Improvement Projects by WRIA 8: Cedar-Sammamish

WRIA 8: Cedar-Sammamish

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.

Counties

- King
- Snohomish



Waterbody Name	Pollutants	Status**	TMDL Lead	
Ballinger Lake	Total Phosphorus	Approved by EPA	<u>Tricia Shoblom</u> 425-649-7288	
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan	
	Dissolved Oxygen Temperature	Approved by EPA	425-649-4425	
<u>Cottage Lake</u>	Total Phosphorus	Approved by EPA Has an implementation plan	<u>Tricla Shoblom</u> 425-649-7288	
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	<u>Joan Nolan</u> 425-649-4425	
Little Bear Creek Tributarles: Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Raiph Syricek 425-649-7036	
North Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrjcek 425-649-7036	

Pipers Creek	Fecal Coliform	Approved by EPA	<u>Joan Nolan</u> 425-649-4425
Swamp Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svricek 425-649-7036

^{**} Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

For more information about WRIA 8:

- Waterbodies in WRIA 8 using the Water Quality Assessment Query Tool
- Watershed Information for WRIA 8

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Last updated January 2013

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^{*} The Department of Ecology and other state resource agencies frequently use a system of 62 "Water Resource Inver "WRIAs" to refer to the state's major watershed basins.

Name of wetland (if known): BNSF Northeast

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

Date of site visit: May 15, 2013

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Rated by:	C. Douglas & J. Pursley Trained by	y Ecology? Y	es 🛛 No 🔲		Date	e of training: <u>N</u>	<u>1ay 2007</u>
SEC: <u>29</u>	TOWNSHP: 24N	RNGE: <u>5E</u>		Is S/7	Γ/R in Appei	ndix D? Yes	□ No ⊠
		land units Fi	guro F	stimated size			
	Map of wet	ianu umi. Fi	gure E	stimated size			
		SUMMA	RY OF RATI	NG			
Category l	based on FUNCTIONS provided	by wetland:			⊠III	\square IV	
	Category I = Score > 70	7	Score for Wa	ater Quality Funct	tions	14	
				•	_		
	Category II = Score 51 - 69			Hydrologic Funct	_	16	
	Category III = Score $30 - 50$		Score	for Habitat Funct	tions	10	
	Category IV = Score < 30		TOTA	L Score for Funct	tions	40	
Category b	pased on SPECIAL CHARACTER	SISTCS of Wet	tland 🔲 I	□II	\triangleright	Does not ap	ply
	Final Cate	gory (choos	e the "highest"	category from ab	oove")	III	
	Summary of basic	information	about the wet	land unit	<u> </u>		
	Wetland Unit has Spec			HGM Class			
	Characteristics	141		for Rating			
	Estuarine		Depressiona				
	Natural Heritage Wetlan	ıd 🔲	Riverine				
	Bog		Lake-fringe				
	Mature Forest		Slope		14		
	Old Growth Forest		Flats		 		
	Coastal Lagoon		Freshwater	Tidal	 		
	Interdunal						
	None of the above		Check if unit HGM classes	t has multiple s present			
Doos the	vetland being rated meet any of t	he criterie he	low? If you ar	newar VES to any	of the guess	tions halow w	ou will
	otect the wetland according to the						ou wiii
	Check List for Wetland (in addition to the prote	ls that Need	Additional P	rotection		YES	NO
SD1 Has	the wetland unit been documented				and or		
Endo For	angered animal or plant species (the purposes of this rating system, to or federal database.	T/E species)?					
	the wetland unit been documented	l as habitat for	r any State liste	d Threatened or			

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

SP4. Does the wetland unit have a local significance in addition to its functions? For example, the

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

SP3.

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic		
1.	NO − go to 2 If yes, is the salinity of the water during periods of ann YES − Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estu	☐ YES – the wetland class is Tidal Fringe and low flow below 0.5 ppt (parts per thousand)?	Salt
	this separation is being kept in this revision. To maintain consinote, however, that the characteristics that define Category I an	istency between editions, the term "Estuarine" wetland is kept. Pleased II estuarine wetlands have changed (see p).	se
2.	The entire wetland unit is flat and precipitation is only sour runoff are NOT sources of water to the unit.		
	\square NO – go to 3 \square YES – The If your wetland can be classified as a "Flats" wetland,	ne wetland class is Flats use the form for Depressional wetlands.	
3.	the surface) where at least 20 acres (8ha) in si At least 30% of the open water area is deeper than 6	f a body of permanent open water (without any vegetation oze;	n
4.	Does the entire wetland meet all of the following criteria? The wetland is on a slope (slope can be very gradue) The water flows through the wetland in one direction subsurface, as sheetflow, or in a swale without The water leaves the wetland without being impour NOTE: Surface water does not pond in these shallow depressions or behind hummocks (depressions or behind hummocks)	al). on (unidirectional) and usually comes from seeps. It may flot t distinct banks.	
5.	The overbank flooding occurs at least once every two NOTE: <i>The riverine unit can contain depress</i>	ets inundated by overbank flooding from that stream or river two years. ions that are filled with water when the river is not flooding the wetland class is Riverine	
6.	Is the entire wetland unit in a topographic depression in whe the year. This means that any outlet, if present is higher that the NO – go to 7 YES –		of
7.	Is the entire wetland located in a very flat area with no obv pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does no	ot
8.	Your wetland unit seems to be difficult to classify and probably con slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REG AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your the second column represents 10% or more of the total area of the w than 10% of the unit, classify the wetland using the class that represents	tains several different HGM classes. For example, seeps at the base a depressional wetland has a zone of flooding along its sides. GO IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFEREN Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommende retland unit being rated. If the area of the class listed in column 2 is lents more than 90% of the total area.	NT e ed in
	HGM Classes within the wetland unit being rated Slope + Riverine	HGM Class to Use in Rating 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	Treat as ESTUARINE under wetlands with special	
	freshwater wetland	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 Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure∏
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure <u></u>
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	1
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland 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 years.	Figure 🗌
	 Area seasonally ponded is > 1/2 total area of wetland	4
	Total for D 1 Add the points in the boxes above	7
D 2	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 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	(see p. 44)
	Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier
	▼YES multiplier is 2 NO multiplier is 1	2 14
_	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>14</u>
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D 3	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)	2
	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). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	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 unit	3
	That the points in the boxes above	

D 4	Does the wetland have the opportunity 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 equation resources from flooding or excessive and/or erosive	
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide	
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	
	indicators of opportunity apply.	
	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	
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	Multiplier
	Other	1
	✓ YES multiplier is 2	2
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	<u>16</u>

Comments: ____

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)
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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)	Figure <u></u>
	If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	1
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	☐ Freshwater tidal wetland = 2 points Map of hydroperiods	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure □
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	6

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 50% circumference	Figure □
	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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? ∇ES = 1 point NO = 0 points	0

Comments:	
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	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
	NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
	and wildlife (full descriptions in WDFW PHS report 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%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
	component is important (full descriptions in WDFW PHS report p. 158).	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	terrestrial ecosystems which mutually influence each other.	
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	
	Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	
	functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	☐ Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	☐ Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
	end, and > 6 m (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	0
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
	Nearby wetlands are addressed in question H 2.4)	
	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 1/2 mile, and the connections between them are	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
	but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 mile points = 5	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
	disturbed. points = $3 \boxtimes$	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within 1/2 mile	
	• There is at least 1 wetland within 1/2 mile	2
	• There are no wetlands within 1/2 mile	3
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
	TOTAL for H 1 from page 8	6
♦	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	<u>10</u>
~		

Comments: ____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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 With a saminty greater than 0.3 ppt. \square YES = Go to SC 1.1 \square 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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or	I/II
	contiguous freshwater wetlands.	Ш
SC2	Natural Heritage Wetlands (see p. 87)	
- C	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? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	☐ 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 a site with state threatened	
	or endangered plant species?	Cat I
	☐ YES = Category 1 ☐ NO not a Heritage Wetland	
g G 3	Bogs (see p. 87)	
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \boxtimes NO = Is not a bog for purpose of rating	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	\square Mature forests: (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	☐ YES = Category I ☐ NO = not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
500	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.	
	\Box The lagoon in which the wetland is located contains surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	☐ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
	☐ YES = Category I ☐ NO = Category II	
SC6	<u>Interdunal Wetlands</u> (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	\square YES = Category II \square NO = go to SC 6.2	
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	☐ YES = Category III	
	Category of wetland based on Special Characteristics	
♦	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Comments:

RATING SUMMARY – Western Washington

Name of wetland (or ID #): E2-4	Date of site visit: 12-15-14
Rated by Torrey Luiting	Date of site visit: 12-15-14 Trained by Ecology? Yes No Date of training 3/2007
HGM Class used for rating Depression	nel Wetland has multiple HGM classes? Y N Credit
NOTE: Form is not complete withou Source of base aerial photo/map	it the figures requested (figures can be combined). in 4/20
OVERALL WETLAND CATEGORY	(based on functions / or special characteristics)

Total Area 5.53 acres

1.	Category of wetland based on FUNCTIONS
	Category I — Total score = 23 - 27
	Category II - Total score = 20 - 22
	Category III – Total score = 16 - 19
	Category IV — Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
		Circle the ap	propriate ratings	1
Site Potential	H M L	H M L	H M L	
Landscape Potential	H M L	H M L	H M L	Í
Value	H M L	H M L	H M L	TOTAL
Score Based on Ratings	7	7	6	20

Score for each function based on three ratings (order of ratings is not important)
9 = H,H,H 8 = H,H,M 7 = H,H,L 7 = H,M,M 6 = H,M,L
6 = M,M,M 5 = H,L,L 5 = M,M,L 4 = M,L,L
3=111

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of: E2-4	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	D-1
Hydroperiods	D 1.4, H 1.2	D-2
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	D-1/2
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	N-3
Map of the contributing basin	D 4.3, D 5.3	0-4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	D-4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	D-5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	0-10

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

<u>Lake Fringe Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetlands in Western Washington

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

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

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

NO go to 2

YES - the wetland class is Tidal Fringe - go to 1.1

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

NO - Saltwater Tidal Fringe (Estuarine)

YES - Freshwater Tidal Fringe

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

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

NO - go to 3

YES - The wetland class is Flats

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

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - __The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
 - At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO - go to 4

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - ___The wetland is on a slope (slope can be very gradual),
 - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
 - The water leaves the wetland without being impounded.

