

Chapter 5

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; wet-pool 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 be 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.

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|-----------------|---------|
| • Category I: | • 6:1 |
| • Category II: | • 3:1 |
| • Category III: | • 2:1 |
| • Category IV: | • 1.5:1 |

Consequently, the 2.12 acres 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 preliminary 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.

Chapter 6

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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 Pool 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 Tributary | | | | | | | |
| 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)

Project: _____

Date: _____

Site ID: _____

Biologist: _____

| Function | Likely or Not Likely to Provide (State Your Rationale), Yes/No, or Number |
|--|--|
| F. General Habitat Suitability | |
| 1. Area is not fragmented by development. | |
| 2. Upland surrounding area is undeveloped. | |
| 3. 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 | |
| 1. Cover (i.e., woody debris, rocks, and leaf litter) present. | |
| 2. Woody debris present within area. | |
| 3. 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 | |
| 1. Permanent water present within the area. | |
| 2. Presence of emergent vegetation in areas of permanent water. | |
| 3. Areas containing dense shrubs and/or trees are present. | |
| 4. 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 | |
| 1. 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. | |
| 10. 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 | |
| 1. 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 | |
| 1. 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

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF West SP1W
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam & Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF West is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the north and south. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|---------------------|------------------|--|--------------------------|--|---------------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|----------------|-----------|-----------|--------------------------------|--|--|
| 1. <u>Salix scouleriana</u> | <u>60</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>60</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Spiraea douglasii</u> | <u>40</u> | <u>yes</u> | <u>FACW</u> | Prevalence Index worksheet: <table border="0"> <tr> <td colspan="2"><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td>_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td>_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = _____</td> </tr> </table> | <u>Total % Cover of:</u> | | <u>Multiply by:</u> | OBL species | _____ | x1 = _____ | FACW species | _____ | x2 = _____ | FAC species | _____ | x3 = _____ | FACU species | _____ | x4 = _____ | UPL species | _____ | x5 = _____ | Column Totals: | _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | | |
| <u>Total % Cover of:</u> | | <u>Multiply by:</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>40</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Agrostis capillaris</u> | <u>10</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Athyrium filix-femina</u> | <u>15</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Phalaris arundinacea</u> | <u>20</u> | <u>yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>0</u> , 20% = <u>3</u> | <u>45</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>55</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Remarks: 100% dominant wetland vegetation per the Dominance Test

SOILSampling Point: BNSF West SP1W**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|-------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 3 | 10YR 4/1 | 100 | None | None | None | None | Silt loam | |
| 3 to 4 | 10YR 4/1 | 60 | 10YR 5/6 | 40 | D | M | Silt loam | w/gravel & cobble |
| 4 to 18+ | 10YR 4/1 | 60 | 10YR 5/6 | 40 | D | M | Silt loam | w/gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 chroma with redox

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9)
- (MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 2 inchesSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF West SP2U
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam & Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | |
|--|---|--|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Wetland BNSF West is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the north and south. | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>37</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------|-------------------|------------------|---|--|-------------------|--------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|----------------|-----------|-----------|--------------------------------|--|--|
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: <table border="0"> <tr> <td></td> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td>_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td>_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = _____</td> </tr> </table> | | Total % Cover of: | Multiply by: | OBL species | _____ | x1 = _____ | FACW species | _____ | x2 = _____ | FAC species | _____ | x3 = _____ | FACU species | _____ | x4 = _____ | UPL species | _____ | x5 = _____ | Column Totals: | _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | | |
| | Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Cytisus scoparius</u> | <u>40</u> | <u>yes</u> | <u>UPL</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Rubus armeniacus</u> | <u>20</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>70</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Agrostis capillaris</u> | <u>60</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Galium trifidum</u> | <u>1</u> | <u>no</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Phalaris arundinacea</u> | <u>10</u> | <u>no</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <u>Tanacetum vulgare</u> | <u>5</u> | <u>no</u> | <u>UPL</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>76</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>24</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Remarks: 37% dominant wetland vegetation per the Dominance Test. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SOILSampling Point: BNSF West SP2U**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|----------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 4 | 10YR 5/4 | 70 | 10YR 4/2 | 30 | D | M | Sandy loam | w/gravel |
| 4 to 10 | 10YR 4/3 | 75 | 10YR 4/2 | 25 | D | M | Sandy loam | w/gravel |
| 10 to 18+ | 10YR 4/3 | 25 | 10YR 4/2 | 25 | D | M | Sandy loam | w/gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: 3 and 4 chroma with redox features

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?**Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF West SP3W
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam & Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF West is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the north and south. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|---|------------------|-------------------|------------------|---|---|
| 1. <u>Salix scouleriana</u> | <u>95</u> | <u>yes</u> | <u>FAC</u> | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>5</u> (B) | |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) | |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>95</u> | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | |
| 1. <u>Spiraea douglasii</u> | <u>40</u> | <u>yes</u> | <u>FACW</u> | Prevalence Index worksheet: | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | Total % Cover of: _____ Multiply by: _____ | |
| 4. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ | |
| 5. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>40</u> | = Total Cover | | FAC species _____ x3 = _____ | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | |
| 1. <u>Equisetum arvense</u> | <u>10</u> | <u>yes</u> | <u>FAC</u> | FACU species _____ x4 = _____ | |
| 2. <u>Phalaris arundinacea</u> | <u>30</u> | <u>yes</u> | <u>FACW</u> | UPL species _____ x5 = _____ | |
| 3. <u>Tolmiea menziesii</u> | <u>10</u> | <u>yes</u> | <u>FAC</u> | Column Totals: _____ (A) _____ (B) | |
| 4. _____ | _____ | _____ | _____ | Prevalence Index = B/A = _____ | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>2</u> | <u>50</u> | = Total Cover | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | |
| 1. _____ | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | |
| % Bare Ground in Herb Stratum <u>50</u> | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |

Remarks: 100% dominant wetland vegetation per the Dominance Test

SOILSampling Point: BNSF West SP3W**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|-------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 3 | 10YR 4/1 | 100 | None | None | None | None | Silt loam | |
| 3 to 6 | 10YR 4/1 | 100 | None | None | None | None | Silt loam | w/gravel |
| 6 to 18+ | 10YR 4/1 | 100 | None | None | None | None | Silt loam | w/gravel & cobble |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 chroma

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 2 inchesSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF West SP4U
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam & Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | |
|--|---|---|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Wetland BNSF West is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the north and south. | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|-------------------|------------------|---|--|-------------------|--------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|----------------|-----------|-----------|--------------------------------|--|--|
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: <table border="0"> <tr> <td></td> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td>_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td>_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = _____</td> </tr> </table> | | Total % Cover of: | Multiply by: | OBL species | _____ | x1 = _____ | FACW species | _____ | x2 = _____ | FAC species | _____ | x3 = _____ | FACU species | _____ | x4 = _____ | UPL species | _____ | x5 = _____ | Column Totals: | _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | | |
| | Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Ilex aquifolium</u> | <u>20</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Oemleria cerasiformis</u> | <u>15</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Rubus armeniacus</u> | <u>10</u> | <u>no</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>0</u> , 20% = <u>2</u> | <u>45</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Agrostis capillaris</u> | <u>10</u> | <u>no</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Cirsium arvense</u> | <u>30</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Equisetum arvense</u> | <u>35</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <u>Festuca rubra</u> | <u>15</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>0</u> , 20% = <u>3</u> | <u>90</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>10</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Remarks: 40% dominant wetland vegetation per the Dominance Test.

SOILSampling Point: BNSF West SP4U**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|-------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 18+ | 10YR 4/2 | 100 | None | None | None | None | Sandy loam | w/gravel & angular rock |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: 2 chroma with no redox features

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF Northwest SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Remarks: Wetland BNSF Northwest is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the south. | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|--|------------------|-------------------|------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>0</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ |
| 3. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ x4 = _____ |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | UPL species _____ x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) _____ (B) |
| 1. _____ | _____ | _____ | _____ | Prevalence Index = B/A = _____ |
| 2. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 3. _____ | _____ | _____ | _____ | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | |
| Remarks: 0% dominant wetland vegetation per the Dominance Test, upland plot in railroad tracks fill prism with 100% bare ground. | | | | |

SOILSampling Point: BNSF Northwest SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|-------------------|------------|----------------|-------------|-------------------|------------------|-------------------|---------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| <u>0 to 18+</u> | <u>Fill prism</u> | <u>100</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>Fill prism</u> | <u>angular rock</u> |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: Angular rock fill prismDepth (inches): Surface**Hydric Soils Present?**Yes ☐ No ☒Remarks: Angular rock railroad tracks fill prism**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?**Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF Northwest SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF Northwest is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the south. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|---------------------|------------------|---|--------------------------|--|---------------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|----------------|-----------|-----------|--------------------------------|--|--|
| 1. <u>Salix lasiandra</u> | <u>90</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>90</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Rubus armeniacus</u> | <u>10</u> | <u>yes</u> | <u>FACU</u> | Prevalence Index worksheet: <table border="0"> <tr> <td colspan="2"><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td>_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td>_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = _____</td> </tr> </table> | <u>Total % Cover of:</u> | | <u>Multiply by:</u> | OBL species | _____ | x1 = _____ | FACW species | _____ | x2 = _____ | FAC species | _____ | x3 = _____ | FACU species | _____ | x4 = _____ | UPL species | _____ | x5 = _____ | Column Totals: | _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | | |
| <u>Total % Cover of:</u> | | <u>Multiply by:</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Sambucus racemosa</u> | <u>10</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>2</u> , 20% = <u>0</u> | <u>20</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Athyrium filix-femina</u> | <u>60</u> | <u>yes</u> | <u>FAC</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Epilobium watsonii</u> | <u>5</u> | <u>yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. <u>Equisetum arvense</u> | <u>5</u> | <u>no</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. <u>Juncus effusus</u> | <u>25</u> | <u>yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. <u>Lemna minor</u> | <u>10</u> | <u>no</u> | <u>OBL</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. <u>Ludwigia palustris</u> | <u>10</u> | <u>no</u> | <u>OBL</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>2</u> | <u>100</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Hedera hibernica</u> | <u>15</u> | <u>yes</u> | <u>UPL</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>15</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>100</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Remarks: 100% dominant wetland vegetation per the Dominance Test

SOILSampling Point: BNSF Northwest SPW**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|-----------------|-----------|-----------------|-----------|-------------------|------------------|-------------------|------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| <u>0 to 3</u> | <u>10YR 3/2</u> | <u>80</u> | <u>10YR 5/1</u> | <u>20</u> | <u>D</u> | <u>M</u> | <u>Silt loam</u> | |
| <u>3 to 18+</u> | <u>10YR 4/1</u> | <u>90</u> | <u>10YR 4/4</u> | <u>10</u> | <u>D</u> | <u>M</u> | <u>Sandy loam</u> | <u>w/gravel & cobble</u> |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 and 2 chroma with redox features

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 8 inchesSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

| | | |
|---|---|---------------------------------------|
| Project/Site: <u>Operations & Maintenance Satellite Facility</u> | City/County: <u>Bellevue/King County</u> | Sampling Date: <u>12/15/2014</u> |
| Applicant/Owner: <u>Sound Transit</u> | State: <u>WA</u> | Sampling Point: <u>SP 1 wetl E2-1</u> |
| Investigator(s): <u>Torrey Luiting</u> | Section, Township, Range: <u>Section 28, 25North, 5East</u> | |
| Landform (hillslope, terrace, etc.): <u>developed flat</u> | Local relief (concave, convex, none): <u>concave</u> | Slope (%): _____ |
| Subregion (LRI) <u>Northwest Forests and Coast (LRR A)</u> | Lat: <u>47.629275</u> | Long: <u>-122.183324</u> Datum: _____ |
| Soil Map Unit Name: <u>KpD – Kitsap silt loam, 15 to 30 % slopes</u> | NWI Classification: <u>none</u> | |
| Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks) | | |
| Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" Present? Yes <u>x</u> No _____ | | |
| Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) | | |

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

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u>x</u> No _____ | Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ |
| Hydric Soil Present? Yes <u>x</u> No _____ | |
| Wetland Hydrology Present? Yes <u>x</u> No _____ | |
| Remarks: Sampled northern arm of wetland E2-1; wetland not delineated due to property access restrictions | |

VEGETATION

| Tree Stratum (Use scientific names.) | | Absolute % Cover | Dominant Species? | Indicator Status? |
|--------------------------------------|-----------------------------|------------------|-------------------------|-------------------|
| 1. | <u>Populus balsamifera</u> | 30 | x | FAC |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 15 = 50% of total cover | | Total Cover: | 30 | |
| 6 = 20% of total cover (trees) | | | | |
| Shrub Stratum | | | | |
| 1. | <u>Spiraea douglasii</u> | 10 | x | FACW |
| 2. | <u>Rubus armeniacus</u> | 5 | x | FACU |
| 3. | <u>Cytisus scoparius</u> | 2 | | NL=UPL |
| 4. | | | | |
| 5. | | | | |
| 8.5 = 50% of total cover | | Total Cover: | 17 | |
| 3.4 = 20% of total cover (shrubs) | | | | |
| Herb Stratum | | | | |
| 1. | <u>Juncus effusus</u> | 40 | x | FACW |
| 2. | <u>Phalaris arundinacea</u> | 30 | x | FACW |
| 3. | <u>Holcus lanatus</u> | 20 | x | FAC |
| 4. | <u>Rumex crispus</u> | 5 | | FAC |
| 5. | <u>Galium spp.</u> | trace | | |
| 6. | <u>Daucus carota</u> | trace | | FACU |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 47.5 = 50% of total cover | | Total Cover: | 95 | |
| 19 = 20% of total cover (herbs) | | | | |
| Woody Vine Stratum | | | | |
| 1. | | | | |
| | | Total Cover: | 0 | |
| % Bare Ground in Herb Stratum | | 5 | % Cover of Biotic Crust | 0 |

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index Worksheet:

| Total % Cover of: | Multiply by: |
|---|--------------|
| OBL species <u>x1</u> = | <u>0</u> |
| FACW species <u>x2</u> = | <u>0</u> |
| FAC species <u>x3</u> = | <u>0</u> |
| FACU species <u>x4</u> = | <u>0</u> |
| UPL species <u>x5</u> = | <u>0</u> |
| Column Totals: <u>0</u> (A) | <u>0</u> (B) |
| Prevalence Index = B/A = <u>#DIV/0!</u> | |

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation X

2 - Dominance Test is >50% #####

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptation¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks: Rubus armeniacus recently renamed by the Flora of North America to be Rubus bifrons, but that name is not reflected in the Lichvar 2012 National Wetland Plant list for delineations

SOIL

Sampling Point: SP-1

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|---|--|---|--|
| Primary Indicators (any one indicator is sufficient) | | Secondary Indicators (2 or more required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, | |
| <input checked="" type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A and 4B) | <input type="checkbox"/> 4A and 4B) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/> 7 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/> surface (includes capillary fringe) | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

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

| | | |
|---|---|---------------------------------------|
| Project/Site: <u>Operations & Maintenance Satellite Facility</u> | City/County: <u>Bellevue/King County</u> | Sampling Date: <u>12/15/2014</u> |
| Applicant/Owner: <u>Sound Transit</u> | State: <u>WA</u> | Sampling Point: <u>SP 2 wetl E2-1</u> |
| Investigator(s): <u>Torrey Luiting</u> | Section, Township, Range: <u>Section 28, 25North, 5East</u> | |
| Landform (hillslope, terrace, etc.): <u>developed flat</u> | Local relief (concave, convex, none): <u>concave</u> | Slope (%): _____ |
| Subregion (LRI) <u>Northwest Forests and Coast (LRR A)</u> | Lat: <u>47.629275</u> | Long: <u>-122.183324</u> Datum: _____ |
| Soil Map Unit Name: <u>KpD – Kitsap silt loam, 15 to 30 % slopes</u> | NWI Classification: <u>none</u> | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes _____ | No _____ (If no, explain in Remarks) |
| Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? | Are "Normal Circumstances" Present? | Yes <u>x</u> No _____ |
| Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? | (If needed, explain any answers in Remarks.) | |

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

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u>x</u> No _____ | Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ |
| Hydric Soil Present? Yes <u>x</u> No _____ | |
| Wetland Hydrology Present? Yes <u>x</u> No _____ | |
| Remarks: Sampled northern arm of wetland E2-1, north of sample plot 1; wetland not delineated due to property access restrictions | |

VEGETATION

| Tree Stratum | | Absolute % Cover | Dominant Species? | Indicator Status? | Dominance Test worksheet: | |
|---|--|--|---------------------------------|-------------------|---|--|
| (Use scientific names.) | | | | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) | |
| 1. _____ | | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>4</u> (B) | |
| 2. _____ | | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B) | |
| 3. _____ | | _____ | _____ | _____ | | |
| 4. _____ | | _____ | _____ | _____ | | |
| <u>0</u> = 50% of total cover | | Total Cover: <u>0</u> | | | | |
| <u>0</u> = 20% of total cover (trees) | | | | | | |
| Shrub Stratum | | | | | Prevalence Index Worksheet: | |
| 1. <u>Crataegus douglasii</u> | | <u>15</u> | <u>x</u> | <u>FAC</u> | Total % Cover of: _____ Multiply by: _____ | |
| 2. <u>Rubus armeniacus</u> | | <u>15</u> | <u>x</u> | <u>FACU</u> | OBL species _____ x1 = <u>0</u> | |
| 3. <u>Cytisus scoparius</u> | | <u>5</u> | _____ | <u>NL=UPL</u> | FACW species _____ x2 = <u>0</u> | |
| 4. _____ | | _____ | _____ | _____ | FAC species _____ x3 = <u>0</u> | |
| 5. _____ | | _____ | _____ | _____ | FACU species _____ x4 = <u>0</u> | |
| <u>17.5</u> = 50% of total cover | | Total Cover: <u>35</u> | UPL species _____ x5 = <u>0</u> | | | |
| <u>7</u> = 20% of total cover (shrubs) | | Column Totals: <u>0</u> (A) <u>0</u> (B) | | | | |
| Herb Stratum | | | | | Prevalence Index = B/A = <u>#DIV/0!</u> | |
| 1. <u>Juncus effusus</u> | | <u>30</u> | <u>x</u> | <u>FACW</u> | Hydrophytic Vegetation Indicators: | |
| 2. <u>Phalaris arundinacea</u> | | <u>20</u> | <u>x</u> | <u>FACW</u> | 1 - Rapid Test for Hydrophytic Vegetation | |
| 3. <u>Galium spp.</u> | | <u>trace</u> | _____ | _____ | <u>X</u> 2 - Dominance Test is >50% | |
| 4. _____ | | _____ | _____ | _____ | <u>#####</u> 3 - Prevalence Index is ≤3.0 ¹ | |
| 5. _____ | | _____ | _____ | _____ | 4 - Morphological Adaptation ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 6. _____ | | _____ | _____ | _____ | 5 - Wetland Non-Vascular Plants ¹ | |
| 7. _____ | | _____ | _____ | _____ | Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 8. _____ | | _____ | _____ | _____ | | |
| 9. _____ | | _____ | _____ | _____ | | |
| 10. _____ | | _____ | _____ | _____ | | |
| 11. _____ | | _____ | _____ | _____ | | |
| <u>25</u> = 50% of total cover | | Total Cover: <u>50</u> | | | | |
| <u>10</u> = 20% of total cover (herbs) | | | | | | |
| Woody Vine Stratum | | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No _____ | |
| 1. _____ | | _____ | _____ | _____ | | |
| Total Cover: <u>0</u> | | | | | | |
| % Bare Ground in Herb Stratum <u>35</u> | | % Cover of Biotic Crust <u>15</u> | | | | |

Remarks: *Rubus armeniacus* recently renamed by the Flora of North America to be *Rubus bifrons*, but that name is not reflected in the Lichvar 2012 National Wetland Plant list for delineations: biotic crust is scattered patches of moss amidst the bare ground

SOIL

Sampling Point: SP-2

[illegible]

HYDROLOGY

| Wetland Indicators: Hydrology | | | |
|---|--|---|--|
| Primary Indicators (any one indicator is sufficient) | | Secondary Indicators (2 or more required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, | |
| <input checked="" type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A and 4B) | 4A and 4B) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text"/> 8 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe) | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | |
| Remarks: | | | |

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

Project/Site: Operations & Maintenance Satellite Facility City/County: Bellevue/King County Sampling Date: 12/15/2014
 Applicant/Owner: Sound Transit State: WA Sampling Point: SP 3 upland
 Investigator(s): Torrey Luiting Section, Township, Range: Section 28, 25North, 5East
 Landform (hillslope, terrace, etc.): developed flat Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRI Northwest Forests and Coast (LRR A)) Lat: 47.629275 Long: -122.183324 Datum:
 Soil Map Unit Name: SK – Seattle Muck NWI Classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" Present? Yes x No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>x</u> |
| Hydric Soil Present? Yes <u> </u> No <u>x</u> | |
| Wetland Hydrology Present? Yes <u> </u> No <u>x</u> | |
| Remarks: Sampled eastern likely upland edge of wetland E2-1; wetland not delineated due to property access restrictions | |

VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status? | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B) |
|---|-------------------|-------------------|-------------------|---|
| 1. <u>Populus balsamifera</u> | <u>50</u> | <u>x</u> | <u>FAC</u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Prevalence Index Worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x1 = <u>0</u> FACW species <u> </u> x2 = <u>0</u> FAC species <u> </u> x3 = <u>0</u> FACU species <u> </u> x4 = <u>0</u> UPL species <u> </u> x5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>#DIV/0!</u> |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>#####</u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptation ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) |
| <u>25 = 50% of total cover</u> Total Cover: <u>50</u> <u>10 = 20% of total cover (trees)</u> | | | | |
| Shrub Stratum | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Rubus armeniacus</u> | <u>20</u> | <u>x</u> | <u>FACU</u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Remarks: Rubus armeniacus recently renamed by the Flora of North America to be Rubus bifrons, but that name is not reflected in the Lichvar 2012 National Wetland Plant list for delineations |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>10 = 50% of total cover</u> Total Cover: <u>20</u> <u>4 = 20% of total cover (shrubs)</u> | | | | |
| Herb Stratum | | | | |
| 1. <u>Juncus effusus</u> | <u>10</u> | <u> </u> | <u>FACW</u> | |
| 2. <u>Phalaris arundinacea</u> | <u>35</u> | <u>x</u> | <u>FACW</u> | |
| 3. <u>Agrostis stolonifera</u> | <u>35</u> | <u>x</u> | <u>FAC</u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 11. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>40 = 50% of total cover</u> Total Cover: <u>80</u> <u>16 = 20% of total cover (herbs)</u> | | | | |
| Woody Vine Stratum | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| Total Cover: <u>0</u> | | | | |
| % Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>0</u> | | | | |

SOIL

Sampling Point: SP-3

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | | |
|---|--|---|---|--|
| Primary Indicators (any one indicator is sufficient) | | | Secondary Indicators (2 or more required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| | | | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) |
| | | | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| | | | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| | | | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe) | | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | |
| Remarks: No saturation or free water within upper 14 inches of profile in middle of December; saturation was present in other sampled lower lying areas (i.e. SP-1 and SP-2) | | | | |

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: May 15, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF Northeast SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland BNSF Northeast is located in narrow area between railroad tracks with development located outside the railroad tracks. Wetland is a narrow depression with culverts at both ends that are connected to other wetlands in the area. Wetland includes depressional HGM class. The majority of the wetland included standing water at the time of the investigation. Wetland BNSF Northeast is connected to Wetland BNSF Northwest to the north via a culvert. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|---|------------------|-------------------|------------------|---|---|
| 1. <u>Populus trichocarpa</u> | <u>90</u> | <u>yes</u> | <u>FAC</u> | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>3</u> (B) | |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B) | |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>90</u> | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | |
| 1. <u>Rubus armeniacus</u> | <u>100</u> | <u>yes</u> | <u>FACU</u> | Prevalence Index worksheet: | |
| 2. _____ | _____ | _____ | _____ | | |
| 3. _____ | _____ | _____ | _____ | Total % Cover of: _____ Multiply by: _____ | |
| 4. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ | |
| 5. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>100</u> | = Total Cover | | FAC species _____ x3 = _____ | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | |
| 1. <u>Equisetum arvense</u> | <u>1</u> | <u>yes</u> | <u>FAC</u> | FACU species _____ x4 = _____ | |
| 2. _____ | _____ | _____ | _____ | UPL species _____ x5 = _____ | |
| 3. _____ | _____ | _____ | _____ | Column Totals: _____ (A) _____ (B) | |
| 4. _____ | _____ | _____ | _____ | Prevalence Index = B/A = _____ | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>1</u> | = Total Cover | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | |
| 1. _____ | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | |
| % Bare Ground in Herb Stratum <u>99</u> | | | | | |

Remarks: 67% dominant wetland vegetation per the Dominance Test. 100% Himalayan blackberry in shrub cover.

SOILSampling Point: BNSF Northeast SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|-----------------|-----------|-----------------|----------|-------------------|------------------|------------------|-----------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| <u>0 to 18+</u> | <u>10YR 3/3</u> | <u>98</u> | <u>10YR 5/3</u> | <u>2</u> | <u>D</u> | <u>M</u> | <u>Clay loam</u> | <u>w/gravel</u> |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: 3 chroma with 2% redox features

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: May 15, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF Northeast SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF Northeast is located in narrow area between railroad tracks with development located outside the railroad tracks. Wetland is a narrow depression with culverts at both ends that are connected to other wetlands in the area. Wetland includes depressional HGM class. The majority of the wetland included standing water at the time of the investigation. Wetland BNSF Northeast is connected to Wetland BNSF North to the north via a culvert. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | | | |
|--|------------------|-------------------|------------------|--|-------------------|--------------|-------------------|------------|--------------------|------------|-------------------|------------|--------------------|------------|-------------------|------------|--------------------------|-----------|--------------------------------|--|
| 1. <u>Alnus rubra</u> | <u>60</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | |
| 2. <u>Populus trichocarpa</u> | <u>30</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | |
| 3. <u>Salix scouleriana</u> | <u>10</u> | <u>no</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>100</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Crataegus douglasii</u> | <u>5</u> | <u>no</u> | <u>FAC</u> | Prevalence Index worksheet: <table border="0"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table> | Total % Cover of: | Multiply by: | OBL species _____ | x1 = _____ | FACW species _____ | x2 = _____ | FAC species _____ | x3 = _____ | FACU species _____ | x4 = _____ | UPL species _____ | x5 = _____ | Column Totals: _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | |
| OBL species _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | |
| FACW species _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | |
| FAC species _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | |
| FACU species _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | |
| UPL species _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | |
| Column Totals: _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Spiraea douglasii</u> | <u>40</u> | <u>yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>45</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Ludwigia palustris</u> | <u>20</u> | <u>yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>20</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | |
| 1. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>80</u> | | | | | | | | | | | | | | | | | | | | |

Remarks: 100% dominant wetland vegetation per the Dominance Test

SOILSampling Point: BNSF Northeast SPW**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|--------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 7 | 10YR 4/1 | 100 | None | None | None | None | Silt loam | w/dense root layer |
| 7 to 10 | 10YR 4/1 | 100 | None | None | None | None | Silt loam | Silt loam |
| 10 to 18+ | 10YR 4/1 | 100 | None | None | None | None | Loam | w/gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 chroma

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 1 inchSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Water table 1 inch from surface, majority of the wetland included standing water at the time of the investigation.

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

| | | |
|---|---|---------------------------------------|
| Project/Site: <u>Operations & Maintenance Satellite Facility</u> | City/County: <u>Bellevue/King County</u> | Sampling Date: <u>12/15/2014</u> |
| Applicant/Owner: <u>Sound Transit</u> | State: <u>WA</u> | Sampling Point: <u>SP 4 wetl E2-4</u> |
| Investigator(s): <u>Torrey Luiting</u> | Section, Township, Range: <u>Section 28, 25North, 5East</u> | |
| Landform (hillslope, terrace, etc.): <u>developed flat</u> | Local relief (concave, convex, none): <u>concave</u> | Slope (%): _____ |
| Subregion (LRI <u>Northwest Forests and Coast (LRR A)</u>) | Lat: <u>47.629991</u> | Long: <u>-122.182311</u> Datum: _____ |
| Soil Map Unit Name: <u>SK – Seattle Muck</u> | NWI Classification: <u>PFOc</u> | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes <u>x</u> | No _____ (If no, explain in Remarks) |
| Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? | Are "Normal Circumstances" Present? | Yes <u>x</u> No _____ |
| Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? | (If needed, explain any answers in Remarks.) | |

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

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u>x</u> No _____ | Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ |
| Hydric Soil Present? Yes <u>x</u> No _____ | |
| Wetland Hydrology Present? Yes <u>x</u> No _____ | |
| Remarks: Sampled along southern edge of wetland E2-4; southern and western edges of wetland delineated; wetland occupies depression surrounded by development | |