NO go to 5

YES - The wetland class is Slope

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

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 - ___The overbank flooding occurs at least once every 2 years.

Wetland name or number E2-4

NO – go to 6

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

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

NO - go to 7

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO - go to 8

YES – The wetland class is **Depressional**

YES The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

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

DEPRESSIONAL AND FLATS WETLANDS			
Water Quality Functions - Indicators that the site functions to improve water quality			
D 1.0. Does the site have the potential to improve water quality?			
D 1.1. Characteristics of surface water outflows from the wetland:			
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).			
points = 3			
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	ク		
points €2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	_		
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1			
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	OS		
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):	7		
Wetland has persistent, ungrazed, plants > 95% of area points = 5			
Wetland has persistent, ungrazed, plants > ½ of area points = 3	5		
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1			
Wetland has persistent, ungrazed plants $< \frac{1}{10}$ of area points = 0			
D 1.4. Characteristics of seasonal ponding or inundation:			
This is the area that is ponded for at least 2 months. See description in manual.	, ,		
Area seasonally ponded is > ½ total area of wetland 2.8 acres \$ 5.53 well. points 4	4		
Area seasonally ponded is > 1/4 total area of wetland points = 2	1		
Area seasonally ponded is < 1/4 total area of wetland points = 0			
Total for D 1 Add the points in the boxes above	1/		
Rating of Site Potential If score is: 12-16 = H 6-11 M 0-5 = L Record the rating on the first po	ıge		
D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland unit receive stormwater discharges? Yes 1 No = 0	1		
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes $= 1$ No $= 0$	1		
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No $= 0$	Ø		
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3?	5		
Source human encampments Yes = 1 No = 0	(
Total for D 2 Add the points in the boxes above	3		
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the file	st page		
D 3.0. Is the water quality improvement provided by the site valuable to society?	TOTAL .		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the	24		
303(d) list? $Yes = 1 No \neq 0$	φ		
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1		
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	Ø		
Total for D 3 Add the points in the boxes above	1		
Rating of Value If score is:2-4 = H1 # M0 = L			
Kelsey Creek is 303(d) listed waterquality fu			
12.11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	notized		

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradat	ion
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in) Doints = 0	5
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. West Trib is The area of the basin is less than 10 times the area of the unit 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 wetland is in the Flats class D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin. Poor trib is Points = 5 Points = 0 Points = 5	acres t
Total for D 4 Add the points in the boxes above	10
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the	first page
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	3
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. • Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why points = 0 There are no problems with flooding downstream of the wetland.	/
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	Ø
Total for D 6 Add the points in the boxes above	1
Rating of Value If score is:2-4 = H1 = M0 = L Record the rating on the	first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

D5.2 0.76 acres of 7.8 acres within 150 feet of the wetland are not generating pollutants

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed. Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) I structure: points = 1 I fire Forested class has 3 out of 5 strata (canoply, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	4
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 0.79 ac 4 or more types present: points = 3 Seasonally flooded or inundated 2.3 / ac 3 types present: points = 2 Occasionally flooded or inundated 2.4 ac 2 types present: points = 1 Saturated only 1 type present: points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake Fringe wetland 2 points Freshwater tidal wetland 2 points	2
1 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species 5 - 19 species points = 1 < 5 species points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row are HIGH = 3points	3

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of point	s.
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3	ft (1 m)
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degr	·ee
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weather	ed 5
where wood is exposed)	
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list	of
strata)	
Total for H 1 Add the points in the boxes a	above /5
Rating of Site Potential If score is:15-18 = H0-6 = L Record the re	ating on the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	/
Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = ()
· · · · · · · · · · · · · · · · · · ·	
>1/3 (33.3%) of 1 km Polygon abutting land entirely	
20 200 - 64 1 - 2	ts = 3
40 400/ -£4 loo D.L.	ts = 2
1400/ 541 D.	ts = 1
HOO Hadden to the total and th	ts = 0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. **Calculate:** \(\begin{align*} \text{40.589} \\ \text{9.589} \\ \text{40.589} \\ \text{20.589} \\ 20.589	. 20
Undisturbed habitat > 50% of Polygon / poin	ts = 3
Undisturbed habitat 10-50% and in 1-3 patches poin	ts = 2
Undisturbed habitat 10-50% and > 3 patches poin	ts = 1
	ts = 0
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use 59. 42% high intensity	
> 50% of 1 km Polygon is high intensity land use points =	· (-2) -2
≤ 50% of 1 km Polygon is high intensity poin	ts = 0
Total for H 2 Add the points in the boxes a	
Rating of Landscape Potential If score is:4-6 = H1-3 = M< 1/= L Record the rate	ting on the first page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest	score
that applies to the wetland being rated.	
	ts = 2
— It has 3 or more priority habitats within 100 m (see next page)	
— It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal	lists)
It is mapped as a location for an individual WDFW priority species	
— It is a Wetland of High Conservation Value as determined by the Department of Natural Resources	, ,
— It has been categorized as an important habitat site in a local or regional comprehensive plan, in a	
Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m	
	<u>3=1</u>
Site does not meet any of the criteria above point	s = 0
Rating of Value If score is:2 = H1 = M0 = L Record the ro	ating on the first page

Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	Category
Check off any enteria that apply to the wetiana. Circle the category when the appropriate criteria are met.	
SC 1.0. Estuarine wetlands	en 71. just
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i>, see page 25) At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- 	Cat. I
mowed grassland.	
The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	
Conservation Value? Yes – Go to SC 2.2 No – Go/to SC 2.3	Cat. I
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	
Yes = Category I No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website? Yes = Category I No = Not a WHCV	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key</i>	
below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2	
more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 3.3 No = Is not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog No - Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the	
	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar,	
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i>	
 Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
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 aggressive, opportunistic plant species (see list of species on p. 100).	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 $^{1}/_{10}$ ac (4350 ft ²)	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:	
Long Beach Peninsula: Lands west of SR 103	
- Grayland-Westport: Lands west of SR 105	Cat I
— Ocean Shores-Copalis: Lands west of SR 115 and SR 109	
Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	Cat. II
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
Yes = Category II No – Go to SC 6.3	Cat. III
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	
Yes = Category III No = Category IV	Cat. IV
Category of wetland based on Special Characteristics	111
If you answered No for all types, enter "Not Applicable" on Summary Form	MH



Figure D-1: E2-4 and E2-1 Cowardin Plant Classes Ecosystems Technical Report



Figure D-2: E2-4 and E2-1 Hydroperiods Ecosystems Technical Report



Figure D-3: E2-4 and E2-1 150ft Boundary Areas Ecosystems Technical Report

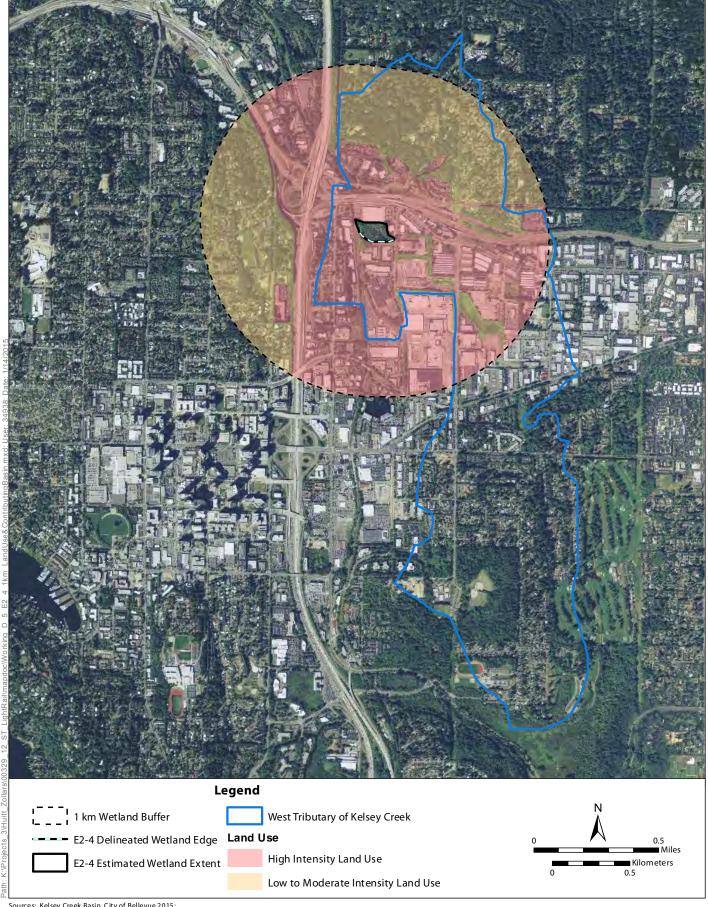
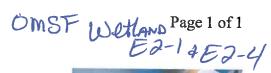


Figure D-5. E2-4 Wetland Contributing Basin and Land Use Intensity Ecosystem Technical Report

303(d) Report Screen Shot





Washington State Water Quality Assessment 303(d)/305(b) Integrated Report



Category 3 listings contain data insufficient in determining water quality and so have been removed from your results. Click here to include these 14 omitted listings.

Search	Results:	9 Matches
--------	----------	-----------

View Listing	Category	WRIA	Waterbody Name	<u>Parameter</u>	Medium	Map Link
7026	5	8 - Cedar-Sammamish	KELSEY CREEK	Temperature	Water	7026
12624	1	8 - Cedar-Sammamish	KELSEY CREEK	рН	Water	12624
12674	5	8 - Cedar-Sammamish	KELSEY CREEK	Dissolved Oxygen	Water	12674
<u>13126</u>	5	8 - Cedar-Sammamish	KELSEY CREEK	Bacteria	Water	13126
13584	2	8 - Cedar-Sammamish	KELSEY CREEK	Copper	Water	13584
<u>13587</u>	2	8 - Csdar-Sammamish	KELSEY CREEK	Mercury	Water	13587
<u>46931</u>	5	8 - Cedar-Sammamish	KELSEY CREEK	Bacteria	Water	46931
<u>47987</u>	2	8 - Cedar-Sammamish	KELSEY CREEK	Dissolved Oxygen	Water	47987
<u>51279</u>	1	8 - Cedar-Sammamish	KELSEY CREEK	pH	Water	51279

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Page 1 of 2 OMSF Wetland E2-1 4 E2-4



http://www.ecy.wa.gov

Water Quality Improvement Projects (TMDLs)

Water Quality Improvement > Water Quality Improvement Projects by WRIA 8: Cedar-Sammamish

WRIA 8: Cedar-Sammamish

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.