VEGETATION

| Tree Stratum | | Absolute % Cover | Dominant Species? | Indicator Status? | Dominance Test worksheet: | | |
|---|--|--|--|-------------------|---|-------------------------------------|--|
| (Use scientific names.) | | | | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) | | |
| 1. _____ | | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>2</u> (B) | | |
| 2. _____ | | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B) | | |
| 3. _____ | | _____ | _____ | _____ | | | |
| 4. _____ | | _____ | _____ | _____ | | | |
| <u>0</u> = 50% of total cover | | Total Cover: <u>0</u> | | | | | |
| <u>0</u> = 20% of total cover (trees) | | | | | | | |
| Shrub Stratum | | | | | Prevalence Index Worksheet: | | |
| 1. <u>Rubus armeniacus</u> | | <u>15</u> | <u>x</u> | <u>FACU</u> | Total % Cover of: _____ Multiply by: _____ | | |
| 2. _____ | | _____ | _____ | _____ | OBL species _____ x1 = <u>0</u> | | |
| 3. _____ | | _____ | _____ | _____ | FACW species <u>100</u> x2 = <u>200</u> | | |
| 4. _____ | | _____ | _____ | _____ | FAC species _____ x3 = <u>0</u> | | |
| 5. _____ | | _____ | _____ | _____ | FACU species <u>15</u> x4 = <u>60</u> | | |
| <u>7.5</u> = 50% of total cover | | Total Cover: <u>15</u> | UPL species _____ x5 = <u>0</u> | | | | |
| Herb Stratum <u>3</u> = 20% of total cover (shrubs) | | Column Totals: <u>115</u> (A) <u>260</u> (B) | | | | Prevalence Index = B/A = <u>2.3</u> | |
| 1. <u>Phalaris arundinacea</u> | | <u>85</u> | <u>x</u> | <u>FACW</u> | Hydrophytic Vegetation Indicators: | | |
| 2. <u>Epilobium ciliatum</u> | | <u>15</u> | _____ | <u>FACW</u> | 1 - Rapid Test for Hydrophytic Vegetation | | |
| 3. <u>Cirsium vulgare</u> | | <u>trace</u> | _____ | <u>FACU</u> | 2 - Dominance Test is >50% | | |
| 4. _____ | | _____ | _____ | _____ | <u>X</u> 3 - Prevalence Index is $\leq 3.0^1$ | | |
| 5. _____ | | _____ | _____ | _____ | 4 - Morphological Adaptation ¹ (Provide supporting data in Remarks or on a separate sheet) | | |
| 6. _____ | | _____ | _____ | _____ | 5 - Wetland Non-Vascular Plants ¹ | | |
| 7. _____ | | _____ | _____ | _____ | Problematic Hydrophytic Vegetation ¹ (Explain) | | |
| 8. _____ | | _____ | _____ | _____ | | | |
| 9. _____ | | _____ | _____ | _____ | | | |
| 10. _____ | | _____ | _____ | _____ | | | |
| 11. _____ | | _____ | _____ | _____ | | | |
| <u>50</u> = 50% of total cover | | Total Cover: <u>100</u> | 1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| <u>20</u> = 20% of total cover (herbs) | | | | | | | |
| Woody Vine Stratum | | | | | Hydrophytic Vegetation Present? | | |
| 1. _____ | | _____ | _____ | _____ | Yes <u>x</u> No _____ | | |
| Total Cover: <u>0</u> | | | | | | | |
| % Bare Ground in Herb Stratum <u>0</u> | | % Cover of Biotic Crust <u>0</u> | | | | | |

Remarks: *Rubus armeniacus* recently renamed by the Flora of North America to be *Rubus bifrons*, but that name is not reflected in the Lichvar 2012 National Wetland Plant list for delineations

SOIL

Sampling Point: SP-4

[illegible]

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|--|--|--|--|
| Primary Indicators (any one indicator is sufficient) | | Secondary Indicators (2 or more required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, | |
| <input checked="" type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A and 4B) | <input type="checkbox"/> 4A and 4B) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | | |

| | | | | |
|--|--|--|--|---|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u> 10 </u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u> 2 </u> (includes capillary fringe) | | | | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | |
| Remarks: | | | | |

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

Project/Site: Operations & Maintenance Satellite Facility City/County: Bellevue/King County Sampling Date: 12/15/2014
 Applicant/Own: Sound Transit State: WA Sampling Point: SP 5 upland edge
 Investigator(s): Torrey Luiting Section, Township, Range: Section 28, 25North, 5East
 Landform (hillslope, terrace, etc.): sloping edge of depression Local relief (concave, convex, none): shallow slope to wetl Slope (%): 1%
 Subregion (LRI Northwest Forests and Coast (LRR A)) Lat: 47.629991 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 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 problematic? (If needed, explain any answers in Remarks.)

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

| | |
|--|---|
| Hydrophytic Vegetation Present? Yes <u>x</u> No <u></u> | Is the Sampled Area within a Wetland? Yes <u></u> No <u>x</u> |
| Hydric Soil Present? Yes <u></u> No <u>x</u> | |
| Wetland Hydrology Present? Yes <u></u> No <u>x</u> | |
| Remarks: Sampled along slope break along southern edge of wetland E2-4 to document topographic location of wetland edge; southern and western edges of wetland delineated; wetland occupies depression surrounded by development | |

VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status? | Dominance Test worksheet: |
|---|------------------|-------------------|-------------------|--|
| 1. <u></u> | | | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) |
| 2. <u></u> | | | | Total Number of Dominant Species Across All Strata: <u>1</u> (B) |
| 3. <u></u> | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
| 4. <u></u> | | | | |
| <u>0 = 50% of total cover</u> Total Cover: <u>0</u> | | | | |
| <u>0 = 20% of total cover (trees)</u> | | | | |
| Shrub Stratum | | | | Prevalence Index Worksheet: |
| 1. <u></u> | | | | Total % Cover of: <u></u> Multiply by: <u></u> |
| 2. <u></u> | | | | OBL species <u></u> x1 = <u>0</u> |
| 3. <u></u> | | | | FACW species <u></u> x2 = <u>0</u> |
| 4. <u></u> | | | | FAC species <u></u> x3 = <u>0</u> |
| 5. <u></u> | | | | FACU species <u></u> x4 = <u>0</u> |
| <u>0 = 50% of total cover</u> Total Cover: <u>0</u> | | | | UPL species <u></u> x5 = <u>0</u> |
| <u>0 = 20% of total cover (shrubs)</u> | | | | Column Totals: <u>0</u> (A) <u>0</u> (B) |
| Herb Stratum <u>0 = 20% of total cover (shrubs)</u> | | | | Prevalence Index = B/A = <u>#DIV/0!</u> |
| 1. <u>Phalaris arundinacea</u> | <u>100</u> | <u>x</u> | <u>FACW</u> | Hydrophytic Vegetation Indicators: |
| 2. <u></u> | | | | <u>1</u> - Rapid Test for Hydrophytic Vegetation |
| 3. <u></u> | | | | <u>X</u> <u>2</u> - Dominance Test is >50% |
| 4. <u></u> | | | | <u>####</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ |
| 5. <u></u> | | | | <u>4</u> - Morphological Adaptation ¹ (Provide supporting data in Remarks or on a separate sheet) |
| 6. <u></u> | | | | <u>5</u> - Wetland Non-Vascular Plants ¹ |
| 7. <u></u> | | | | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 8. <u></u> | | | | |
| 9. <u></u> | | | | |
| 10. <u></u> | | | | |
| 11. <u></u> | | | | |
| <u>50 = 50% of total cover</u> Total Cover: <u>100</u> | | | | |
| <u>20 = 20% of total cover (herbs)</u> | | | | |
| Woody Vine Stratum | | | | |
| 1. <u></u> | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u></u> |
| Total Cover: <u>0</u> | | | | |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> | | | | |

Remarks: Rubus armeniacus recently renamed by the Flora of North America to be Rubus bifrons, but that name is not reflected in the Lichvar 2012 National Wetland Plant list for delineations; one birch tree (Betula papyrifera) rooted outside but overhanging the plot; dead Scot's broom present within plot

SOIL

Sampling Point: SP-5

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|--|---------------|-----|----------------|---|-------------------|------------------|------------|--------------------------------------|
| Depth (inches) | Matrix | | Redox Features | | | | | |
| | 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 |
| | | | | | | | | |
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| | | | | | | | | |

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

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

- ☐ Histosol (A1) ☐ Sandy Redox (S5)
- ☐ Histic Epipedon (A2) ☐ Stripped Matrix (S6)
- ☐ Black Histic (A3) ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Hydrogen Sulfide (A4) ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3)
- ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6)
- ☐ Sandy Muck Mineral (S1) ☐ Depleted Dark Surface (F7)
- ☐ Sandy gleyed Matrix (S4) ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)
- ☐ Very Shallow Dark Surface (TF12)

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

Restrictive Layer (if present):

 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No x_____

Remarks: no redox or other indicators in soil profile to indicate reduction of iron under hydric conditions

HYDROLOGY

| Wetland Indicators: Primary Indicators (any one indicator is sufficient) | | | | Secondary Indicators (2 or more required) | |
|---|--|---|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Drift Deposits (B3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A and 4B) |
| <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) | <input type="checkbox"/> Drainage Patterns (B10) | <input type="checkbox"/> Dry-Season Water Table (C2) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) | <input type="checkbox"/> Shallow Aquitard (D3) | <input type="checkbox"/> FAC-Neutral Test (D5) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) | <input type="checkbox"/> Frost-Heave Hummocks (D7) | |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe) | | | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: | | | | | |
| Remarks: No saturation or free water in soil profile | | | | | |

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

Project/Site: Operations & Maintenance Satellite Facility City/County: Bellevue/King County Sampling Date: 12/15/2014
 Applicant/Own: Sound Transit State: WA Sampling Point: SP 6 wetl E2-4
 Investigator(s): Torrey Luiting Section, Township, Range: Section 28, 25North, 5East
 Landform (hillslope, terrace, etc.): developed flat Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRI Northwest Forests and Coast (LRR A)) Lat: 47.629991 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 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 problematic? (If needed, explain any answers in Remarks.)

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

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>x</u> No <u> </u> |
| Hydric Soil Present? Yes <u>x</u> No <u> </u> | |
| Wetland Hydrology Present? Yes <u>x</u> No <u> </u> | |
| Remarks: Sampled along southern/western edge of wetland E2-4; southern and western edges of wetland delineated; wetland occupies depression surrounded by development | |

VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status? | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) |
|---|------------------|-------------------|-------------------|--|
| 1. <u>Salix lasiandra</u> | <u>10</u> | <u>x</u> | <u>FACW</u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Prevalence Index Worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x1 = <u>0</u> FACW species <u> </u> x2 = <u>0</u> FAC species <u> </u> x3 = <u>0</u> FACU species <u> </u> x4 = <u>0</u> UPL species <u> </u> x5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>#DIV/0!</u> |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>####</u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptation ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>5 = 50% of total cover</u> Total Cover: <u>10</u> | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <u>2 = 20% of total cover (trees)</u> | | | | |
| Shrub Stratum | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0 = 50% of total cover</u> Total Cover: <u>0</u> | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| <u>0 = 20% of total cover (shrubs)</u> | | | | |
| Herb Stratum | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 1. <u>Phalaris arundinacea</u> | <u>90</u> | <u>x</u> | <u>FACW</u> | |
| 2. <u>Epilobium ciliatum</u> | <u>10</u> | <u> </u> | <u>FACW</u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 11. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>50 = 50% of total cover</u> Total Cover: <u>100</u> | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| <u>20 = 20% of total cover (herbs)</u> | | | | |
| Woody Vine Stratum | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| Total Cover: <u>0</u> | | | | Hydrophytic Vegetation Present? Yes <u>x</u> No <u> </u> |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> | | | | |

Remarks: Dead Rubus armeniacus present in plot; Rubus armeniacus recently renamed by the Flora of North America to be Rubus bifrons, but that name is not reflected in the Lichvar 2012 National Wetland Plant list for delineations

SOIL

Sampling Point: SP-6

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) | | | | | | | | |
|---|---------------|-----|----------------|---|-------------------|------------------|------------|-------------------------------|
| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR 3/1 | 100 | | | | | sandy loam | |
| 6-14+ | 10YR 3/1 | 85 | 10YR 4/6 | 5 | c | m | silt loam | common medium prominent redox |
| 6-14+ | Gley2 5/5B | 10 | | | | | | mixed matrix |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) | | | Indicators for Problematic Hydric Soils ³ : | |
|---|--|---|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 2 cm Muck (A10) | | |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (TF2) | | |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Other (Explain in Remarks) | | |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) | | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. | | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) | | | |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | | | |
| <input type="checkbox"/> Sandy gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | | | |

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

Remarks: layer at least 4 inches thick, with matrix value of 3 or less and chroma of 1 or less and at least 2 percent redox that occurs within 12 inches of the soil surface

HYDROLOGY

| Wetland Hydrology Indicators: | | | |
|--|---|--|--|
| Primary Indicators (any one indicator is sufficient) | | Secondary Indicators (2 or more required) | |
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A and 4B) | |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Drainage Patterns (B10) | |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Dry-Season Water Table (C2) | |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) | |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Geomorphic Position (D2) | |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Shallow Aquitard (D3) | |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> FAC-Neutral Test (D5) | |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) | |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Frost-Heave Hummocks (D7) | |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | | | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | | |

| | | | |
|-----------------------------|--|---------------------------|--|
| Field Observations: | | | |
| Surface Water Present? | Yes _____ No <input checked="" type="checkbox"/> | Depth (inches): _____ | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
| Water table Present? | Yes <input checked="" type="checkbox"/> No _____ | Depth (inches): <u>10</u> | |
| Saturation Present? | Yes <input checked="" type="checkbox"/> No _____ | Depth (inches): <u>2</u> | |
| (includes capillary fringe) | | | |

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

Remarks:

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF East SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland BNSF East is located in narrow area between railroad tracks and development. Wetland is a narrow depression with culverts at both ends. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|--|------------------|-------------------|------------------|---|
| 1. <u><i>Alnus rubra</i></u> | <u>5</u> | <u>yes</u> | <u>FAC</u> | |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>2</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>5</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ |
| 3. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ x4 = _____ |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | UPL species _____ x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) _____ (B) |
| 1. <u><i>Agrostis capillaris</i></u> | <u>50</u> | <u>yes</u> | <u>FAC</u> | Prevalence Index = B/A = _____ |
| 2. <u><i>Festuca rubra</i></u> | <u>15</u> | <u>no</u> | <u>FAC</u> | |
| 3. <u><i>Juncus effusus</i></u> | <u>10</u> | <u>no</u> | <u>FACW</u> | |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>75</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Indicators: |
| 1. <u><i>Hedera hibernica</i></u> | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | <input checked="" type="checkbox"/> 2 - Dominance Test is >50% |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ |
| % Bare Ground in Herb Stratum <u>25</u> | | | | <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| Remarks: 100% dominant wetland vegetation per the Dominance Test, only 2 dominant species. | | | | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ |
| | | | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |

SOILSampling Point: BNSF East SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|-------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 4 | 10YR 5/4 | 100 | None | None | None | None | Clay loam | |
| 4 to 18+ | 10YR 5/4 | 100 | None | None | None | None | Clay loam | w/cobble & gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: Fill prismDepth (inches): At surface**Hydric Soils Present?**Yes ☐ No ☒