Counties

- King
- Snohomish



Waterbody Name	Pollutants	Status**	TMDL Lead	
Ballinger Lake	Total Phosphorus	Approved by EPA	<u>Tricia Shoblom</u> 425-649-7288	
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan	
	Dissolved Oxygen Temperature	Approved by EPA	425-649-4425	
<u>Cottage Lake</u>	Total Phosphorus	Approved by EPA Has an implementation plan	<u>Tricla Shoblom</u> 425-649-7288	
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	<u>Joan Nolan</u> 425-649-4425	
Little Bear Creek Tributarles: Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Raiph Syricek 425-649-7036	
North Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svrjcek 425-649-7036	

Pipers Creek	Fecal Coliform	Approved by EPA	<u>Joan Nolan</u> 425-649-4425
Swamp Creek Fecal Coliform		Approved by EPA Has an implementation plan	Ralph Svricek 425-649-7036

^{**} Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

For more information about WRIA 8:

- Waterbodies in WRIA 8 using the Water Quality Assessment Query Tool
- Watershed Information for WRIA 8

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Last updated January 2013

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^{*} The Department of Ecology and other state resource agencies frequently use a system of 62 "Water Resource Inver "WRIAs" to refer to the state's major watershed basins.

SP3.

Name of wetland (if known): BNSF East

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

Date of site visit: February 14, 2013

 \boxtimes

 \boxtimes

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SEC: 20 TOWNSHP: 24N RNGE: 5E Is S/I/R in Appendix D? Yes No	Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes No Date of training: May 2007						
SUMMARY OF RATING Category based on FUNCTIONS provided by wetland:	SEC: <u>29</u>	TOWNSHP: <u>24N</u>	RNGE: <u>5E</u>		Is S/T/R in Appea	ndix D? Yes	□ No ⊠
SUMMARY OF RATING Category based on FUNCTIONS provided by wetland:		Map of wet	land unit: Fi	gure Estimated	size		
Category I = Score > 70 Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score 30							
Category I = Score > 70 Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score < 30 Category IV = Score < 30 TOTAL Score for Hydrologic Functions 37 Category based on SPECIAL CHARACTERISTCS of Wetland III	C-4	EUNICTIONS			⋈ 111	□ 13 7	
Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score < 30 Category IV = Score < 30 TOTAL Score for Habitat Functions TOTAL Score for Functions TOTAL Score f	Category ba	ased on FUNCTIONS provided	by wetland:			□IV	
Category III = Score 30 - 50 Category IV = Score < 30 Category based on SPECIAL CHARACTERISTCS of Wetland		Category I = Score > 70		Score for Water Qualit	ty Functions	14	
Category IV = Score < 30 TOTAL Score for Functions 37 Category based on SPECIAL CHARACTERISTCS of Wetland		Category II = Score 51 - 69		Score for Hydrolog	ic Functions	16	
Category based on SPECIAL CHARACTERISTCS of Wetland		Category III = $Score 30 - 50$		Score for Habit	at Functions	7	
Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Used for Rating Use		Category IV = Score < 30		TOTAL Score for	or Functions	37	
Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Used for Rating Depressional Riverine Used for Rating U	Category ba	sed on SPECIAL CHARACTER	ISTCS of Wet	tland 🗌 I		Does not ap	ply
Wetland Unit has Special Characteristics Used for Rating Depressional Riverine Depre		Final Cate	gory (choose	e the "highest" category	from above")	III	
Wetland Unit has Special Characteristics Estuarine Depressional Riverine Depressiona		Summary of basic	information	about the wetland unit			
Depressional Riverine Lake-fringe Lake-fringe Slope Lake-fringe Slope Flats Freshwater Tidal Check if unit has multiple HGM classes present Check List for Wetlands that Need Additional Protection (in addition to the protection 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)? For the purposes of this rating system, "documented" means the wetland is on the appropriate Siope Lake-fringe Slope Flats Freshwater Tidal Check if unit has multiple HGM classes present Span and the special characteristics found in the wetland. Span and the wetland according to the regulations regarding the special characteristics found in the wetland. Span and the wetland according to the regulations regarding the special characteristics found in the wetland. Span and the wetland according to the regulations regarding the special characteristics found in the wetland. Span and the span and			-				
Natural Heritage Wetland							
Bog			d				
Mature Forest			<u>" </u>				
Coastal Lagoon				Ü			
Interdunal							
None of the above Check if unit has multiple HGM classes present Does the wetland 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 Need Additional Protection (in addition to the protection 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)? For the purposes of this rating system, "documented" means the wetland is on the appropriate				Freshwater Tidal			
Does the wetland 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 Need Additional Protection (in addition to the protection 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)? For the purposes of this rating system, "documented" means the wetland is on the appropriate		Interdunal			. ,		
Check List for Wetlands that Need Additional Protection (in addition to the protection 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)? For the purposes of this rating system, "documented" means the wetland is on the appropriate		None of the above			iple		
Check List for Wetlands that Need Additional Protection (in addition to the protection 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)? For the purposes of this rating system, "documented" means the wetland is on the appropriate							
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							
Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate							NO
For the purposes of this rating system, "documented" means the wetland is on the appropriate							

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

SP2. Has the wetland unit been documented as habitat for any State listed Threatened or

in a local management plan as having special significance.

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

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

freshwater wetland

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic			
1.	NO − go to 2 If yes, is the salinity of the water during periods of ann YES − Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Est	☐ YES – the wetland class is Tidal Fringe nual low flow below 0.5 ppt (parts per thousand)? ☐ NO – Saltwater Tidal Fringe (Estuarine) a use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it narine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please		
2.		ne wetland class is Flats		
	If your wetland can be classified as a "Flats" wetland,			
3.	the surface) where at least 20 acres (8ha) in si At least 30% of the open water area is deeper than 6	of a body of permanent open water (without any vegetation on ze;		
4.	subsurface, as sheetflow, or in a swale withou The water leaves the wetland without being impous NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dep	on (unidirectional) and usually comes from seeps. It may flow t distinct banks.		
5.	The overbank flooding occurs at least once every two NOTE: <i>The riverine unit can contain depress</i>	ets inundated by overbank flooding from that stream or river. wo years. ions that are filled with water when the river is not flooding ne wetland class is Riverine		
6.	the year. This means that any outlet, if present is higher the	tich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. The wetland class is Depressional		
7.	pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The The wetland class is Depressional		
8.				
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating		
	Slope + Riverine	Riverine		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe Depressional + Piverine along stream within boundary	Lake-fringe Depressional		
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional		
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special		
	G	a a a a a a a a a a a a a a a a a a a		

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.

characteristics

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 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 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure 🗌
	• Wetland has persistent, ungrazed vegetation > = 93% of area	
	• Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1	
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	1
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	Figure 🗌
	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 years.	rigure
	• Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland	4
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	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 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	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier
	YES multiplier is 2 NO multiplier is 1	2
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>14</u>
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	•
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	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 outletpoints = 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) points = 0	
	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). • Marks of ponding are 3 ft. or more above the surface or bottom of the outletpoints = 7	
	• The wetland is a "headwater" wetland points = 5	3
	 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft points = 0	
	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 unit	3
	 The area of the basin is 10 to 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	8

D 4	Does the wetland have the opportunity 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. <i>Note which of the following indicators of opportunity apply.</i> 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 Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier
	✓ YES multiplier is 2	2
♦	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	<u>16</u>

Comments: ____

The	These questions apply to wetlands of all HGM classes.		
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		
H 1	I 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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure 🔲	
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	0	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure	
	Freshwater tidal wetland = 2 points Map of hydroperiods	1	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure 🗌	
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	3	

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure □
	Н 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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points	0

Comments:	
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H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
and wildlife (full descriptions in WDFW PHS report 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 multiple of the control of the co	:
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%; decay, decadence, numbers of snags, and quantity of large downed material is general	v
less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	9
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
component is important (full descriptions in WDFW PHS report p. 158).	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a	
wet prairie (full descriptions in WDFW PHS report p. 161).	
☐ Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	;
functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
WDFW report: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in)	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the larges	
end, and > 6 m (20 ft) long. If we tland 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	0
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	U
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 4)	24)
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	,4)
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	¬
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	-
wetlands within 1/2 mile	۱ ا
•	_
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	a
disturbed	7
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	,
within 1/2 mile points = 3 [
• There is at least 1 wetland within 1/2 mile	4
• There are no wetlands within 1/2 mile]
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2	.4 4
TOTAL for H 1 from page	8 7
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p.	1 <u>11</u>
Comments	<u> </u>

Comments: ____

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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 With a saminty greater than 0.3 ppt. \square YES = Go to SC 1.1 \square 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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or	I/II
	contiguous freshwater wetlands.	Ш
SC2	Natural Heritage Wetlands (see p. 87)	
- C	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? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	☐ 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 a site with state threatened	
	or endangered plant species?	Cat I
	☐ YES = Category 1 ☐ NO not a Heritage Wetland	
g G 3	Bogs (see p. 87)	
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \square NO = Is not a bog for purpose of rating	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth.	Cat. I
	■ YES = Category I ■ NO = not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
SCS	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	☐ YES = Go to SC 5.1 NO not a wetland in a coastal lagoon	
	SC 5.1 Does the wetland meet all of the following three conditions? The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has	
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
	☐ YES = Category I ☐ NO = Category II	
SC6	<u>Interdunal Wetlands</u> (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas:	
	Long Beach Peninsula lands west of SR 103	
	Grayland-Westport lands west of SR 105	
	Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	∟ Cat. III
	YES = Category III	
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	<u>NA</u>

Comments:

SP3.

Name of wetland (if known): DP UHP qty

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

Date of site visit: May 15, 2013

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Rated by: C. Douglas & J.	Pursley Trained by	Ecology? Y	es 🛛 No 🗌		Date	of training: <u>M</u>	<u>1ay 2007</u>
SEC: <u>29</u> TOWN	NSHP: <u>24N</u>	RNGE: <u>5E</u>		Is S/	Γ/R in Apper	ndix D? Yes	☐ No ⊠
	Man of wath	and unit. Fi	gure Est	imatad siza			
	Map of well	and unit. Fi	gure Est	imateu size			
		SUMMA	RY OF RATIN	\mathbf{G}			
Category based on FUNC	CTIONS provided l	by wetland:	□ I	□II	\boxtimes III	\square IV	
Category I	= Score > 70		Score for Wate	er Quality Func	tions	14	
	= Score 51 - 69			Iydrologic Func	_	16	
					_		
	= Score 30 - 50			or Habitat Func	 	10	
Category IV	= Score < 30		TOTAL	Score for Func	tions	40	
Category based on SPECI	AL CHARACTERI	STCS of Wet	tland 🗌 I		\triangleright	Does not ap	ply
	Final Categ	gory (choose	e the "highest" c	ategory from at	oove")	III	
	Summary of hasic	information	about the wetle	and unit			
¥¥/ 041	Summary of basic information about the wetland unit. Wetland Unit has Special Wetland HGM Class						
Characteristics used for Rating							
Estuar			Depressional				
	l Heritage Wetland	i T	Riverine				
Bog			Lake-fringe				
	e Forest		Slope				
	owth Forest		Flats				
	l Lagoon		Freshwater T	idal			
Interd			2 2 0 0 1 1 1 1 1 1				
	f the above		Check if unit I				
L							
Does the wetland 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.							
	List for Wetlands				10 0110 111 01	l vy coruna:	
	lition to the protect					YES	NO
SP1. Has the wetland un	it been documented	as a habitat f	for any Federally	y listed Threater	ned or		
Endangered anima	l or plant species (T	/E species)?					\boxtimes
	this rating system,		" means the wetl	and is on the ar	propriate		
state or federal database.							
SP2. Has the wetland un		as habitat for	any State listed	Threatened or			

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

SP4. Does the wetland unit have a local significance in addition to its functions? For example, the

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

The hydrogeomorphic classification groups wetlands in to those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands. Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

Page 1 of 12

freshwater wetland

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification.	☐ YES – the wetland class is Tidal Fringe and low flow below 0.5 ppt (parts per thousand)? ☐ NO – Saltwater Tidal Fringe (Estuarine) The suse the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it that in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please
2.		ne wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	•
3.	the surface) where at least 20 acres (8ha) in si At least 30% of the open water area is deeper than 6	of a body of permanent open water (without any vegetation on ze;
4.	subsurface, as sheetflow, or in a swale withou The water leaves the wetland without being impous NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dep	on (unidirectional) and usually comes from seeps. It may flow t distinct banks.
5.	Does the entire wetland meet all of the following criteria?	To House to Stope
	☐ The unit is in a valley or stream channel where it go ☐ The overbank flooding occurs at least once every to NOTE: The riverine unit can contain depress	ets inundated by overbank flooding from that stream or river. wo years. ions that are filled with water when the river is not flooding ne wetland class is Riverine
6.	the year. This means that any outlet, if present is higher the	aich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. The wetland class is Depressional
7.	pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The The wetland class is Depressional
8.	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGAREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your the second column represents 10% or more of the total area of the w than 10% of the unit, classify the wetland using the class that represents the represents representation of the representation	IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in vetland unit being rated. If the area of the class listed in column 2 is less
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional Lake fringe
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional
	Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special

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.

characteristics

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure <u></u>
	 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 ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing 	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	1
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland 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 years.	Figure <u></u>
	 Area seasonally ponded is > 1/2 total area of wetland	4
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	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 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 Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier
	▼ YES multiplier is 2 NO multiplier is 1	2
-	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	<u>14</u>
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D 3	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)	2
	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). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 • The wetland is a "headwater" wetland points = 5 • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 • Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 • Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water points = 1 • Marks of ponding less than 0.5 ft. points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	3
	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 unit	3
	Total for D 3 Add the points in the boxes above	8

D 4	Does the wetland have the opportunity 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 equation resources from flooding or excessive and/or erosive	
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide	
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	
	indicators of opportunity apply.	
	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	
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	Multiplier
	Other	1
	✓ YES multiplier is 2	2
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	<u>16</u>

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)
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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure _
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	1
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	☐ Freshwater tidal wetland = 2 points Map of hydroperiods	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure □
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	1
	TI TOTAL Score potential for providing habitat Add the points in the column above	L

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	Н 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure _
	11.0.0	Arial photo showing buffers	
	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 a 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). \[\textstyle \textsty	
		 Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? □ YES = 1 point NO = 0 points	0

Comments:

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
	NOTE: the connections do not have to be relatively undisturbed.	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
	and wildlife (full descriptions in WDFW PHS report 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%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
	component is important (full descriptions in WDFW PHS report p. 158).	
	☐ Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	terrestrial ecosystems which mutually influence each other.	
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a	
	wet prairie (full descriptions in WDFW PHS report p. 161).	
	☐ Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	
	functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	☐ Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
	western Washington and are ≥ 2 m (6.5 ft) in height. Priority logs are ≥ 30 cm (12 in) in diameter at the largest	
	end, and > 6 m (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	0
	No habitats = 0 points	0
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
	Nearby wetlands are addressed in question H 2.4)	
	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 1/2 mile, and the connections between them are	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
	but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	
	The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 mile	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
	disturbed points = 3 🖂	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within 1/2 mile	
	• There is at least 1 wetland within 1/2 mile	2
	• There are no wetlands within 1/2 mile	3
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
	TOTAL for H 1 from page 8	6
♦	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	<u>10</u>
Con	nmante:	

	Wetland Type - Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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.	
	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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Ш
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland	I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	
CCA	Natural Heritage Wetlands (see p. 87)	
SC2	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.)	
	☐ 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 a site with state threatened	Cat I
	or endangered plant species?	
	☐ YES = Category 1	_
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \square NO = Is not a bog for purpose of rating	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	\square Mature forests: (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	☐ YES = Category I ☐ NO = not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
500	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.	
	\Box The lagoon in which the wetland is located contains surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	☐ At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
	☐ YES = Category I ☐ NO = Category II	
SC6	<u>Interdunal Wetlands</u> (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	\square YES = Category II \square NO = go to SC 6.2	
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	☐ YES = Category III	
	Category of wetland based on Special Characteristics	
♦	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Comments:

Name of wetland (if known): DP UH'Uqwi y guv

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

Date of site visit: April 23, 2013

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Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes No Date of training: May 2007							
SEC: <u>29</u>	TOWNSHP: 24N	RNGE: <u>5E</u>		Is S/T/R	in Appen	dix D? Yes	□ No ⊠
	Map of wet	land unit: Fi	gure Estim	nated size			
			<u></u>				
		SUMMA	RY OF RATING				
Category based	on FUNCTIONS provided	by wetland:	□ I		III	\square IV	
Ca	tegory I = Score > 70]	Score for Water	Quality Functions	s	14	
Cat	egory II = Score 51 - 69		Score for Hyd	drologic Functions	s	16	
Cate	egory III = $Score 30 - 50$		Score for	Habitat Functions	s	12	
Cate	egory IV = Score < 30		TOTAL S	core for Functions	s	42	
Category based o	on SPECIAL CHARACTER	ISTCS of Wet	tland 🗌 I		\boxtimes	Does not ap	ply
	Final Cate	gory (choos	e the "highest" cat	egory from above	e")	III	
	Summary of basic	r information	about the wetland	d unit			
	Wetland Unit has Spec		Wetland HO				
	Characteristics		used for l				
	Estuarine		Depressional		\boxtimes		
	Natural Heritage Wetlan	ıd 📗	Riverine				
	Bog		Lake-fringe				
	Mature Forest		Slope				
	Old Growth Forest		Flats				
	Coastal Lagoon		Freshwater Tid	al			
	Interdunal						
	None of the above		Check if unit has HGM classes pro		\boxtimes		
				1			
Does the wetland 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.							
Charle 1 and Carr Washen de Aben Novel Additional December 2			NO				
SP1 Has the w				<u> </u>	or		
Endangere For the pu	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.						
SP2. Has the wetland unit been documented as habitat for any State listed Threatened or							

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

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

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

SP3.

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic		
1.	NO − go to 2 If yes, is the salinity of the water during periods of ann YES − Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estu	☐ YES – the wetland class is Tidal Fringe	Salt
	this separation is being kept in this revision. To maintain consinote, however, that the characteristics that define Category I an	stency between editions, the term "Estuarine" wetland is kept. Plea d II estuarine wetlands have changed (see p).	ise
2.	The entire wetland unit is flat and precipitation is only sour runoff are NOT sources of water to the unit. \square NO – go to 3 \square YES – Th	ce (>90%) of water to it. Groundwater and surface water e wetland class is Flats	
	If your wetland can be classified as a "Flats" wetland,		
3.	the surface) where at least 20 acres (8ha) in sign At least 30% of the open water area is deeper than 6	f a body of permanent open water (without any vegetation eze;	on
4.	Does the entire wetland meet all of the following criteria? The wetland is on a slope (slope can be very gradue) The water flows through the wetland in one direction subsurface, as sheetflow, or in a swale without is the water leaves the wetland without being impour NOTE: Surface water does not pond in these shallow depressions or behind hummocks (depressions or behind hummocks)	nl). In (unidirectional) and usually comes from seeps. It may flet distinct banks.	
5.	Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it go The overbank flooding occurs at least once every two NOTE: The riverine unit can contain depress	ets inundated by overbank flooding from that stream or rive	
6.	Is the entire wetland unit in a topographic depression in whe the year. This means that any outlet, if present is higher that \square NO – go to 7 \square YES – \square		e of
7.	Is the entire wetland located in a very flat area with no obvious pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet. No – go to 8 YES –		iot
8.	Your wetland unit seems to be difficult to classify and probably con slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REG AREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your the second column represents 10% or more of the total area of the w than 10% of the unit, classify the wetland using the class that represents	tains several different HGM classes. For example, seeps at the base a depressional wetland has a zone of flooding along its sides. GO IMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommendent unit being rated. If the area of the class listed in column 2 is ents more than 90% of the total area.	NT ne led in
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating	
	Slope + Riverine	Riverine	
	Slope + Depressional	Depressional Lake fringe	
	Slope + Lake-fringe Depressional + Riverine along stream within boundary	Lake-fringe Depressional	
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe	Depressional	
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special	
	freshwater wetland	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 Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure <u></u> 2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland 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 years.	Figure 🗌
	 Area seasonally ponded is > 1/2 total area of wetland	2
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland 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 Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	(see p. 44)
	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 Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1	Multiplier
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	14
•	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	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)	2
	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). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	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 unit	3
	Total for D 3 Add the points in the boxes above	8