Remarks: 4 chroma

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?**Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF East SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF East is located in narrow area between railroad tracks and development. Wetland is a narrow depression with culverts at both ends. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|--|------------------|-------------------|------------------|---|--------------|
| 1. _____ | _____ | _____ | _____ | Number of Dominant Species That Are OBL, FACW, or FAC: | 3 (A) |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: | 3 (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: | 100 (A/B) |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = 0, 20% = 0 | 0 | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: | |
| 1. _____ | _____ | _____ | _____ | Total % Cover of: | Multiply by: |
| 2. _____ | _____ | _____ | _____ | OBL species _____ | x1 = _____ |
| 3. _____ | _____ | _____ | _____ | FACW species _____ | x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ | x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ | x4 = _____ |
| 50% = 0, 20% = 0 | 0 | = Total Cover | | UPL species _____ | x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) | _____ (B) |
| 1. <u>Juncus effusus</u> | 15 | no | FACW | Prevalence Index = B/A = _____ | |
| 2. <u>Lemna minor</u> | 30 | yes | OBL | | |
| 3. <u>Phalaris arundinacea</u> | 50 | yes | FACW | | |
| 4. <u>Typha latifolia</u> | 40 | yes | OBL | | |
| 5. _____ | _____ | _____ | _____ | | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = 0, 20% = 3 | 100 | = Total Cover | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Indicators: | |
| 1. _____ | _____ | _____ | _____ | <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation | |
| 2. _____ | _____ | _____ | _____ | <input checked="" type="checkbox"/> 2 - Dominance Test is >50% | |
| 50% = _____, 20% = _____ | 0 | = Total Cover | | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ | |
| % Bare Ground in Herb Stratum 0 | | | | <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| | | | | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ | |
| | | | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Remarks: 100% dominant wetland vegetation per the Dominance Test | | | | | |

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|---------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 1 | Duff | 100 | None | None | None | None | Duff | w/leaf litter |
| 1 to 18+ | 10YR 5/1 | 100 | None | None | None | None | Silt loam | |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 chroma

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☒ No ☐ Depth (inches): 5 inchesWater Table Present? Yes ☒ No ☐ Depth (inches): SurfaceSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Surface water 5 inches deep in wetland

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: May 15, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF North SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland BNSF North is located in narrow area between railroad tracks with development located outside the railroad tracks. Wetland is a narrow depression with culverts at both ends that are connected to other wetlands in the area. Wetland includes depressional HGM class. The majority of the wetland included standing water at the time of the investigation. Wetland BNSF North is connected to Wetland BNSF Northeast to the south via a culvert. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|--|------------------|-------------------|------------------|--|
| 1. <u>Arbutus menziesii</u> | <u>5</u> | <u>no</u> | <u>UPL</u> | |
| 2. <u>Populus trichocarpa</u> | <u>15</u> | <u>yes</u> | <u>FAC</u> | Total Number of Dominant Species Across All Strata: <u>4</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>20</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. <u>Rubus armeniacus</u> | <u>50</u> | <u>yes</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | 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>50</u> | = Total Cover | | FACU species _____ x4 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | UPL species _____ x5 = _____ |
| 1. <u>Agrostis capillaris</u> | <u>10</u> | <u>yes</u> | <u>FAC</u> | Column Totals: _____ (A) _____ (B) |
| 2. <u>Phalaris arundinacea</u> | <u>5</u> | <u>yes</u> | <u>FACW</u> | Prevalence Index = B/A = _____ |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>15</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | |
| % Bare Ground in Herb Stratum <u>85</u> | | | | |
| Remarks: 75% dominant wetland vegetation per the Dominance Test. 100% Himalayan blackberry in shrub cover. | | | | |

SOILSampling Point: BNSF North SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|---------|----------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 4 | Fill | 100 | None | None | None | None | Gravel | & angular rock |
| 4 to 18+ | 10YR 3/4 | 100 | None | None | None | None | Silt | w/fill gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: Fill prismDepth (inches): 4 inches**Hydric Soils Present?**Yes ☐ No ☒

Remarks: 4 chroma, dominated by fill, gravel & angular rock

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: May 15, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF North SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Kitsap silt loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF North is located in narrow area between railroad tracks with development located outside the railroad tracks. Wetland is a narrow depression with culverts at both ends that are connected to other wetlands in the area. Wetland includes depressional and slope HGM classes. The majority of the wetland included standing water at the time of the investigation. Wetland BNSF North is connected to Wetland BNSF Northeast to the south via a culvert. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|---|------------------|-------------------|------------------|---|-----------------|
| 1. <u>Populus trichocarpa</u> | <u>60</u> | <u>yes</u> | <u>FAC</u> | Number of Dominant Species That Are OBL, FACW, or FAC: | <u>3</u> (A) |
| 2. <u>Salix lasiandra</u> | <u>15</u> | <u>yes</u> | <u>FACW</u> | Total Number of Dominant Species Across All Strata: | <u>4</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: | <u>75</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>75</u> | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: | |
| 1. <u>Rubus armeniacus</u> | <u>15</u> | <u>yes</u> | <u>FACU</u> | Total % Cover of: | Multiply by: |
| 2. <u>Solanum dulcamara</u> | <u>45</u> | <u>yes</u> | <u>FACW</u> | OBL species _____ | x1 = _____ |
| 3. <u>Spiraea douglasii</u> | <u>10</u> | <u>no</u> | <u>FACW</u> | FACW species _____ | x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ | x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ | x4 = _____ |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>70</u> | = Total Cover | | UPL species _____ | x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) | _____ (B) |
| 1. _____ | _____ | _____ | _____ | Prevalence Index = B/A = _____ | |
| 2. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: | |
| 3. _____ | _____ | _____ | _____ | <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation | |
| 4. _____ | _____ | _____ | _____ | <input checked="" type="checkbox"/> 2 - Dominance Test is >50% | |
| 5. _____ | _____ | _____ | _____ | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ | |
| 6. _____ | _____ | _____ | _____ | <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 7. _____ | _____ | _____ | _____ | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ | |
| 8. _____ | _____ | _____ | _____ | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 9. _____ | _____ | _____ | _____ | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | |
| 1. _____ | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | |
| % Bare Ground in Herb Stratum <u>100</u> | | | | | |

Remarks: 75% dominant wetland vegetation per the Dominance Test

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|--------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 2 | 10YR 3/1 | 100 | None | None | None | None | Silt loam | w/dense root layer |
| 2 to 6 | 10YR 3/1 | 100 | None | None | None | None | Silt loam | |
| 6 to 18+ | 10YR 5/1 | 90 | 10YR 5/4 | 10 | D | M | Silt loam | w/gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 chroma with redox features

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

| | | | | | |
|--|-----|-------------------------------------|----|--------------------------|--------------------------------|
| Surface Water Present? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | Depth (inches): <u>1 inch</u> |
| Water Table Present? | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | Depth (inches): <u>Surface</u> |
| Saturation Present? (includes capillary fringe) | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/> | Depth (inches): <u>Surface</u> |

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: Surface water 1 inch deep at sample plot location, majority of the wetland included standing water at the time of the investigation.

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF Southwest SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland BNSF Southwest is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the north. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|---|------------------|-------------------|------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: 3 (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: 37 (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = 0, 20% = 0 | 0 | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. <u>Cytisus scoparius</u> | 40 | yes | UPL | |
| 2. <u>Rubus armeniacus</u> | 20 | yes | FACU | OBL species _____ x1 = _____ |
| 3. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ x4 = _____ |
| 50% = 1, 20% = 1 | 60 | = Total Cover | | UPL species _____ x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) _____ (B) |
| 1. <u>Agrostis capillaris</u> | 60 | yes | FAC | Prevalence Index = B/A = _____ |
| 2. <u>Phalaris arundinacea</u> | 5 | no | FACW | |
| 3. <u>Tanacetum vulgare</u> | 5 | no | UPL | |
| 4. <u>Trifolium pratense</u> | 10 | no | FACU | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = 1, 20% = 0 | 80 | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 50% = _____, 20% = _____ | 0 | = Total Cover | | |
| % Bare Ground in Herb Stratum 0 | | | | |
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |

Remarks: 37% dominant wetland vegetation per the Dominance Test.

Project Site: Sound Transit East Link Extension Project

SOIL
SPW

Sampling Point: BNSF Southwest

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|---------------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 18+ | 10YR 5/3 | 85 | 10YR 4/6 | 15 | D | M | Sandy clay w/gravel | |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

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

²Location: PL=Pore Lining, M=Matrix

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

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

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present?

Yes ☐ No ☒

Remarks: 3 chroma with redox features

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present?

Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 23, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: BNSF Southwest SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Area adjacent to RR Tracks Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland BNSF Southwest is located adjacent to railroad tracks with commercial development located to the west. Wetland includes depressional and slope HGM classes. Jurisdictional ditch along railroad tracks hydrologically connects wetland to wetlands to the north. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|--|------------------|-------------------|------------------|---|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: 1 (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = 0, 20% = 0 | 0 | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ |
| 3. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ x4 = _____ |
| 50% = 0, 20% = 0 | 0 | = Total Cover | | UPL species _____ x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) _____ (B) |
| 1. <u>Agrostis capillaris</u> | 60 | yes | FAC | Prevalence Index = B/A = _____ |
| 2. <u>Dipsacus fullonum</u> | 1 | no | FAC | |
| 3. <u>Phalaris arundinacea</u> | 20 | no | FACW | |
| 4. <u>Poa pratensis</u> | 20 | no | FAC | |
| 5. <u>Rumex crispus</u> | 1 | no | FAC | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = 1, 20% = 0 | 100 | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Indicators: |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | <input checked="" type="checkbox"/> 2 - Dominance Test is >50% |
| 50% = _____, 20% = _____ | 0 | = Total Cover | | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ |
| % Bare Ground in Herb Stratum 0 | | | | <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| | | | | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ |
| | | | | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) |
| | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks: 100% dominant wetland vegetation per the Dominance Test | | | | |

SOIL
SPWSampling Point: BNSF Southwest**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|-------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 2 | 10YR 4/2 | 100 | None | None | None | None | Sandy silt | w/gravel |
| 2 to 6 | 10YR 4/2 | 70 | 10YR 5/1 | 30 | D | M | Sandy silt | w/gravel & cobble |
| 6 to 18+ | 10YR 4/2 | 60 | 10YR 5/1 | 40 | D | M | Sandy silt | w/gravel |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 2 chroma with redox

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 6 inchesSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: North Lake SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland North Lake is located in narrow area between railroad tracks and commercial development. Wetland includes slope HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|---|------------------|-------------------|------------------|--|
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>2</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = <u>0</u> , 20% = <u>0</u> | <u>0</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. <u>Rubus armeniacus</u> | <u>20</u> | <u>yes</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | 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>20</u> | = Total Cover | | FACU species _____ x4 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | UPL species _____ x5 = _____ |
| 1. <u>Cirsium arvense</u> | <u>5</u> | <u>no</u> | <u>FACU</u> | Column Totals: _____ (A) _____ (B) |
| 2. <u>Epilobium watsonii</u> | <u>1</u> | <u>no</u> | <u>FACW</u> | Prevalence Index = B/A = _____ |
| 3. <u>Equisetum arvense</u> | <u>1</u> | <u>no</u> | <u>FAC</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. <u>Juncus effusus</u> | <u>20</u> | <u>no</u> | <u>FACW</u> | |
| 5. <u>Phalaris arundinacea</u> | <u>80</u> | <u>yes</u> | <u>FACW</u> | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>100</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | |
| 1. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | |
| Remarks: 50% dominant wetland vegetation per the Dominance Test, only 2 dominant species. | | | | |

SOILSampling Point: North Lake SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|-----------------|------------|----------------|-------------|-------------------|------------------|-------------------|-----------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| <u>0 to 18+</u> | <u>10YR 3/3</u> | <u>100</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>Sandy loam</u> | <u>w/cobble</u> |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: 3 chroma

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: North Lake SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland North Lake is located in narrow area between railroad tracks and commercial development. Wetland includes slope HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|---|------------------|-------------------|------------------|--|
| 1. <u><i>Alnus rubra</i></u> | <u>10</u> | <u>yes</u> | <u>FAC</u> | |
| 2. <u><i>Salix scouleriana</i></u> | <u>40</u> | <u>yes</u> | <u>FAC</u> | Total Number of Dominant Species Across All Strata: <u>4</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>50</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. <u><i>Rubus armeniacus</i></u> | <u>15</u> | <u>yes</u> | <u>FACU</u> | |
| 2. _____ | _____ | _____ | _____ | 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>15</u> | = Total Cover | | FACU species _____ x4 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | UPL species _____ x5 = _____ |
| 1. <u><i>Epilobium watsonii</i></u> | <u>5</u> | <u>no</u> | <u>FACW</u> | Column Totals: _____ (A) _____ (B) |
| 2. <u><i>Juncus effusus</i></u> | <u>15</u> | <u>no</u> | <u>FACW</u> | Prevalence Index = B/A = _____ |
| 3. <u><i>Phalaris arundinacea</i></u> | <u>80</u> | <u>yes</u> | <u>FACW</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>100</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 1. _____ | _____ | _____ | _____ | |
| 2. _____ | _____ | _____ | _____ | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | |

Remarks: 75% dominant wetland vegetation per the Dominance Test

SOILSampling Point: North Lake SPW**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|-----------------|------------|-----------------|-------------|-------------------|------------------|-------------------|------------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| <u>0 to 5</u> | <u>10YR 2/1</u> | <u>100</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>Loam</u> | <u>w/cobble & angular rock</u> |
| <u>5 to 8</u> | <u>10YR 3/1</u> | <u>100</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>Loam</u> | <u>w/angular rock</u> |
| <u>8 to 18+</u> | <u>10YR 5/1</u> | <u>60</u> | <u>10YR 5/6</u> | <u>40</u> | <u>D</u> | <u>M</u> | <u>Sandy clay</u> | <u>w/angular rock</u> |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 chroma with redox

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 3 inchesSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: Central Lake SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland D is located in narrow area between railroad tracks and development on Lake Bellevue. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|---|------------------|-------------------|------------------|---|--------------|
| 1. _____ | _____ | _____ | _____ | Number of Dominant Species That Are OBL, FACW, or FAC: | 1 (A) |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: | 2 (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: | 50 (A/B) |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = 0, 20% = 0 | 0 | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: | |
| 1. <u>Rubus armeniacus</u> | 10 | yes | FACU | Total % Cover of: | Multiply by: |
| 2. _____ | _____ | _____ | _____ | OBL species _____ | x1 = _____ |
| 3. _____ | _____ | _____ | _____ | FACW species _____ | x2 = _____ |
| 4. _____ | _____ | _____ | _____ | FAC species _____ | x3 = _____ |
| 5. _____ | _____ | _____ | _____ | FACU species _____ | x4 = _____ |
| 50% = 1, 20% = 0 | 10 | = Total Cover | | UPL species _____ | x5 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | Column Totals: _____ (A) | _____ (B) |
| 1. <u>Epilobium watsonii</u> | 10 | yes | FACW | Prevalence Index = B/A = _____ | |
| 2. <u>Verbascum thapsus</u> | 1 | no | UPL | | |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: | |
| 4. _____ | _____ | _____ | _____ | <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation | |
| 5. _____ | _____ | _____ | _____ | <input checked="" type="checkbox"/> 2 - Dominance Test is >50% | |
| 6. _____ | _____ | _____ | _____ | <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ | |
| 7. _____ | _____ | _____ | _____ | <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 8. _____ | _____ | _____ | _____ | <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ | |
| 9. _____ | _____ | _____ | _____ | <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 10. _____ | _____ | _____ | _____ | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = 1, 20% = 0 | 11 | = Total Cover | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| 1. _____ | _____ | _____ | _____ | | |
| 2. _____ | _____ | _____ | _____ | | |
| 50% = _____, 20% = _____ | 0 | = Total Cover | | | |
| % Bare Ground in Herb Stratum 89 | | | | | |
| Remarks: 50% dominant wetland vegetation per the Dominance Test, only 2 dominant species. | | | | | |