D 4	Does the wetland have the opportunity 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 equation resources from flooding or excessive and/or erosive			
	it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide			
	gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>			
	indicators of opportunity apply.			
	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			
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	Multiplier		
	Other	1		
	✓ YES multiplier is 2	2		
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	<u>16</u>		

These questions appl	y to wetlands of all HGM classes.		Points
HABITAT FUN	ICTIONS - Indicators that wetland functions to pro	ovide important habitat.	(only 1 score per box)
H 1 Does the wetlan	nd have the <u>potential</u> to provide habitat for man	y species?	
Check to 1/4 acre Aque Eme Scru Fore	ion structure (see P. 72): the types of vegetation classes present (as defined by e or more than 10% of the area if unit is smaller that atic Bed argent plants th/shrub (areas where shrubs have > 30% cover) set the argent plant at the shrub > 30% cover)		Figure
The that eac Add the	nit has a forested class check if: forested class has 3 out of 5 strata (canopy, sub-ca h cover 20% within the forested polygon. number of vegetation types that qualify. If you ha 4 structures or more points = 4 2 structures points = 1	,	2
Check to cover many co	eriods (see p.73): The types of water regimes (hydroperiods) present water than 10% of the wetland or 1/4 acre to count (manently flooded or inundated assionally flooded or inundated rated only manently flowing stream or river in, or adjacent to, tonally flowing stream in, or adjacent to, the wetlar e-fringe wetland = 2 points	see text for descriptions of hydroperiods). 4 or more types present 3 or more types present 2 types present 1 type present the wetland	Figure
☐ Fres	shwater tidal wetland = 2 points	Map of hydroperiods	1
Count the species You do loosestr	s of Plant Species (see p. 75): he number of plant species in the wetland that cove can be combined to meet the size threshold) not have to name the species. Do not include Eura rife, Canadian Thistle. If you counted ecies below if you want to:	sian Milfoil, reed canarygrass, purple	1
Decided	rision of Habitats (see p. 76): I from the diagrams below whether interspersion between sees and unvegetated areas (can include open water or not		Figure 🗌
Note: If you hav	High = 3 points re 4 or more classes or 3 vegetation classes and open w	[riparian braided channels] vater, the rating is always "high". Use map of Cowardin classes.	2
Check to you put Larg Stan Und Stab At let Inva	Habitat Features (see p. 77): The habitat features that are present in the wetland. into the next column. The downed, woody debris within the wetland (> 4 in ding snags (diameter at the bottom > 4 inches) in the ercut banks are present for at least 6.6 ft. (2m) and and the steep banks of fine material that might be used be solven beaver activities turned grey/brown) The act 1/4 acre of thin-stemmed persistent vegetation are permanently or seasonally inundated (structures sive plants cover less than 25% of the wetland area for the 20% stated in early printings of the manufactures.	The number of checks is the number of points n. diameter and 6 ft. long) he wetland for overhanging vegetation extends at least 3.3 th the unit, for at least 33 ft. (10m) beaver or muskrat for denning ty are present (cut shrubs or trees that have or woody branches are present in areas that for egg-laying by amphibians) in each stratum of plants	
	TAL Score – potential for providing habitat	Add the points in the column above	8

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points	0

Comments:

•	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	8 <u>12</u>
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
	 There is at least 1 wetland within 1/2 mile points = 2 There are no wetlands within 1/2 mile points = 0 	3
	within 1/2 mile points = 3	
	disturbed	
	wetlands within 1/2 mile	
	 There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe 	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4) H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A). Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 4 points If wetland has 2 priority habitats = 4 points	0
	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%; 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).	
	and wildlife (full descriptions 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-	
	NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	

Wetland Rating Form – Western Washington, Version 2 (7/06), updated with new WDFW definitions Oct. 2008

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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 With a saminty greater than 0.3 ppt. \square YES = Go to SC 1.1 \square 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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or	I/II
	contiguous freshwater wetlands.	Ш
SC2	Natural Heritage Wetlands (see p. 87)	
- C	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? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	☐ 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 a site with state threatened	
	or endangered plant species?	Cat I
	☐ YES = Category 1 ☐ NO not a Heritage Wetland	
g G 3	Bogs (see p. 87)	
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \square NO = Is not a bog for purpose of rating	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	C 4 T
	less than that found in old-growth.	Cat. I
	■ YES = Category I ■ NO = not a forested wetland with special characteristics	
SC5	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 surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
000	Interdunal Wetlands (see p. 93)	
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	\square YES = Go to SC 6.1 \square 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:	
	• 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 (1. Lather without a new control of the state	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	Category of wetland based on Special Characteristics	
▼	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	TAT A
1	If you answered NO for all types enter "Not Applicable" on p. 1	<u>NA</u>

Comments:

SP3.

Name of wetland (if known): North Lake

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

Date of site visit: February 14, 2013

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Rated by: C. Dou	ı <u>glas & J. Pursley</u> Trained by	y Ecology? Y	es 🛛 No 🗌		Date	of training: <u>N</u>	<u>1ay 2007</u>
SEC: <u>29</u>	TOWNSHP: 24N	RNGE: <u>5E</u>		Is S/	Γ/R in Apper	ndix D? Yes	☐ No ⊠
	Map of wet	land unit: Fi	gure Esti	mated size			
		CITABA	DV OF DATING	7			
			ARY OF RATING				
Category based	on FUNCTIONS provided	by wetland:	∐I			⊠ IV	
Ca	ategory I = Score > 70		Score for Water	r Quality Func	tions	8	
Ca	tegory II = Score 51 - 69		Score for Hy	ydrologic Funct	tions	4	
Cat	egory III = $Score 30 - 50$		Score for	r Habitat Funct	tions	10	
Cate	egory IV = Score < 30		TOTAL S	Score for Funct	tions	22	
Category based	on SPECIAL CHARACTER	SISTCS of We	tland 🗌 I	□II	\boxtimes	Does not ap	pply
	Final Cate	gory (choos	e the "highest" ca	itegory from at	oove")	IV	
	Summary of basic	e information	about the wetlan	nd unit.	<u> </u>		
	Wetland Unit has Speci Characteristics		Wetland H used for	IGM Class			
	Estuarine		Depressional				
	Natural Heritage Wetlan	ıd 🔲	Riverine				
	Bog		Lake-fringe				
	Mature Forest		Slope				
	Old Growth Forest		Flats		+		
	Coastal Lagoon		Freshwater Ti	dal	++-		
	Interdunal		G1 1 10 111				
	None of the above		Check if unit had HGM classes p				
Does the wetland 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.							
need to protect t					s round in ti	Wettund:	
	Check List for Wetland (in addition to the protection)					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.							
SP2 Has the wetland unit been documented as habitat for any State listed Threatened or							

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

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

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

Classification of Vegetated Wetlands for Western Washington

	ne hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	Are the water levels in the entire unit usually controlled by \boxtimes NO – go to 2 If yes, is the salinity of the water during periods of any	☐ YES – the wetland class is Tidal Fringe
	YES – Freshwater Tidal Fringe	
		e use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
		parine in the first and second editions of the rating system are called Salt
		stuarine wetlands were categorized separately in the earlier editions, and
		istency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I at	
2.	The entire wetland unit is flat and precipitation is only sou	rce (>90%) of water to it. Groundwater and surface water
	runoff are NOT sources of water to the unit.	ha madan dada sa Ellado
	<u> </u>	he wetland class is Flats
2	If your wetland can be classified as a "Flats" wetland,	
3.	Does the entire wetland meet both of the following criteria	? of a body of permanent open water (without any vegetation on
	the surface) where at least 20 acres (8ha) in s	
	At least 30% of the open water area is deeper than	
	_ _ · _ ·	he wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?	
	The wetland is on a slope (slope can be very gradu	
		on (unidirectional) and usually comes from seeps. It may flow
	subsurface, as sheetflow, or in a swale withou	
	The water leaves the wetland without being import	types of wetlands except occasionally in very small and
		pressions are usually <3 ft diameter and less than 1 foot deep).
		he wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?	
		ets inundated by overbank flooding from that stream or river.
	☐ The overbank flooding occurs at least once every t	
		sions that are filled with water when the river is not flooding
_		he wetland class is Riverine
6.		nich water ponds, or is saturated to the surface, at some time of
	the year. This means that any outlet, if present is higher the \square NO – go to 7 \square YES –	The wetland class is Depressional
7		•
1.	pond surface water more than a few inches. The unit seem	rious depression and no overbank flooding. The unit does not
	wetland may be ditched, but has no obvious natural outlet.	s to be maintained by high groundwater in the area. The
		The wetland class is Depressional
8.		ntains several different HGM classes. For example, seeps at the base of a
٠.	slope may grade into a riverine floodplain, or a small stream within	
		GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
		Use the following table to identify the appropriate class to use for the
		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 value than 10% of the unit, classify the wetland using the class that represents the value of t	wetland unit being rated. If the area of the class listed in column 2 is less
	, , , , , , , , , , , , , , , , , , , ,	
	HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
	Slope + Riverine	Riverine
	Slope + Depressional Slope + Lake-fringe	Depressional Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Rivering along stream within boundary Depressional + Lake-fringe	Depressional
	Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special
	freshwater wetland	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.

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance) points = 3 • Slope is 1% - 2% points = 2 • Slope is 2% - 5% points = 1 • Slope is greater than 5% points = 0	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>).	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure <u></u>
	 Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > 1/2 of area points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons 	3
	Total for S 1 Add the points in the boxes above	4
S 2	Does the wetland have the <u>opportunity</u> 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.	(see p. 67)
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier 2
♦	TOTAL - Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	8
	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	1
S 3	Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland (stems of plants should be thick enough (usually > 1/8in), or dense enough to remain erect during surface flows). • Dense, uncut, rigid vegetation covers > 90% of the area of the wetland points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0	0
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2
	Add the points in the boxes above	$\frac{1}{1} - \frac{2}{1} - \frac{1}{1}$
S 4	Does the wetland have the opportunity to reduce flooding and erosion? Is the wetland in a landscape position where the 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. Wetland has surface runoff that drains to a river or stream that has flooding problems Other	(see p. 70)
	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1	Multiplier 2
_	TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then <i>add score to table on p. 1</i>	<u>4</u>

The	se questions apply to wetlands of all HGM classes.	Points		
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)		
H 1	Does the wetland have the potential to provide habitat for many species?			
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure		
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	2		
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 Saturated only 1 type present points = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points	Figure		
	Freshwater tidal wetland = 2 points Map of hydroperiods	1		
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1		
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure <u></u>		
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2		
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	1		

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 50% circumference	Figure
	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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? ✓ NO = 0 points 	0

Comn	nentc.	
Comm	iciits.	

	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
	NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish	
	and wildlife (full descriptions in WDFW PHS report 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%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
	component is important (full descriptions in WDFW PHS report p. 158).	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	terrestrial ecosystems which mutually influence each other.	
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	
	Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	
	functional life history requirements for instream fish and wildlife resources.	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	☐ Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	☐ Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
	end, and > 6 m (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	0
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
	Nearby wetlands are addressed in question H 2.4)	
	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 1/2 mile, and the connections between them are	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
	but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 mile points = 5	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
	disturbed. points = $3 \boxtimes$	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within 1/2 mile	
	• There is at least 1 wetland within 1/2 mile	2
	• There are no wetlands within 1/2 mile	3
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
	TOTAL for H 1 from page 8	6
♦	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	<u>10</u>
~		

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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 With a saminty greater than 0.3 ppt. \square YES = Go to SC 1.1 \square 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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or	I/II
	contiguous freshwater wetlands.	Ш
SC2	Natural Heritage Wetlands (see p. 87)	
- C	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? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	☐ 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 a site with state threatened	
	or endangered plant species?	Cat I
	☐ YES = Category 1 ☐ NO not a Heritage Wetland	
g G 3	Bogs (see p. 87)	
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	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 unit 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)?	Cat. I
	\square YES = Category I \square NO = Is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)	
υ.	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	\square Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	\square YES = Category I \square NO = not a forested wetland with special characteristics	Ц
SC5	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 surface 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.)	
	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).	~
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland. The wetland is larger than 1/10 acre (4350 square ft.)	
	The wettand is larger than 1/10 acre (4550 square it.) $\square \textbf{YES} = \text{Category I} \qquad \square \textbf{NO} = \text{Category II}$	Cat. II
	_ ; _ ;	
SC6	<u>Interdunal Wetlands</u> (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	☐ YES = Category III	
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	.
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Comments:

Name of wetland (if known): Egpytch'Ncng

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

Date of site visit: February 14, 2013

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Rated by: C. Dou	glas & J. Pursley Trained by	y Ecology? Y	es 🛛 No 🗌		Date	of training: <u>N</u>	<u>1ay 2007</u>
SEC: <u>29</u>	TOWNSHP: 24N	RNGE: <u>5E</u>		Is S/T	7/R in Appe	ndix D? Yes	□ No ⊠
	Man of wet	land unit• Fi	gure Est	imated size			
	wap or wet	auna uma. 11	gure Est				
		SUMMA	RY OF RATIN	\mathbf{G}			
Category based	on FUNCTIONS provided	by wetland:	□ I	□II	⊠III	□IV	
Ca	tegory I = Score > 70		Score for Wate	er Quality Funct	ions	10	
Cat	egory II = Score 51 - 69		Score for H	lydrologic Funct	ions	20	
Cate	egory III = Score 30 – 50		Score for	or Habitat Funct	ions	11	
Cate	egory IV = Score < 30		TOTAL	Score for Funct	ions	41	
Category based of	on SPECIAL CHARACTER	AISTCS of Wet	tland 🗌 I	□II	\geq	Does not ap	ply
	Final Cate	gory (choos	e the "highest" c	ategory from ab	ove")	III	
	Summary of basic	c information	about the wetla	and unit.	_		
	Wetland Unit has Spec	ial		HGM Class			
	Characteristics			r Rating			
	Estuarine		Depressional				
	Natural Heritage Wetlan		Riverine		├ ├		
	Bog Mature Forest		Lake-fringe Slope		+		
	Old Growth Forest		Flats		 		
	Coastal Lagoon		Freshwater T		+ - - - - - - - - - - - - - 		
	Interdunal		ricsiwatei i	Idai	+ =		
	None of the above		Check if unit h				
			HOW Classes	present			
	d being rated meet any of the wetland according to the i						ou will
need to protect th					o round in ti		
	Check List for Wetland (in addition to the protection)					YES	NO
Endangere For the pu	etland unit been documented ed animal or plant species (2 rposes of this rating system, deral database.	T/E species)?					
SP2. Has the we	etland unit been documented	l as habitat for	r any State listed	Threatened or			

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

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

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

SP3.

Classification of Vegetated Wetlands for Western Washington

	f the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with nultiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.			
1.	is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Es	☐ YES – the wetland class is Tidal Fringe nual low flow below 0.5 ppt (parts per thousand)? ☐ NO – Saltwater Tidal Fringe (Estuarine) ruse the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it narine in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please		
2.	The entire wetland unit is flat and precipitation is only sour runoff are NOT sources of water to the unit. NO – go to 3 YES – The	rce (>90%) of water to it. Groundwater and surface water ne wetland class is Flats		
	If your wetland can be classified as a "Flats" wetland,			
3.	the surface) where at least 20 acres (8ha) in si At least 30% of the open water area is deeper than	of a body of permanent open water (without any vegetation on ze;		
4.	subsurface, as sheetflow, or in a swale withou The water leaves the wetland without being impous NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dep	on (unidirectional) and usually comes from seeps. It may flow t distinct banks.		
5.	The overbank flooding occurs at least once every to NOTE: The riverine unit can contain depress	ets inundated by overbank flooding from that stream or river. wo years. ions that are filled with water when the river is not flooding ne wetland class is Riverine		
6.	the year. This means that any outlet, if present is higher th	aich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. The wetland class is Depressional		
7.	pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not s to be maintained by high groundwater in the area. The The wetland class is Depressional		
8.	slope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGAREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your	SIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in vetland unit being rated. If the area of the class listed in column 2 is less		
	Slope + Depressional	Depressional		
	Slope + Lake-fringe	Lake-fringe		
	•			
	Depressional + Riverine along stream within boundary	Depressional		
	Depressional + Riverine along stream within boundary Depressional + Lake-fringe Salt Water Tidal Fringe and any other class of	Depressional Treat as ESTUARINE under wetlands with special		

[freshwater wetland] 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 Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure□
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	8 <u>—</u>
	• 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	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure 🗌
	 Wetland has persistent, ungrazed vegetation > = 95% of area	rigure <u> </u>
	• Wetland has persistent, ungrazed vegetation > = 1/10 of areapoints = 1	
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure 🗌
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	0
	• Area seasonally ponded is < 1/4 total area of wetland	v
	Total for D 1 Add the points in the boxes above	5
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
D 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 11)
	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	
	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	
	Wetland is fed by groundwater high in phosphorus or nitrogen	Multiplier
	Other YES multiplier is 2 NO multiplier is 1	2
	YES multiplier is 2	10
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	10
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D 3	D 3.1 Characteristics of surface water flows out of the wetland unit	(see p. 10)
	• 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 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	<i>_</i>
	(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 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).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outletpoints = 7 The wetland is a "headwater" wetland	
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outletpoints = 5	3
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water .points = 1 Marks of ponding less than 0.5 ft	
	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 unitpoints = 5	
	• The area of the basin is 10 to 100 times the area of the unitpoints = 3	5
	• The area of the basin is more than 100 times the area of the unit	
<u> </u>	• Entire unit is in the FLATS class	10
	Add the points in the boxes above	

D 4	Does the wetland have the opportunity 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 indicators of opportunity apply.				
	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				
	Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or	Multiplier			
	stream that has flooding problems Other	Manuphor			
	YES multiplier is 2 NO multiplier is 1	2			
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	<u>20</u>			

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat.	(only 1 score per box)
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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover)	Figure <u></u>
	that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	2
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure □
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	7

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > □ 5% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure □
	Н 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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points	0

Comments:	
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	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (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 330 ft. (100m) of the wetland unit?	
	NOTE: the connections do not have to be relatively undisturbed.	
	☐ Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). ☐ Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various species of native fish	
	and wildlife (full descriptions in WDFW PHS report 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%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak	
	component is important (full descriptions in WDFW PHS report p. 158).	
	Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	terrestrial ecosystems which mutually influence each other.	
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a	
	wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide	
	functional life history requirements for instream fish and wildlife resources.	
	■ Nearshore : Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	☐ Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
	end, and > 6 m (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 points	
	No habitats = 0 points	0
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
	Nearby wetlands are addressed in question H 2.4)	
	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 1/2 mile, and the connections between them are	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
	but connections should NOT be bisected by paved roads, fill, fields, or other development points = 5	
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	wetlands within 1/2 mile	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
	disturbed points = $3 \boxtimes$	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	within $1/2$ mile	
	• There is at least 1 wetland within 1/2 mile	2
	• There are no wetlands within 1/2 mile	3
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
	TOTAL for H 1 from page 8	7
♦	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	11
· _	,	L

	Wetland Type - Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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 \square NO	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural	0.11
	Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	G . T
		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 only species	∟∟ Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland	I/II
	☐ The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
SC2	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? (<i>This</i>	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	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 a site with state threatened or endangered plant species?	Cat I
	☐ YES = Category 1 ☐ NO not a Heritage Wetland	
C C C	Bogs (see p. 87)	
SC3	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 function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	\square YES = Is a bog for purpose of rating \square NO = go to question 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 unit 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 $(> 30\% \ coverage \ of the total shrub/herbaceous \ cover)$?	Cat. I
	$\square \textbf{YES} = \text{Category I} \qquad \square \textbf{NO} = \text{Is not a bog for purpose of rating}$	

SC4	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	C 4 T
	less than that found in old-growth.	Cat. I
	■ YES = Category I ■ NO = not a forested wetland with special characteristics	
SC5	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 surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland.	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. II
000	Interdunal Wetlands (see p. 93)	
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	\square YES = Go to SC 6.1 \square 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:	
	• 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 (1. Lather without a new content of the state	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	Category of wetland based on Special Characteristics	
▼	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	TAT A
1	If you answered NO for all types enter "Not Applicable" on p. 1	<u>NA</u>

Comments:

Name of wetland (if known): Uqwi 'Ncmg

SP3.