SOILSampling Point: Central Lake SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------------|----------------|-------------|-------------------|------------------|-------------|---|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| <u>0 to 18+</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>None</u> | <u>Sand</u> | <u>Fill prism gravel & angular rock</u> |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: Fill prismDepth (inches): At surface**Hydric Soils Present?**Yes ☐ No ☒Remarks: Fill prism of sand, gravel, and angular rock**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: Central Lake SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland Central Lake is located in narrow area between railroad tracks and development on Lake Bellevue. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|---|------------------|-------------------|------------------|--|---|
| 1. <u><i>Alnus rubra</i></u> | <u>5</u> | <u>yes</u> | <u>FAC</u> | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>6</u> (B) | |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B) | |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>5</u> | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | |
| 1. <u><i>Cornus sericea</i></u> | <u>1</u> | <u>no</u> | <u>FACW</u> | Prevalence Index worksheet: | |
| 2. <u><i>Rubus armeniacus</i></u> | <u>20</u> | <u>yes</u> | <u>FACU</u> | | |
| 3. <u><i>Spiraea douglasii</i></u> | <u>50</u> | <u>yes</u> | <u>FACW</u> | Total % Cover of: _____ Multiply by: _____ | |
| 4. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ | |
| 5. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>71</u> | = Total Cover | | FAC species _____ x3 = _____ | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | |
| 1. <u><i>Epilobium watsonii</i></u> | <u>20</u> | <u>yes</u> | <u>FACW</u> | FACU species _____ x4 = _____ | |
| 2. <u><i>Ludwigia palustris</i></u> | <u>60</u> | <u>yes</u> | <u>OBL</u> | UPL species _____ x5 = _____ | |
| 3. <u><i>Phalaris arundinacea</i></u> | <u>20</u> | <u>yes</u> | <u>FACW</u> | Column Totals: _____ (A) _____ (B) | |
| 4. _____ | _____ | _____ | _____ | Prevalence Index = B/A = _____ | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>2</u> | <u>100</u> | = Total Cover | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | |
| 1. _____ | _____ | _____ | _____ | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | | |
| 50% = _____, 20% = _____ | <u>0</u> | = Total Cover | | | |
| % Bare Ground in Herb Stratum <u>0</u> | | | | | |

Remarks: 83% dominant wetland vegetation per the Dominance Test

SOILSampling Point: Central Lake SPW**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|-------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 3 | 10YR 3/1 | 100 | None | None | None | None | Silt loam | w/organic material |
| 3 to 8 | 10YR 5/2 | 60 | 10YR 5/6 | 40 | D | M | Sandy loam | w/gravel |
| 8 to 18+ | Gley 1 5/5G | 100 | None | None | None | None | Sandy clay | w/gravel & angular rock |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ 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)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 5 inchesSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: South Lake SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: Wetland South Lake is located in narrow area between railroad tracks and development on Lake Bellevue. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------------|---------------------|------------------|--|--|--------------------------|---------------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|--------------|-------|------------|-------------|-------|------------|----------------|-----------|-----------|--------------------------------|--|--|
| 1. <u>Populus trichocarpa</u> | <u>20</u> | <u>yes</u> | <u>FAC</u> | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57</u> (A/B) | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Salix hookeriana</u> | <u>20</u> | <u>yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>2</u> , 20% = <u>0</u> | <u>40</u> | = Total Cover | | Prevalence Index worksheet: <table border="0"> <tr> <td></td> <td><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>_____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species</td> <td>_____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species</td> <td>_____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = _____</td> </tr> </table> | | <u>Total % Cover of:</u> | <u>Multiply by:</u> | OBL species | _____ | x1 = _____ | FACW species | _____ | x2 = _____ | FAC species | _____ | x3 = _____ | FACU species | _____ | x4 = _____ | UPL species | _____ | x5 = _____ | Column Totals: | _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | | |
| | <u>Total % Cover of:</u> | <u>Multiply by:</u> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OBL species | _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACW species | _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FAC species | _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FACU species | _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPL species | _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Column Totals: | _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Ilex aquifolium</u> | <u>15</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Rubus armeniacus</u> | <u>30</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>45</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Epilobium watsonii</u> | <u>15</u> | <u>yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Equisetum arvense</u> | <u>15</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>2</u> , 20% = <u>0</u> | <u>30</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Hedera hibernica</u> | <u>100</u> | <u>yes</u> | <u>UPL</u> | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>100</u> | = Total Cover | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>70</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Remarks: 57% dominant wetland vegetation per the Dominance Test

SOILSampling Point: South Lake SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|---------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 4 | 10YR 3/3 | 100 | None | None | None | None | Sandy loam | w/gravel |
| 4 to 18+ | 10YR 3/3 | 100 | None | None | None | None | Sandy loam | w/grave, cobble, & angular rock |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: 3 chroma with no redox features

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?**Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: Feb. 14, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: South Lake SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between development Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|--|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland South Lake is located in narrow area between railroad tracks and development on Lake Bellevue. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: | |
|---|------------------|-------------------|------------------|--|---|
| 1. <u>Salix hookeriana</u> | <u>50</u> | <u>yes</u> | <u>FACW</u> | | Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) |
| 2. _____ | _____ | _____ | _____ | Total Number of Dominant Species Across All Strata: <u>6</u> (B) | |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B) | |
| 4. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>50</u> | = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | |
| 1. <u>Rubus armeniacus</u> | <u>20</u> | <u>yes</u> | <u>FACU</u> | Prevalence Index worksheet: | |
| 2. <u>Rubus spectabilis</u> | <u>30</u> | <u>yes</u> | <u>FAC</u> | | |
| 3. <u>Spiraea douglasii</u> | <u>40</u> | <u>yes</u> | <u>FACW</u> | Total % Cover of: _____ Multiply by: _____ | |
| 4. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ | |
| 5. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ | |
| 50% = <u>1</u> , 20% = <u>2</u> | <u>90</u> | = Total Cover | | FAC species _____ x3 = _____ | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | |
| 1. <u>Equisetum telmateia</u> | <u>5</u> | <u>no</u> | <u>FACW</u> | FACU species _____ x4 = _____ | |
| 2. <u>Juncus effusus</u> | <u>1</u> | <u>yes</u> | <u>FACW</u> | UPL species _____ x5 = _____ | |
| 3. <u>Phalaris arundinacea</u> | <u>90</u> | <u>yes</u> | <u>FACW</u> | Column Totals: _____ (A) _____ (B) | |
| 4. _____ | _____ | _____ | _____ | Prevalence Index = B/A = _____ | |
| 5. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 6. _____ | _____ | _____ | _____ | | |
| 7. _____ | _____ | _____ | _____ | | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>96</u> | = Total Cover | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | |
| 1. <u>Hedera hibernica</u> | <u>10</u> | <u>yes</u> | <u>UPL</u> | | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | | |
| 50% = _____, 20% = _____ | <u>10</u> | = Total Cover | | | |
| % Bare Ground in Herb Stratum <u>4</u> | | | | | |

Remarks: 67% dominant wetland vegetation per the Dominance Test

SOILSampling Point: South Lake SPW**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|---------|--------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 3 | 10YR 3/2 | 100 | None | None | None | None | Silt | w/roots throughout |
| 3 to 18+ | 10YR 2/1 | 100 | None | None | None | None | Loam | w/roots throughout |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ No ☐

Remarks: 1 and 2 chroma

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 1 inchSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation and water table observed in sample plot

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 9, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: Lake Bellevue SPU
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Narrow area between railroad and Lake Local relief (concave, convex, none): concave Slope (%): 0% to 1%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: PUBH
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| Remarks: The Upland soil plot is located in a narrow area between railroad tracks and development on Lake Bellevue. Wetland includes depressional HGM class. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57</u> (A/B) | | | | | | | | | | | | | | | | |
|---|------------------|-------------------|------------------|---|-------------------|--------------|-------------------|------------|--------------------|------------|-------------------|------------|--------------------|------------|-------------------|------------|--------------------------|-----------|--------------------------------|--|
| 1. <u>Populus trichocarpa</u> | <u>60</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | |
| 2. <u>Alnus rubra</u> | <u>20</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>80</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Ilex aquifolium</u> | <u>10</u> | <u>yes</u> | <u>FACU</u> | Prevalence Index worksheet: <table border="0"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table> | Total % Cover of: | Multiply by: | OBL species _____ | x1 = _____ | FACW species _____ | x2 = _____ | FAC species _____ | x3 = _____ | FACU species _____ | x4 = _____ | UPL species _____ | x5 = _____ | Column Totals: _____ (A) | _____ (B) | Prevalence Index = B/A = _____ | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | |
| OBL species _____ | x1 = _____ | | | | | | | | | | | | | | | | | | | |
| FACW species _____ | x2 = _____ | | | | | | | | | | | | | | | | | | | |
| FAC species _____ | x3 = _____ | | | | | | | | | | | | | | | | | | | |
| FACU species _____ | x4 = _____ | | | | | | | | | | | | | | | | | | | |
| UPL species _____ | x5 = _____ | | | | | | | | | | | | | | | | | | | |
| Column Totals: _____ (A) | _____ (B) | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = _____ | | | | | | | | | | | | | | | | | | | | |
| 2. <u>Rubus armeniacus</u> | <u>30</u> | <u>yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>40</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Epilobium watsonii</u> | <u>10</u> | <u>yes</u> | <u>FACW</u> | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | | | | | | | | | | | | |
| 2. <u>Equisetum arvense</u> | <u>5</u> | <u>yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | | | |
| 3. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 4. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 5. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 6. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 7. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 8. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 9. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 10. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 11. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>15</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Hedera helix</u> | <u>100</u> | <u>yes</u> | <u>UPL</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | | | | |
| 2. _____ | _____ | _____ | _____ | | | | | | | | | | | | | | | | | |
| 50% = <u>1</u> , 20% = <u>0</u> | <u>100</u> | = Total Cover | | | | | | | | | | | | | | | | | | |
| % Bare Ground in Herb Stratum <u>70</u> | | | | | | | | | | | | | | | | | | | | |
| Remarks: 57% dominant wetland vegetation per the Dominance Test | | | | | | | | | | | | | | | | | | | | |

SOILSampling Point: Lake Bellevue SPU**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|----------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 3 | 10YR 3/3 | 100 | None | None | None | None | Sandy loam | w/gravel and coarse root matt |
| 3 to 18+ | 10YR 3/3 | 100 | None | None | None | None | Sandy loam | w/gravel, cobble, & angular rock |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☐ No ☒

Remarks: 3 chroma with no redox features and several pieces of concrete and asphalt found in the adjacent soils. Fill from railroad.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____**Wetland Hydrology Present?** Yes ☐ No ☒

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

Remarks: No saturation or water table observed in sample plot and the soil was strongly compacted with concrete and other evidence of fill.

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

Project Site: Sound Transit East Link Extension Project City/County: Bellevue/King Sampling Date: April 9, 2013
 Applicant/Owner: Sound Transit State: WA Sampling Point: Lake Bellevue SPW
 Investigator(s): C Douglas & J. Pursley Section, Township, Range: S29, T24N, R5E
 Landform (hillslope, terrace, etc.): Depression/Laket Local relief (concave, convex, none): concave Slope (%): 0% to 2%
 Subregion (LRR): A Lat: 47.62N Long: 122.18W Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: PUBH
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

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

| | | | |
|---|---|---------------------------------------|---|
| Hydrophytic Vegetation Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | |
| Remarks: Wetland Lake Bellevue is located east of an existing rail line and is surrounded by a commercial business park and parking lots. | | | |

VEGETATION – Use scientific names of plants

| Tree Stratum (Plot size: 30 foot radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test Worksheet: |
|---|------------------|-------------------|------------------|--|
| 1. <u>Salix hookeriana</u> | <u>30</u> | <u>yes</u> | <u>FACW</u> | |
| 2. <u>Populus balsamifera</u> | <u>50</u> | <u>yes</u> | <u>FAC</u> | Total Number of Dominant Species Across All Strata: <u>6</u> (B) |
| 3. _____ | _____ | _____ | _____ | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>80</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: 15 foot radius) | | | | Prevalence Index worksheet: |
| 1. <u>Spiraea douglasii</u> | <u>20</u> | <u>yes</u> | <u>FACW</u> | |
| 2. _____ | _____ | _____ | _____ | Total % Cover of: _____ Multiply by: _____ |
| 3. _____ | _____ | _____ | _____ | OBL species _____ x1 = _____ |
| 4. _____ | _____ | _____ | _____ | FACW species _____ x2 = _____ |
| 5. _____ | _____ | _____ | _____ | FAC species _____ x3 = _____ |
| 50% = <u>1</u> , 20% = _____ | <u>20</u> | = Total Cover | | FACU species _____ x4 = _____ |
| Herb Stratum (Plot size: 3 foot radius) | | | | UPL species _____ x5 = _____ |
| 1. <u>Phalaris arundinacea</u> | <u>20</u> | <u>yes</u> | <u>FACW</u> | Column Totals: _____ (A) _____ (B) |
| 2. <u>Juncus effusus</u> | <u>5</u> | <u>yes</u> | <u>FACW</u> | Prevalence Index = B/A = _____ |
| 3. _____ | _____ | _____ | _____ | Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. _____ | _____ | _____ | _____ | |
| 5. _____ | _____ | _____ | _____ | |
| 6. _____ | _____ | _____ | _____ | |
| 7. _____ | _____ | _____ | _____ | |
| 8. _____ | _____ | _____ | _____ | |
| 9. _____ | _____ | _____ | _____ | |
| 10. _____ | _____ | _____ | _____ | |
| 11. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = <u>1</u> | <u>25</u> | = Total Cover | | |
| Woody Vine Stratum (Plot size: 3 foot radius) | | | | |
| 1. <u>Hedera helix</u> | <u>25</u> | <u>yes</u> | <u>UPL</u> | Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| 2. _____ | _____ | _____ | _____ | |
| 50% = <u>1</u> , 20% = _____ | <u>25</u> | = Total Cover | | |
| % Bare Ground in Herb Stratum <u>4</u> | | | | |

Remarks: 83% dominant wetland vegetation per the Dominance Test. Soil plot was located at the Lake edge.

SOILSampling Point: Lake Bellevue SPW**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|------------|--------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0 to 2 | 10YR 2/1 | 100 | None | None | None | None | Loam | w/roots throughout |
| 2 to 18+ | 10YR 2/1 | 100 | None | None | None | None | Sandy Loam | w/rocks and sandt |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present?Yes ☒ 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)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | (except MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input checked="" type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Water-Stained Leaves (B9) |
| (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☒ No ☐ Depth (inches): 2 inchSaturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): Surface**Wetland Hydrology Present?** Yes ☒ No ☐

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

Remarks: Saturation year round by the constant fluctuation of Lake Bellevue and debris at the Lake outflow to Sturtevant Creek.