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

Date of site visit: February 14, 2013

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Rated by: C. Dou	<u>ıglas & J. Pursley</u> Trained b	y Ecology? Y	es ⊠ No □		Date	of training: <u>N</u>	<u>1ay 2007</u>
SEC: <u>29</u>	TOWNSHP: 24N	RNGE: <u>5E</u>		Is S/7	T/R in Apper	ndix D? Yes	□ No ⊠
	Man of we	tland unit• Fi	igure Est	timated size			
	Mup of we	tiuna unit. 11	gure Est				
		SUMMA	ARY OF RATIN	\mathbf{G}			
Category based	on FUNCTIONS provided	d by wetland:	□I		⊠ III	□IV	
Ca	ategory I = Score > 70		Score for Wat	er Quality Funct	tions	14	
Ca	tegory II = Score 51 - 69		Score for H	Iydrologic Funct	tions	16	
Cat	egory III = $Score 30 - 50$		Score f	or Habitat Funct	tions	13	
Cate	egory IV = Score < 30		TOTAL	Score for Funct	tions	43	
Category based	on SPECIAL CHARACTE	RISTCS of We	tland 🗌 I		\boxtimes	Does not ap	pply
	Final Cate	egory (choos	se the "highest" c	category from ab	ove")	III	
	Summary of basi	c information	about the wetla	and unit.			
	Wetland Unit has Spec	cial		HGM Class			
	Characteristics			or Rating			
	Estuarine		Depressional				
	Natural Heritage Wetla	nd 📙	Riverine		 		
	Bog		Lake-fringe		 		
	Mature Forest		Slope		 		
	Old Growth Forest		Flats		 		
	Coastal Lagoon		Freshwater T	idal	 		
	Interdunal						
	None of the above		Check if unit l				
Door the method	d haira ratad mast arm of	4h o ouitouio h	-la2 Ifa	VEC 40 one	C 41	h.ala	:11
	d being rated meet any of the wetland according to the						ou wiii
	Check List for Wetland					YES	NO
	(in addition to the prote						
Endanger For the pu	etland unit been documente ed animal or plant species (urposes of this rating system deral database.	(T/E species)?					\boxtimes
	etland unit been documente	d as habitat fo	r any State listed	l Threatened or			

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

Endangered animal species? For the purposes of this rating system, "documented" means the

Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?

wetland is on the appropriate state database. Note: Wetlands with State listed plant species

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

are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).

in a local management plan as having special significance.

Classification of Vegetated Wetlands for Western Washington

	he hydrologic criteria listed in each question do not apply to ltiple HGM classes. In this case, identify which hydrologic	
1.	NO − go to 2 If yes, is the salinity of the water during periods of ann YES − Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estu Water Tidal Fringe in the Hydrogeomorphic Classification. Est	☐ YES – the wetland class is Tidal Fringe nual low flow below 0.5 ppt (parts per thousand)? ☐ NO – Saltwater Tidal Fringe (Estuarine) a use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it that in the first and second editions of the rating system are called Salt stuarine wetlands were categorized separately in the earlier editions, and istency between editions, the term "Estuarine" wetland is kept. Please
2.	The entire wetland unit is flat and precipitation is only sour runoff are NOT sources of water to the unit. NO – go to 3 YES – The	rce (>90%) of water to it. Groundwater and surface water ne wetland class is Flats
	If your wetland can be classified as a "Flats" wetland,	
3.	the surface) where at least 20 acres (8ha) in si At least 30% of the open water area is deeper than	of a body of permanent open water (without any vegetation on ze;
4.	subsurface, as sheetflow, or in a swale withou The water leaves the wetland without being impous NOTE: Surface water does not pond in these shallow depressions or behind hummocks (dep	on (unidirectional) and usually comes from seeps. It may flow t distinct banks.
5.	The overbank flooding occurs at least once every to NOTE: <i>The riverine unit can contain depress</i>	ets inundated by overbank flooding from that stream or river. wo years. ions that are filled with water when the river is not flooding ne wetland class is Riverine
6.	the year. This means that any outlet, if present is higher th	tich water ponds, or is saturated to the surface, at some time of an the interior of the wetland. The wetland class is Depressional
7.	Is the entire wetland located in a very flat area with no obv pond surface water more than a few inches. The unit seems wetland may be ditched, but has no obvious natural outlet.	ious depression and no overbank flooding. The unit does not
8.	Your wetland unit seems to be difficult to classify and probably conslope may grade into a riverine floodplain, or a small stream within BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGAREAS IN THE UNIT (make a rough sketch to help you decide). rating system if you have several HGM classes present within your	ntains several different HGM classes. For example, seeps at the base of a depressional wetland has a zone of flooding along its sides. GO GIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT Use the following table to identify the appropriate class to use for the wetland. NOTE: Use this table only if the class that is recommended in vetland unit being rated. If the area of the class listed in column 2 is less
	Slope + Riverine	Riverine
	Slope + Depressional	Depressional
	Slope + Lake-fringe	Lake-fringe
	Depressional + Riverine along stream within boundary	Depressional
	Depressional + Lake-fringe Salt Water Tidal Fringe and any other class of	Depressional Treat as ESTUARINE under wetlands with special
	freshwater wetland	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 Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 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 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	_
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of areapoints = 5	Figure 🗌
	• Wetland has persistent, ungrazed vegetation > = 1/2 of areapoints = 3	
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	Figure 🗌
	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 years.	riguit <u> </u>
	• Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland	2
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	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	
	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	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	Withtiplier
	✓ YES multiplier is 2	2
♦	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	<u>14</u>
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	1
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	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)	
	• 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) points = 0	
	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).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outletpoints = 7	
	• The wetland is a "headwater" wetland points = 5	3
	 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water .points = 1	
-	• Marks of ponding less than 0.5 ft	
	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 unit	3
	• The area of the basin is note than 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	8

Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
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	
indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems.	
 Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems 	Multiplier
YES multiplier is 2 NO multiplier is 1	2
<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	<u>16</u>
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> 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 Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other Wes multiplier is 2 No multiplier is 1

Comments: ____

The	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
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 by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure <u></u>
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	2
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure _
	Freshwater tidal wetland = 2 points Map of hydroperiods	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), 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	Figure □
	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	2
	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 (> 4 in. 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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 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 points in the column above	8
	-	

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". □ 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure □
	Н 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 a 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 50 ft. 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 Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? □ YES = 2 points (go to H 2.3) □ NO = go to 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 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points	0

Comments:

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new a	
descriptions of WDFW priority habitats, and the counties in which they can be found, i	in the PHS report
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
☐ Biodiversity Areas and Corridors : Areas of habitat that are relatively important to various	species of native fish
and wildlife (full descriptions in WDFW PHS report 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 sp	
layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) >	
200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in	
may be less that 100%; decay, decadence, numbers of snags, and quantity of large down	ed 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 canop	by 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 or	f both aquatic and
terrestrial ecosystems which mutually influence each other.	
☐ Westside Prairies: Herbaceous, non-forested plant communities that can either take the form	m of a dry prairie or a
wet prairie (full descriptions in WDFW PHS report p. 161).	
☐ Instream: The combination of physical, biological, and chemical processes and conditions	that interact to provide
functional life history requirements for instream fish and wildlife resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Op	en 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 und	er 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.	
\square 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 asso	
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 heig	ht of > 51 cm (20 in) in
western Washington and are \geq 2 m (6.5 ft) in height. Priority logs are \geq 30 cm (12 in) in	diameter at the largest
end, and > 6 m (20 ft) long. If wetland has 3 or more priori	
If wetland has 2 priori	
	ority habitat = 1 point
ľ	No habitats = 0 points 1
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list.	
Nearby wetlands are addressed in question H 2.4)	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland	d that best fits (see p. 84)
• There are at least 3 other wetlands within 1/2 mile, and the connections between ther	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with son	ne boating,
but connections should NOT be bisected by paved roads, fill, fields, or other develop	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other	_
wetlands within 1/2 mile	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between	-
disturbed	
	-
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe	I
within 1/2 mile	· —
• There is at least 1 wetland within 1/2 mile	- 1
There are no wetlands within 1/2 mile	points = 0
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H	H2.1, H2.2, H2.3, H2.4
TOTA	L for H 1 from page 8
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then re	cord the result on p. 1 13
Comments	

Comments: ____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	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	
	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	Cat. 1
	332-30-151? \square YES = Category I \square NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following 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 only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Rating
	un-mowed grassland The western does at least 2 of the following features: tidal channels, democracions with one myster or	I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
SCZ	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.)	
	☐ 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 a site with state threatened	Cat I
	or endangered plant species?	
	☐ YES = Category 1	
SC3	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 function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? \square YES = go to question 3 \square NO = go to question 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 a lake or	
	pond? \square YES = go to question 3 \square NO = is not a bog for purpose of rating	
	3. Does the unit 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 of species in Table 3)?	
	\square YES = Is a bog for purpose of rating \square NO = go to question 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 unit forested (> 30% cover) with sitka spruce, subalpine fir, 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 $(> 30\% \ coverage \ of \ the \ total \ shrub/herbaceous \ cover)$?	0 . 1
		Cat. I
	Lite category i Mile is not a bog for purpose of rating	