DITCH FIELD DATA SHEET

| | |
|---|-----------------------------|
| Project <u>Sound Transit East Link Ext.</u> | Date <u>4/23/2013</u> |
| Applicant <u>Sound Transit</u> | County/State <u>King WA</u> |
| Investigators <u>C. Douglas, J. Pursley</u> | S/T/R <u>29/24N/5E</u> |

| | |
|--|------------------|
| Ditch Name <u>1</u> | Photo <u>Yes</u> |
| Location <u>BNSF ROW</u> | |
| Ditch Connects to Navigable Water (jurisdictional under Talent)? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no (explain) <u>West tributary to Kelsey Creek via culverts</u> | |

| Field Observations | |
|--|--|
| <p style="text-align: center;">Ditch Characteristics</p> <p><input checked="" type="checkbox"/> Bed and bank apparent</p> <p><input checked="" type="checkbox"/> Steeply sloped</p> <p><input checked="" type="checkbox"/> Vegetation flattened from possible water flow</p> <p><input checked="" type="checkbox"/> Scour signs</p> <p><input type="checkbox"/> Debris rack present</p> <p><input checked="" type="checkbox"/> No vegetation in scour area</p> <p><input type="checkbox"/> Vegetation with very shallow roots in center</p> <p><input type="checkbox"/> Vegetation or soil stained with water marks</p> <p><input type="checkbox"/> Vegetation is thick, deep roots, and no flow marks</p> <p><input type="checkbox"/> Soil is cracked, or other evidence of ponding (explain) _____</p> <p><input checked="" type="checkbox"/> Ditch is flat and/or wide</p> | <p style="text-align: center;">Other Observations</p> <p><input checked="" type="checkbox"/> Discharges into catchbasin or <u>culvert</u> (circle)</p> <p><input checked="" type="checkbox"/> Standing water present <u>30</u> % of ditch</p> <p><input type="checkbox"/> Water flowing in ditch during dry season</p> <p><input checked="" type="checkbox"/> Large quantities of water flowing during wet season, or after rain event</p> <p><input checked="" type="checkbox"/> Culvert showing water stains or marks</p> <p><input type="checkbox"/> Soils are hydric</p> <p><input type="checkbox"/> Soils are native</p> <p><input checked="" type="checkbox"/> Soils are fill, sand, or clearly indicative of planned/constructed ditch</p> <p><input type="checkbox"/> Soils are saturated during the dry season</p> <p><input checked="" type="checkbox"/> If ditch is rock lined, there are water stained rocks to indicate a high water mark or flow line</p> |

| Other Information |
|--|
| Does site appear to be regularly maintained? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no (explain) |
| Has site been recently mowed? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no (explain) |
| Length <u>214'</u> ^{2 to 3'} Width <u> </u> Total Area <u> </u> |
| Ditch with water flowing during site visit <u>60</u> % Ditch with standing water during site visit <u>30</u> % |
| Notes: |

DITCH FIELD DATA SHEET

| | |
|---|-------------------------------|
| Project <u>Sound Transit East Link EXT.</u> | Date <u>4/23/2013</u> |
| Applicant <u>Sound Transit</u> | County/State <u>King / WA</u> |
| Investigators <u>C. Douglas, J. Pursley</u> | S/T/R <u>29/24N/SE</u> |

| | |
|--|------------------|
| Ditch Name <u>2</u> | Photo <u>Yes</u> |
| Location <u>BNSF ROW</u> | |
| Ditch Connects to Navigable Water (jurisdictional under Talent)? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no (explain) <u>West Tributary to Kelsey Creek via Culverts</u> | |

| Field Observations | |
|--|--|
| Ditch Characteristics <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Bed and bank apparent <input checked="" type="checkbox"/> Steeply sloped <input checked="" type="checkbox"/> Vegetation flattened from possible water flow <input checked="" type="checkbox"/> Scour signs <input type="checkbox"/> Debris rack present <input type="checkbox"/> No vegetation in scour area <input checked="" type="checkbox"/> Vegetation with very shallow roots in center <input type="checkbox"/> Vegetation or soil stained with water marks <input type="checkbox"/> Vegetation is thick, deep roots, and no flow marks <input type="checkbox"/> Soil is cracked, or other evidence of ponding (explain) _____ <input checked="" type="checkbox"/> Ditch is flat and/or wide | Other Observations <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Discharges into catchbasin of <u>culvert</u> (circle) <input type="checkbox"/> Standing water present <u>0</u> % of ditch <input type="checkbox"/> Water flowing in ditch during dry season <input checked="" type="checkbox"/> Large quantities of water flowing during wet season, or after rain event <input checked="" type="checkbox"/> Culvert showing water stains or marks <input type="checkbox"/> Soils are hydric <input type="checkbox"/> Soils are native <input checked="" type="checkbox"/> Soils are fill, sand, or clearly indicative of planned/constructed ditch <input type="checkbox"/> Soils are saturated during the dry season <input checked="" type="checkbox"/> If ditch is rock lined, there are water stained rocks to indicate a high water mark or flow line |

| Other Information |
|---|
| Does site appear to be regularly maintained? <input type="checkbox"/> yes <input type="checkbox"/> no (explain) |
| Has site been recently mowed? <input type="checkbox"/> yes <input type="checkbox"/> no (explain) |
| Length <u>293'</u> Width <u>2' to 4'</u> Total Area _____ |
| Ditch with water flowing during site visit <u>100</u> % Ditch with standing water during site visit <u>0</u> % |
| Notes: |

DITCH FIELD DATA SHEET

| | |
|---|-----------------------------|
| Project <u>Sound Transit East Link EXT.</u> | Date <u>4/23/2013</u> |
| Applicant <u>Sound Transit</u> | County/State <u>King/WA</u> |
| Investigators <u>C. Douglas, J. Purdley</u> | S/T/R <u>29KYN/SE</u> |

| | |
|---|------------------|
| Ditch Name <u>3</u> | Photo <u>Yes</u> |
| Location <u>BNSF ROW</u> | |
| Ditch Connects to Navigable Water (jurisdictional under Talent)? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no (explain) <u>West Tributary to Kelsey Creek via culverts.</u> | |

| Field Observations | |
|--|--|
| <p style="text-align: center;">Ditch Characteristics</p> <p><input checked="" type="checkbox"/> Bed and bank apparent</p> <p><input checked="" type="checkbox"/> Steeply sloped</p> <p><input checked="" type="checkbox"/> Vegetation flattened from possible water flow</p> <p><input checked="" type="checkbox"/> Scour signs</p> <p><input type="checkbox"/> Debris rack present</p> <p><input type="checkbox"/> No vegetation in scour area</p> <p><input checked="" type="checkbox"/> Vegetation with very shallow roots in center</p> <p><input type="checkbox"/> Vegetation or soil stained with water marks</p> <p><input type="checkbox"/> Vegetation is thick, deep roots, and no flow marks</p> <p><input type="checkbox"/> Soil is cracked, or other evidence of ponding (explain) _____</p> <p><input checked="" type="checkbox"/> Ditch is flat and/or wide</p> | <p style="text-align: center;">Other Observations</p> <p><input checked="" type="checkbox"/> Discharges into catchbasin or <u>culvert</u> (circle)</p> <p><input type="checkbox"/> Standing water present <u>0</u> % of ditch</p> <p><input type="checkbox"/> Water flowing in ditch during dry season</p> <p><input checked="" type="checkbox"/> Large quantities of water flowing during wet season, or after rain event</p> <p><input checked="" type="checkbox"/> Culvert showing water stains or marks</p> <p><input type="checkbox"/> Soils are hydric</p> <p><input type="checkbox"/> Soils are native</p> <p><input checked="" type="checkbox"/> Soils are fill, sand, or clearly indicative of planned/constructed ditch</p> <p><input type="checkbox"/> Soils are saturated during the dry season</p> <p><input checked="" type="checkbox"/> If ditch is rock lined, there are water stained rocks to indicate a high water mark or flow line</p> |

| Other Information |
|--|
| Does site appear to be regularly maintained? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no (explain) |
| Has site been recently mowed? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no (explain) |
| Length <u>56'</u> Width <u>2 to 3'</u> Total Area _____ |
| Ditch with water flowing during site visit <u>30%</u> Ditch with standing water during site visit <u>0%</u> |
| Notes: |

Attachment E

Ecology Wetland Rating Forms

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): BNSF WestDate of site visit: April 23, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | |
|----------------|---------------|
| Category I = | Score > 70 |
| Category II = | Score 51 - 69 |
| Category III = | Score 30 – 50 |
| Category IV = | Score < 30 |

Score for Water Quality Functions

14

Score for Hydrologic Functions

16

Score for Habitat Functions

12

TOTAL Score for Functions

42Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**III****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
☒ NO – go to 3 ☐ YES – The wetland class is **Flats**
 If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 (2 m)?
☒ NO – go to 4 ☐ YES – The 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 gradual*).
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☒ The water leaves the wetland **without being impounded**?
 NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).*
☐ NO – go to 5 ☒ YES – The wetland class is **Slope**

5. Does the entire wetland 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 of 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 located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
☒ No – go to 8 ☐ YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| D Depressional and Flat Wetlands | | Points |
|---|--|--|
| WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality. | | (only 1 score per box) (see p.38) |
| D 1 | Does the wetland have the <u>potential</u> to improve water quality? | |
| D 1.1 | Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> Unit is a depression with no surface water leaving it (no outlet) points = 3 <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ... points = 2 <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) .. points = 1 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> (If ditch is not permanently flowing treat unit as “intermittently flowing”) Provide photo or drawing | Figure <input type="checkbox"/> 2 |
| D 1.2 | The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0 | 0 |
| D 1.3 | Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 <input type="checkbox"/> Map of Cowardin vegetation classes | Figure <input type="checkbox"/> 3 |
| D 1.4 | Characteristics of seasonal ponding or inundation: <i>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.</i> <ul style="list-style-type: none"> Area seasonally ponded is > 1/2 total area of wetland points = 4 <input type="checkbox"/> Area seasonally ponded is > 1/4 total area of wetland points = 2 <input checked="" type="checkbox"/> Area seasonally ponded is < 1/4 total area of wetland points = 0 <input type="checkbox"/> Map of Hydroperiods | Figure <input type="checkbox"/> 2 |
| Total for D 1 <i>Add the points in the boxes above</i> | | 7 |
| 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 the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 | (see p. 44) Multiplier 2 |
| ◆ 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 <ul style="list-style-type: none"> Unit is a depression with no surface water leaving it (no outlet) points = 4 <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 <input checked="" type="checkbox"/> Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> (If ditch is not permanently flowing treat unit as “intermittently flowing”) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 | 2 |
| D 3.2 | Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <ul style="list-style-type: none"> Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 <input type="checkbox"/> The wetland is a “headwater” wetland..... points = 5 <input type="checkbox"/> Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 <input type="checkbox"/> Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 <input checked="" type="checkbox"/> Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water . points = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ft points = 0 <input type="checkbox"/> | 3 |
| D 3.3 | Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> The area of the basin is less than 10 times the area of unit..... points = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit..... points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit points = 0 <input type="checkbox"/> Entire unit is in the FLATS class points = 5 <input type="checkbox"/> | 3 |
| Total for D 3 <i>Add the points in the boxes above</i> | | 8 |

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <u>16</u> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|---|---|-------------------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|-----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p><u>Vegetation structure</u> (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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p><u>Hydroperiods</u> (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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <p>Map of hydroperiods</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p><u>Richness of Plant Species</u> (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.</p> <p>If you counted:</p> <table border="0"> <tr> <td>> 19 species</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>< 5 species</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>List species below if you want to:</p> | > 19 species | points = 2 | <input type="checkbox"/> | 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | < 5 species | points = 0 | <input type="checkbox"/> | <p>1</p> | | | |
| > 19 species | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| < 5 species | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.4 | <p><u>Interspersion of Habitats</u> (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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p><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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p>2</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | 8 | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 8 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 12 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I</p> <p><input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I</p> <p><input type="checkbox"/></p> <p>Cat. II</p> <p><input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II</p> <p><input type="checkbox"/></p> <p>Cat. III</p> <p><input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

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): BNSF NorthwestDate of site visit: April 23, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☐ III ☒ IV

| | |
|----------------|---------------|
| Category I = | Score > 70 |
| Category II = | Score 51 - 69 |
| Category III = | Score 30 – 50 |
| Category IV = | Score < 30 |

Score for Water Quality Functions

8

Score for Hydrologic Functions

6

Score for Habitat Functions

10

TOTAL Score for Functions

24Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**IV****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

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

☒ NO – go to 3

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

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

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 (2 m)?

☒ NO – go to 4

☐ YES – The 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 gradual*).