SC4	Forested Wetlands (see p. 90)	
504	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 function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three 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. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	
	less than that found in old-growth.	Cat. I
	\square YES = Category I \square NO = not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
303	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.	
	\Box The lagoon in which the wetland is located contains surface 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.)	
	\square YES = Go to SC 5.1 \square 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).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or	Cat. I
	un-mowed grassland. The wetland is larger than 1/10 acre (4350 square ft.)	
	The wetland is larger than 1/10 acre (4550 square it.) $\square \textbf{YES} = \text{Category I} \qquad \square \textbf{NO} = \text{Category II}$	Cat. II
~ ~ .	Interdunal Wetlands (see p. 93)	
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	\square YES = Go to SC 6.1 \square 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:	
	• 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 one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	C-4 II
		Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. III
	☐ YES = Category III	
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Comments:

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 (if known): Lake Bellevue	Date of site vi	sit:
Rated by Joseph R. Pursley	_ Trained by Ecology? Yes No Date	e of training May 07
SEC: 29 TWNSHP: 24N RNGE: 5E	Is S/T/R in Appendix D? Yes No	
Map of wetland unit: F	igure Estimated size	
SUMM	MARY OF RATING	
Category based on FUNCTIONS I I II III_X IV	provided by wetland	
Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30	Score for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions TOTAL score for Functions	2 16 12 30
Category based on SPECIAL CHA I II Does not Apply Final Category (choose		III

Summary of basic information about the wetland unit

Wetland Unit has Special	Wetland HGM Class
Characteristics	used for Rating
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.		\times
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. 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 local management plan as having special significance.		X

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. This simplifies the questions needed to answer how well the wetland 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.

пу	difficultier a in questions 1-7 appry, and go to Question 6.
	The the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).
(The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit. NO – go to 3 YES – The wetland class is Flats
	If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands.
	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 permanent 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. D	Does the entire wetland unit meet all of the following criteria? The wetland is on a slope (slope can be very gradual), The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks. The water leaves the wetland without being impounded? NOTE: Surface water does not pond in these type of wetlands except occasionally in
(very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 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.

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

- **6**. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*
 - NO go to 7 **YES** The wetland class is **Depressional**
- 7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. 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	Treat as ESTUARINE under
wetland	wetlands with special
	characteristics

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

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)	
D	D 1. Does the wetland unit 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) Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 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 ditch [If ditch is not permanently flowing treat unit as "intermittently flowing")	Figure	
	Provide photo or drawing		
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES NO points = 4 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 points = 5 Wetland has persistent, ungrazed, vegetation $>$ = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation $>$ = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0	Figure	
D	Map of Cowardin vegetation classes 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 $> \frac{1}{2}$ total area of wetland Area seasonally ponded is $> \frac{1}{4}$ total area of wetland Area seasonally ponded is $< \frac{1}{4}$ total area of wetland Area seasonally ponded is $< \frac{1}{4}$ total area of wetland points = 2 points = 0 Map of Hydroperiods	0	
D	Total for D 1 Add the points in the boxes above	1	
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 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 — Wetland is fed by groundwater high in phosphorus or nitrogen — Other YES multiplier is 2 NO multiplier is 1		
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2	2	
	Add score to table on p. 1		

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	Points (only 1 score per box)
	D 3. Does the wetland unit 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) 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 outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	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). Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap	
D	water points = 1 Marks of ponding less than 0.5 ft points = 0 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.	3
	The area of the basin is less than 10 times the area of unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	5
D	Total for D 3 Add the points in the boxes above	8
D	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 indicators of opportunity apply. X Wetland is in a headwater of a river or stream that has flooding problems X Wetland drains to a river or stream that has flooding problems Head of the following indicators of opportunity apply. Yetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems	
	— Other	2
	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	16

These questions apply to wetlands of all HGH HABITAT FUNCTIONS - Indicators that unit function		nabitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential to pr	2 2		
H 1.1 Vegetation structure (see p. 72)			Figure
Check the types of vegetation classes present (as defined	l by Cowardin)- Size thresh	old for each	
class is ¼ acre or more than 10% of the area if unit i	s smaller than 2.5 acres.		
X_Aquatic bed			
Emergent plants			
Scrub/shrub (areas where shrubs have >30%			
Forested (areas where trees have >30% cover	.)		
If the unit has a forested class check if:	1 1 1 1	1	
The forested class has 3 out of 5 strata (cano			
moss/ground-cover) that each cover 20%			
Add the number of vegetation structures that qualify. If	4 structures or more	points = 4	
	3 structures	points = 4 points = 2	
Map of Cowardin vegetation classes	2 structures	points = 2 points = 1	_
	1 structure	points = 1 points = 0	0
H 1.2. Hydroperiods (see p. 73)	1 5000000	points o	Figure
Check the types of water regimes (hydroperiods) pro	esent within the wetland. Th	he water	3
regime has to cover more than 10% of the wetland or			
descriptions of hydroperiods)	` '		
X Permanently flooded or inundated	4 or more types present	points = 3	
Seasonally flooded or inundated	3 types present	points $= 2$	
Occasionally flooded or inundated	2 types present	point = 1	
Saturated only	1 type present	points = 0	
Permanently flowing stream or river in, or adj			
X Seasonally flowing stream in, or adjacent to, the	ne wetland		
Lake-fringe wetland = 2 points			2
Freshwater tidal wetland = 2 points	Map of hydro	periods	_
H 1.3. Richness of Plant Species (see p. 75)	2		
Count the number of plant species in the wetland the		erent patches	
of the same species can be combined to meet the size	e threshold)		
You do not have to name the species.			
Do not include Eurasian Milfoil, reed canarygro			
If you counted:		points = 2	
List species below if you want to:		points = 1	
	< 5 species	points = 0	
			1
			'

Total for page ____3

H 1.4. <u>Interspersion of habitats (see p. 76)</u> 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.	Figure
None = 0 points $ Low = 1$ point $ Low = 2$ points	
High = 3 points [riparian braided channels]	
NOTE: If you have four or more classes or three vegetation classes and open water	1
the rating is always "high". Use map of Cowardin vegetation classes	
H 1.5. <u>Special Habitat Features:</u> (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) in, or contiguous with the unit, 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 (cut shrubs or trees that have not yet turned grey/brown)	
At least ½ 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) X 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

Comments

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring	riguro
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 structures are within the undisturbed part of buffer. (relatively	
undisturbed also means no-grazing, no landscaping, no daily human use) 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 for >	
50% circumference. Points = 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. 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 (e.g. tilled 	
fields, paving, basalt bedrock extend to edge of wetland $\mathbf{Points} = 0$.	
Buffer does not meet any of the criteria above. Points = 1	1
Aerial photo showing buffers	'
H 2.2 Corridors and Connections (see p. 81)	
$\overline{2.2.1}$ 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?	0
YES = 1 point NO = 0 points	

Total for page 1

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 unit? NOTE: the	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various	
species of native fish and wildlife (full descriptions in WDFW PHS report 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).	
X_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).	
X 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 > 30 cm (12 in) in diameter at the largest end, and > 6 m (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 wetlands are by definition a priority habitat but are not included in this	3
list. Nearby wetlands are addressed in question H 2.4)	

relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other	
development. points = 5	
The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within $\frac{1}{2}$ mile points = 5	
There are at least 3 other wetlands within ½ mile, BUT the connections between them are	
disturbed points = 3	
The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe	
wetland within $\frac{1}{2}$ mile points = 3	
There is at least 1 wetland within $\frac{1}{2}$ mile. points = 2	
There are no wetlands within $\frac{1}{2}$ mile.	
	3
H 2. TOTAL Score - opportunity for providing habitat	i i
Add the scores from H2.1,H2.2, H2.3, H2.4	7
	[
TOTAL for H I from page 14	5
TOTAL for H 1 from page 14	Ŭ
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	12

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and 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 X	
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 332-30-151? YES = Category I X NO go to SC 1.2	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 — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of 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 un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	Cat. I Cat. II Dual rating I/II

SC 2.0 Natural Heritage Wetlands (see p. 87) Cat. I 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 unit 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) S/T/R information from Appendix D X or accessed from WNHP/DNR web site ____ YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO X 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? YES = Category INO X not a Heritage Wetland SC 3.0 Bogs (see p. 87) Does the wetland unit (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 unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches 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 X No - go to Q. 2 2. Does the unit 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 a lake or pond? Yes - go to Q. 3 X No - Is not a bog for purpose of rating 3. Does the unit 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 of species in Table 3)? Yes – Is a bog for purpose of rating X 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. 1. Is the unit 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)? No_X Is not a bog for purpose of rating 2. YES = Category ICat. I

	I			
SC 4.0 Forested Wetlands (see p. 90) Does the wetland unit 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.				
— Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); 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.				
YES = Category I NO \times not a forested wetland with special characteristics	Cat. I			
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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) YES = Go to SC 5.1 NO_X not a wetland in a coastal lagoon				
 SC 5.1 Does the wetland meets 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). — 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 Western Boundary of Upland				
Ownership or WBUO)?				
YES - go to SC 6.1 NO \times 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:				
 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 one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?				
YES = Category II \times NO – go to SC 6.2	Cat. II			
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	Cat. III			
Category of wetland based on Special Characteristics				
Choose the "highest" rating if wetland falls into several categories, and record on				
p. 1.				
If you answered NO for all types enter "Not Applicable" on p.1				

Attachment F

Photos of Wetlands E2-1 and E2-4

Photo 1: Wetland E2-1, view south into southern extent (estimated) of wetland, December 15, 2014.



Photo 2: Wetland E2-1, view of northern extent of wetland and sample plots 1 and 2 locations, December 15, 2014.





Photo 3: Wetland E2-4, view west from near outlet. December 15, 2014.

Photo 4: Wetland E2-4, view north into wetland from southern boundary. December 15, 2014

Photo 5: Wetland E2-4, large snag in center of wetland. December 15, 2014



Photo 6: Wetland E2-6, sign of past use of wetland E2-4 by beaver, near outlet at eastern end of wetland. December 15, 2014