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☒ The water leaves the wetland **without being impounded?**

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

☐ NO – go to 5

☒ YES – The wetland class is **Slope**

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

☒ No – go to 8

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <p><u>6</u></p> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|--|---|--------------------------|------------------------------|--------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|-----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p>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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input checked="" type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | 2 structures..... points = 1 | <input checked="" type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input checked="" type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p>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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of hydroperiods</p> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p>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.</p> <p>If you counted:</p> <table border="0"> <tr> <td>> 19 species</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>< 5 species</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>List species below if you want to:</p> | > 19 species | points = 2 | <input type="checkbox"/> | 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | < 5 species | points = 0 | <input type="checkbox"/> | <p>1</p> | | | |
| > 19 species | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| < 5 species | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.4 | <p>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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p>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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p>1</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>6</p> | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|-----------|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i> Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).</p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 6 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 10 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I <input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

Comments:

Wetland name or number E2-1

RATING SUMMARY – Western Washington

Name of wetland (or ID #): E2-1 Date of site visit: 12/15/14

Rated by Torrey Luiting Trained by Ecology? ☒ Yes ☐ No Date of training 8/2007

HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Y ☒ N

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

Source of base aerial photo/map City of Bellevue 2013

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

1. Category of wetland based on FUNCTIONS

_____ Category I – Total score = 23 - 27

_____ Category II – Total score = 20 - 22

☒ Category III – Total score = 16 - 19

_____ Category IV – Total score = 9 - 15

Total Estimated Area
i 0.51 acre

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

Score for each
function based
on three
ratings
(order of ratings
is not
important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

| CHARACTERISTIC | CATEGORY |
|------------------------------------|-------------------------------------|
| Estuarine | I II |
| Wetland of High Conservation Value | I |
| Bog | I |
| Mature Forest | I |
| Old Growth Forest | I |
| Coastal Lagoon | I II |
| Interdunal | I II III IV |
| None of the above | <input checked="" type="checkbox"/> |

Wetland name or number E2-1

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

| Map of: <u>E2-1</u> | 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 (<i>can be added to map of hydroperiods</i>) | D 1.1, D 4.1 | D-1/2 |
| Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>) | 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 (<i>can be added to another figure</i>) | R 2.4 | |
| Plant cover of trees, shrubs, and herbaceous plants | R 1.2, R 4.2 | |
| Width of unit vs. width of stream (<i>can be added to another figure</i>) | 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 (<i>can be added to another figure</i>) | 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 (<i>can be added to figure above</i>) | S 4.1 | |
| Boundary of 150 ft buffer (<i>can be added to another figure</i>) | 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 E2-1

NO – go to 6

YES – The wetland class is **Riverine**

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

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

NO – go to 7

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number E2-1

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. <u>Characteristics of surface water outflows from the wetland:</u> | | |
| Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). | points = 3 | 3 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. | points = 2 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 1 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. | points = 1 | |
| D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 No = 0 | | |
| D 1.3. <u>Characteristics and distribution of persistent plants</u> (Emergent, Scrub-shrub, and/or Forested Cowardin classes): | | |
| Wetland has persistent, ungrazed, plants > 95% of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, plants > 1/2 of area | points = 3 | |
| Wetland has persistent, ungrazed plants > 1/10 of area | points = 1 | |
| Wetland has persistent, ungrazed plants < 1/10 of area | points = 0 | |
| D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> | | |
| <i>This is the area that is ponded for at least 2 months. See description in manual.</i> | | |
| Area seasonally ponded is > 1/2 total area of wetland | points = 4 | 2 |
| Area seasonally ponded is > 1/4 total area of wetland | points = 2 | |
| Area seasonally ponded is < 1/4 total area of wetland | points = 0 | |
| Total for D 1 | | |

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

| | | |
|--|----------------|---|
| D 2.0. Does the landscape have the potential to support the water quality function of the site? | | |
| D 2.1. Does the wetland unit receive stormwater discharges? | Yes = 1 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 | 0 |
| D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? | Yes = 1 No = 0 | 1 |
| Source <u>human habitation</u> | | |
| Total for D 2 | | 3 |

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

| | | |
|---|----------------|---|
| D 3.0. Is the water quality improvement provided by the site valuable to society? | | |
| D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? | Yes = 1 No = 0 | 0 |
| D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? | Yes = 1 No = 0 | 1 |
| D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? | Yes = 2 No = 0 | 0 |
| Total for D 3 | | 1 |

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

Kelsey Creek is 303(d) listed

Wetland name or number E2-1

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2
- Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1
- Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

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
- Marks of ponding less than 0.5 ft (6 in) points = 0

φ

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.

- The area of the basin is less than 10 times the area of the unit points = 5
- The area of the basin is 10 to 100 times the area of the unit points = 3
- The area of the basin is more than 100 times the area of the unit. points = 0
- Entire wetland is in the Flats class points = 5

West Trib basin is 1,000 acres

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 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. points = 2
- Surface flooding problems are in a sub-basin farther down-gradient. points = 1

Flooding from groundwater is an issue in the sub-basin. points = 1

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ points = 0

There are no problems with flooding downstream of the wetland. points = 0

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

φ

Total for D 6

Add the points in the boxes above

1

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number E2-1

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 2.31 acres 3 types present: points = 2
☐ Occasionally flooded or inundated 2 types present: points = 1
☒ Saturated only 0.36 ac 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

☐ Freshwater tidal wetland

2 points

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

5 - 19 species

< 5 species

points = 2

points = 1

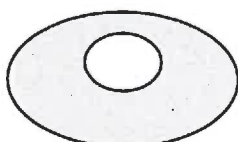
points = 0

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions 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.



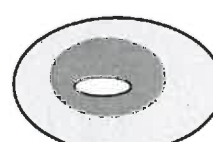
None = 0 points



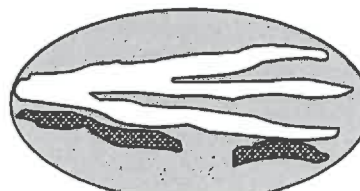
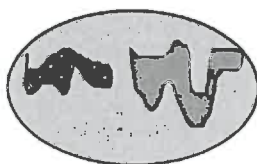
Low = 1 point



Moderate = 2 points



All three diagrams in this row are HIGH = 3 points



Wetland name or number E2-1

| | | |
|---|--|--|
| H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>) | | 2 |
| Total for H 1 | | |
| Rating of Site Potential If score is: <u>15-18 = H</u> <u>7-14 = M</u> <u>0-6 = L</u> | | Add the points in the boxes above <u>5</u> |

| | | |
|---|--|----|
| H 2.0. Does the landscape have the potential to support the habitat functions of the site? | | |
| H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0 | | 0 |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat <u>38.72</u> + [(% moderate and low intensity land uses)/2] <u>19.36</u> = <u>19.36</u> % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0 | | |
| H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use <u>61.28%</u> points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0 | | -2 |
| Total for H 2 | | -1 |

| | | |
|--|--|---|
| Rating of Landscape Potential If score is: <u>4-6 = H</u> <u>1-3 = M</u> <u>< 1 = L</u> | | Add the points in the boxes above <u>-1</u> |
| 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 <i>only the highest score that applies to the wetland being rated</i>. Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has <u>1</u> or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0 | | 1 |
| Rating of Value If score is: <u>2 = H</u> <u>1 = M</u> <u>0 = L</u> | | |

Wetland name or number E2-1

WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long. *in wetland 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 E2-1

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

| 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 Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt | |
| Yes – Go to SC 1.1 No = Not an estuarine wetland | |
| SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? | Yes = Category I No - Go to SC 1.2 |
| SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <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 unmowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Yes = Category I No = Category II |
| 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? SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? 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 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 – Go to SC 2.2 No – Go to SC 2.3 Yes = Category I No = Not a WHCV Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV 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 below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? 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? 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 – Go to SC 3.3 No – Go to SC 3.2 Yes – Go to SC 3.3 No = Is not a bog Yes = Is a Category I bog No – Go to SC 3.4 Yes = Is a Category I bog No = Is not a bog |

Wetland name or number E2-1

| | |
|--|--|
| <p>SC 4.0. Forested Wetlands</p> <p>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></p> <ul style="list-style-type: none"> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (<u>81 cm</u>) 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 (<u>53 cm</u>). <p>Yes = Category I No = Not a forested wetland for this section</p> | <p>Cat. I</p> |
| <p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ⅓ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) <p>Yes = Category I No = Category II</p> | <p>Cat. I</p> <p>Cat. II</p> |
| <p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p>Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)?</p> <p>Yes = Category I No – Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?</p> <p>Yes = Category II No – Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?</p> <p>Yes = Category III No = Category IV</p> | <p>Cat I</p> <p>Cat. II</p> <p>Cat. III</p> <p>Cat. IV</p> |
| <p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p> | <p>N/A</p> |

Path: K:\Projects_3\Hultt_Zollars\00329_12_ST_LightRail\mapdoc\Working_D_1_E2_1&E2_4_Cowardin_Plant_Classes.mxd; User: 34938; Date: 1/15/2015



Sources: Hydroperiods, ICF, 2014; Aerial Imagery, City of Bellevue, 2013.

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

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Sources: Hydroperiods, ICF, 2014; Aerial Imagery, City of Bellevue, 2013.

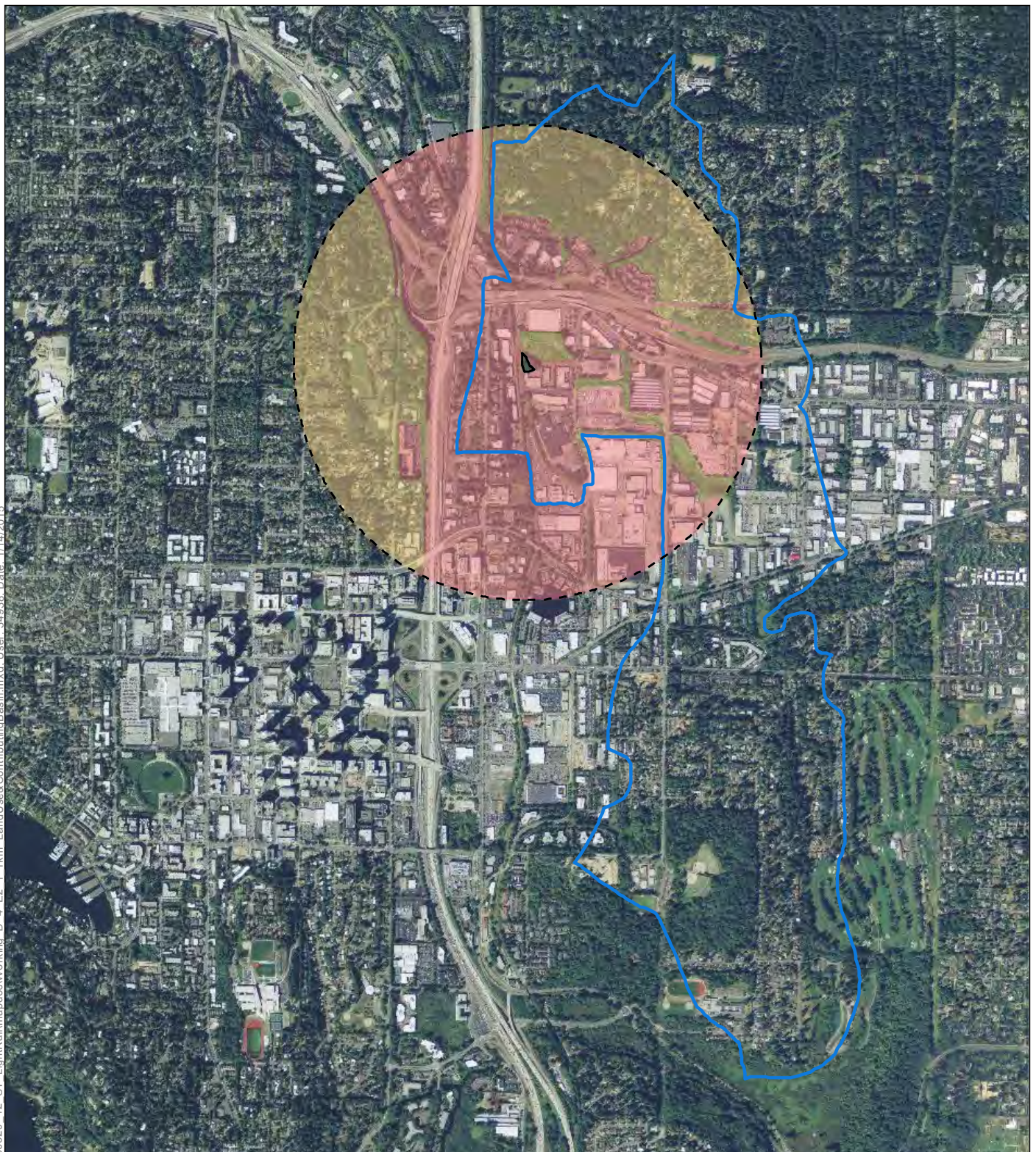
Figure D-2: E2-4 and E2-1 Hydroperiods
Ecosystems Technical Report






Sources: Hydroperiods, ICF, 2014; Aerial Imagery, City of Bellevue, 2013.



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

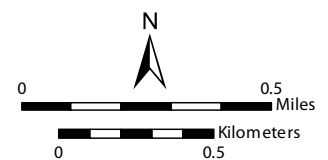
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Legend

-  1 km Wetland Buffer
-  E2-1 Estimated Wetland Extent
-  West Tributary of Kelsey Creek

- Land Use**
-  High Intensity Land Use
 -  Low to Moderate Intensity Land Use



Sources: Kelsey Creek Basin, City of Bellevue 2015;
Aerial Imagery, NAIP 2013.

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



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

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

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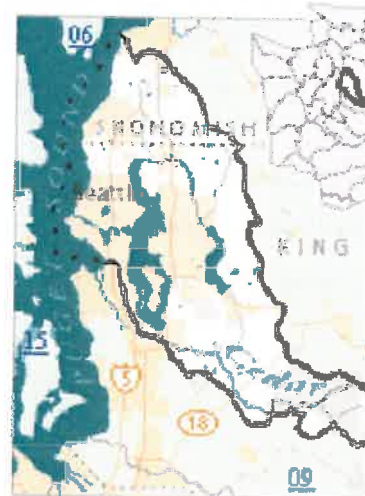
ITSOWATS Version:



[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > 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 | Tricia Shoblom 425-649-7288 |
| Bear-Evans Creek Basin | Fecal Coliform | Approved by EPA | Joan Nolan 425-649-4425 |
| | Dissolved Oxygen Temperature | Approved by EPA | |
| Cottage Lake | Total Phosphorus | Approved by EPA Has an implementation plan | Tricia Shoblom 425-649-7288 |
| Issaquah Creek Basin | Fecal Coliform | Approved by EPA | Joan Nolan 425-649-4425 |
| Little Bear Creek Tributaries: Trout Stream Great Dane Creek Cutthroat Creek | Fecal Coliform | Approved by EPA | Ralph Svrjcek 425-649-7036 |
| North Creek | Fecal Coliform | Approved by EPA Has an implementation plan | Ralph Svrjcek 425-649-7036 |

| | | | |
|---------------------|----------------|--|-------------------------------------|
| <u>Pipers Creek</u> | Fecal Coliform | Approved by EPA | <u>Joan Nolan</u> 425-649-4425 |
| <u>Swamp Creek</u> | Fecal Coliform | Approved by EPA Has an Implementation plan | <u>Ralph Svrcek</u> 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

* 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.

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Last updated January 2013

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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): BNSF NortheastDate of site visit: May 15, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | |
|----------------|---------------|
| Category I = | Score > 70 |
| Category II = | Score 51 - 69 |
| Category III = | Score 30 – 50 |
| Category IV = | Score < 30 |

Score for Water Quality Functions

14

Score for Hydrologic Functions

16

Score for Habitat Functions

10

TOTAL Score for Functions

40Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**III****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

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

☒ NO – go to 3

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

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

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 (2 m)?

☒ NO – go to 4

☐ YES – The 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 gradual*).

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**?

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

☐ NO – go to 5

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

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

☒ No – go to 8

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <u>16</u> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|--|---|--------------------------|------------------------------|--------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p><u>Vegetation structure</u> (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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input checked="" type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | 2 structures..... points = 1 | <input checked="" type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input checked="" type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p><u>Hydroperiods</u> (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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of hydroperiods</p> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p><u>Richness of Plant Species</u> (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 points = 2 <input type="checkbox"/> 5 – 19 species..... points = 1 <input checked="" type="checkbox"/> < 5 species points = 0 <input type="checkbox"/> List species below if you want to:</p> | <p>1</p> | | | | | | | | | | | | |
| H 1.4 | <p><u>Interspersion of Habitats</u> (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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p><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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> 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.</p> | <p>1</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>6</p> | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 6 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 10 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I <input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

Comments:

Wetland name or number E2-4

RATING SUMMARY – Western Washington

Name of wetland (or ID #): E2-4 Date of site visit: 12-15-14
Rated by Torrey Luiting Trained by Ecology? ☒ Yes ___ No Date of training 3/2007

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y ☒ N credit debit in 4/2015
NOTE: Form is not complete without the figures requested (figures can be combined).
Source of base aerial photo/map City of Bellevue 2013

OVERALL WETLAND CATEGORY II (based on functions ☒ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

Total Area 5.53 acres

- ___ 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 appropriate ratings | | | | |
| Site Potential | H <u>M</u> L | H <u>M</u> L | <u>H</u> M L | |
| Landscape Potential | <u>H</u> M L | <u>H</u> M L | H M <u>L</u> | |
| Value | H <u>M</u> L | H <u>M</u> L | H <u>M</u> L | TOTAL |
| Score Based on Ratings | <u>7</u> | <u>7</u> | <u>6</u> | <u>20</u> |

Score for each
function based
on three
ratings
(order of ratings
is not
important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

| CHARACTERISTIC | CATEGORY |
|------------------------------------|-------------------------------------|
| Estuarine | I II |
| Wetland of High Conservation Value | I |
| Bog | I |
| Mature Forest | I |
| Old Growth Forest | I |
| Coastal Lagoon | I II |
| Interdunal | I II III IV |
| None of the above | <input checked="" type="checkbox"/> |

Wetland name or number E2-4

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

| Map of: <u>E2-4</u> | 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 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

YES – The wetland class is **Depressional**

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

NO – go to 8

YES – The wetland class is **Depressional**

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

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

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

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

Wetland name or number _____

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 | 2 |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. | points = 2 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 1 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. | points = 1 | |
| D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0 | | |
| D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): | | |
| Wetland has persistent, ungrazed, plants > 95% of area | points = 5 | 5 |
| Wetland has persistent, ungrazed, plants > 1/2 of area | points = 3 | |
| Wetland has persistent, ungrazed plants > 1/10 of area | points = 1 | |
| Wetland has persistent, ungrazed plants < 1/10 of area | points = 0 | |
| D 1.4. Characteristics of seasonal ponding or inundation: | | |
| <i>This is the area that is ponded for at least 2 months. See description in manual.</i> | | |
| Area seasonally ponded is > 1/2 total area of wetland | points = 4 | 4 |
| Area seasonally ponded is > 1/4 total area of wetland | points = 2 | |
| Area seasonally ponded is < 1/4 total area of wetland | points = 0 | |
| Total for D 1 | | 11 |

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

| | | |
|--|----------------|---|
| D 2.0. Does the landscape have the potential to support the water quality function of the site? | | |
| D 2.1. Does the wetland unit receive stormwater discharges? | Yes = 1 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 | 0 |
| D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? | Yes = 1 No = 0 | 1 |
| Source <u>human encampments</u> | | |
| Total for D 2 | | 3 |

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

| | | |
|---|----------------|---|
| D 3.0. Is the water quality improvement provided by the site valuable to society? | | |
| D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? | Yes = 1 No = 0 | 0 |
| D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? | Yes = 1 No = 0 | 1 |
| D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? | Yes = 2 No = 0 | 0 |
| Total for D 3 | | 1 |

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

Kelsey Creek is 303(d) listed
Wetland not noted in stormwater plan as water quality function

Wetland name or number E2-4

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|----------|
| Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | <u>2</u> |
| Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet | points = 2 | |
| Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch | points = 1 | |
| Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing | points = 0 | |

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 | <u>5</u> |
| Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| The wetland is a "headwater" wetland | points = 3 | |
| Wetland is flat but has small depressions on the surface that trap water | points = 1 | |
| Marks of ponding less than 0.5 ft (6 in) | points = 0 | |

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 1,000 acres total majority is downstream of wetland*

- | | | |
|---|------------|----------|
| The area of the basin is less than 10 times the area of the unit | points = 5 | <u>3</u> |
| The area of the basin is 10 to 100 times the area of the unit | points = 3 | |
| The area of the basin is more than 100 times the area of the unit | points = 0 | |
| Entire wetland is in the Flats class | points = 5 | |

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 = <u>1</u> No = 0 | <u>1</u> |
| D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? | Yes = <u>1</u> No = 0 | <u>1</u> |
| 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 = <u>1</u> No = 0 | <u>1</u> |

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. | points = 2 | <u>1</u> |
| • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| Flooding from groundwater is an issue in the sub-basin. | points = 1 | |

The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____

points = 0

There are no problems with flooding downstream of the wetland.

points = 0

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

0

Total for D 6

Add the points in the boxes above

1

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

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

Wetland name or number E2-4

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.*

- | | |
|---|----------------------------------|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 |
| <input checked="" type="checkbox"/> Emergent 0.79 ac | 3 structures: points = 2 |
| <input checked="" type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) 2.31 ac | 2 structures: points = 1 |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) 2.4 ac | 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

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*).

- | | |
|--|-------------------------------------|
| <input checked="" type="checkbox"/> Permanently flooded or inundated 0.79 ac | 4 or more types present: points = 3 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated 2.31 ac | 3 types present: points = 2 |
| <input checked="" type="checkbox"/> Occasionally flooded or inundated 2.4 ac | 2 types present: points = 1 |
| <input type="checkbox"/> Saturated only | 1 type present: points = 0 |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points |

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft².

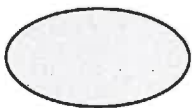
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

- | | |
|------------------------------|------------|
| If you counted: > 19 species | points = 2 |
| 5 - 19 species | points = 1 |
| < 5 species | points = 0 |

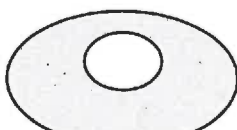
1

H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersions among Cowardin plant 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.*



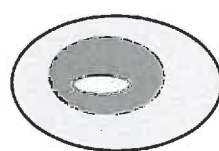
None = 0 points



Low = 1 point

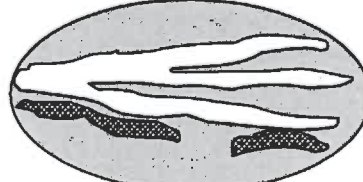
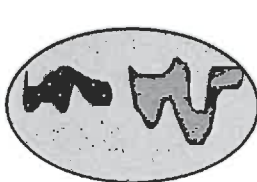


Moderate = 2 points



3

All three diagrams in this row are HIGH = 3 points



Wetland name or number E2-4

| | | |
|--|-----------------------------------|----|
| H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>) | | 5 |
| Total for H 1 | Add the points in the boxes above | 15 |
| Rating of Site Potential If score is: <u>15-18 = H</u> <u>7-14 = M</u> <u>0-6 = L</u> <i>Record the rating on the first page</i> | | |

| | | |
|---|-----------------------------------|----|
| 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 $\phi + [(\% \text{ moderate and low intensity land uses})/2]$ $\phi = \phi$ % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon <i>abutting land entirely developed</i> points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0 | | 0 |
| H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat $\phi + [(\% \text{ moderate and low intensity land uses})/2]$ $\phi = 20.29$ % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0 | | 1 |
| H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use <i>59.42% high intensity</i> points = (-2) ≤ 50% of 1 km Polygon is high intensity points = 0 | | -2 |
| Total for H 2 | Add the points in the boxes above | -1 |
| Rating of Landscape Potential If score is: <u>4-6 = H</u> <u>1-3 = M</u> <u>< 1 = L</u> <i>Record the rating on the first page</i> | | |

| | |
|--|--|
| H 3.0. Is the habitat provided by the site valuable to society? | |
| H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated. Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0 | |
| Rating of Value If score is: <u>2 = H</u> <u>1 = M</u> <u>0 = L</u> <i>Record the rating on the first page</i> | |

Wetland name or number _____

WDFW Priority Habitats

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

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

- **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. *edge of West trib to East of 120th Ave 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. *within Wetland 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 _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland name or number _____

| | |
|---|--|
| <p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1</u> contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of <u>32 in (81 cm) or more.</u> <i>no</i> — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). <p>Yes = Category I <u>No</u> = Not a forested wetland for this section</p> | <p>Cat. I</p> |
| <p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>Yes – Go to SC 5.1 <u>No</u> = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. — The wetland is larger than 1/10 ac (4350 ft²) <p>Yes = Category I No = Category II</p> | <p>Cat. I</p> <p>Cat. II</p> |
| <p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 <p>Yes – Go to SC 6.1 <u>No</u> = not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV</p> | <p>Cat I</p> <p>Cat. II</p> <p>Cat. III</p> <p>Cat. IV</p> |
| <p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p> | <p><i>NA</i></p> |

Path: K:\Projects_3\Hultt_Zollars\00329_12_ST_LightRail\mapdoc\Working_D_1_E2_1&E2_4_Cowardin_Plant_Classes.mxd; User: 34938; Date: 1/15/2015



Sources: Hydroperiods, ICF, 2014; Aerial Imagery, City of Bellevue, 2013.

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

Path: K:\Projects_3\Hult_Zollars\00329_12_ST_LightRail\mapdoc\Working_D_2_E2_1&E2_4_Hydroperiods.mxd; User: 34938; Date: 1/15/2015



Sources: Hydroperiods, ICF, 2014; Aerial Imagery, City of Bellevue, 2013.

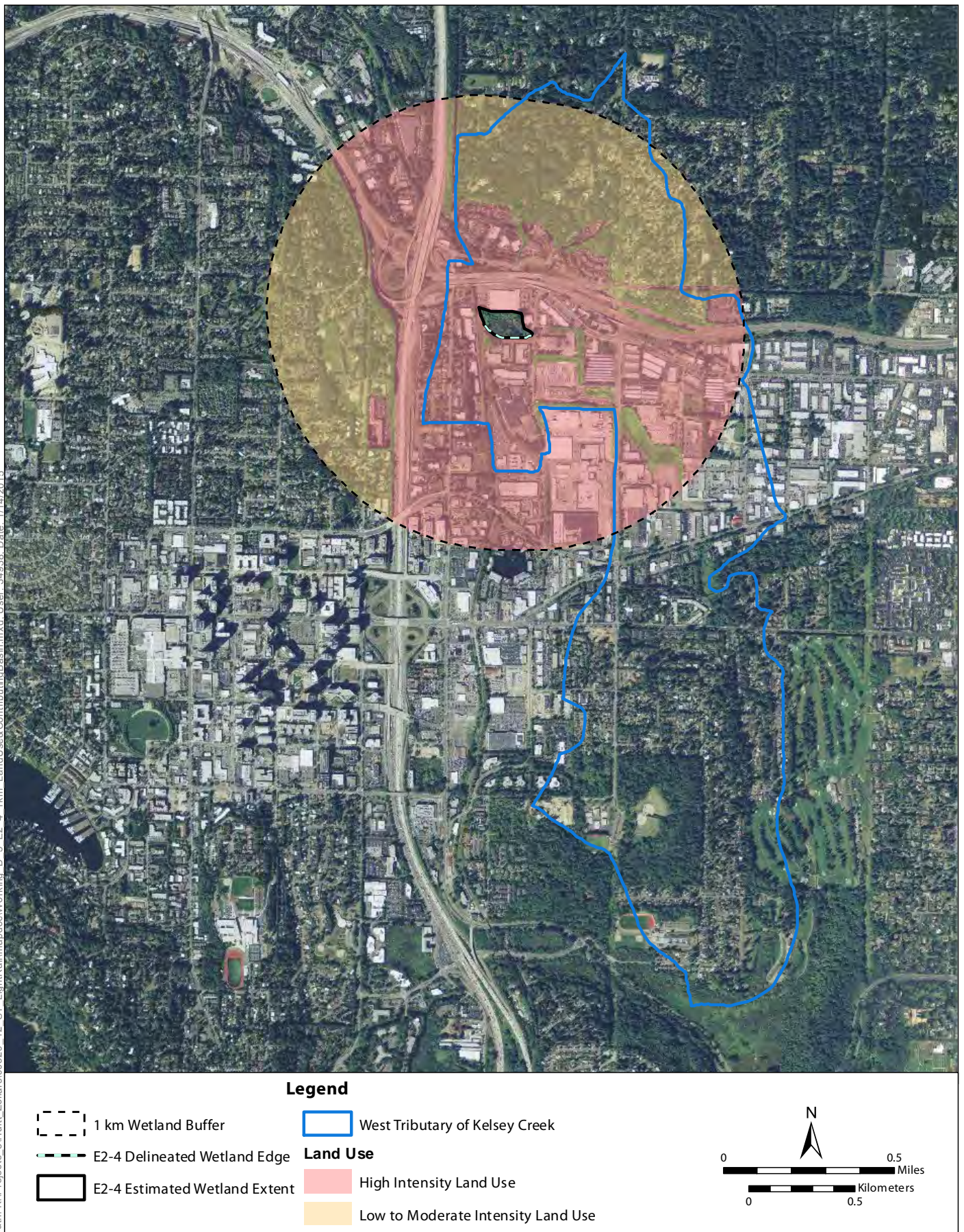
Figure D-2: E2-4 and E2-1 Hydroperiods
Ecosystems Technical Report



Sources: Hydroperiods, ICF, 2014; Aerial Imagery, City of Bellevue, 2013.

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

Path: K:\Projects_3\Hult_Zollars\00329_12_ST_LightRail\mapdoc\Working_D_5_E2_4_1km_LandUse&ContributingBasin.mxd; User: 34938; Date: 1/14/2015



Sources: Kelsey Creek Basin, City of Bellevue 2015;
Aerial Imagery, NAIP 2013.

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



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 | Parameter | Medium | Map Link |
|------------------------------|--------------------------|----------------------|--------------------------------|---------------------------|------------------------|--------------------------|
| 7026 | 5 | 8 - Cedar-Sammamish | KELSEY CREEK | Temperature | Water | 7026 |
| 12624 | 1 | 8 - Cedar-Sammamish | KELSEY CREEK | pH | Water | 12624 |
| 12674 | 5 | 8 - Cedar-Sammamish | KELSEY CREEK | Dissolved Oxygen | Water | 12674 |
| 13126 | 5 | 8 - Cedar-Sammamish | KELSEY CREEK | Bacteria | Water | 13126 |
| 13584 | 2 | 8 - Cedar-Sammamish | KELSEY CREEK | Copper | Water | 13584 |
| 13587 | 2 | 8 - Cedar-Sammamish | KELSEY CREEK | Mercury | Water | 13587 |
| 46931 | 5 | 8 - Cedar-Sammamish | KELSEY CREEK | Bacteria | Water | 46931 |
| 47987 | 2 | 8 - Cedar-Sammamish | KELSEY CREEK | Dissolved Oxygen | Water | 47987 |
| 51279 | 1 | 8 - Cedar-Sammamish | KELSEY CREEK | pH | Water | 51279 |

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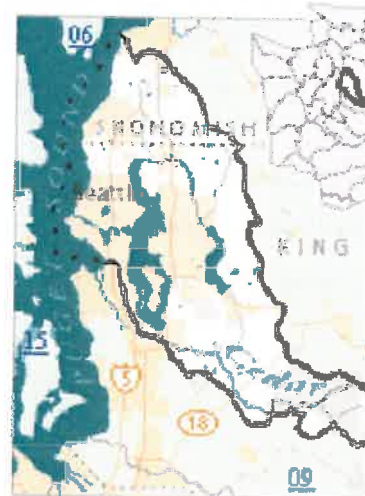
ITSOWATS Version:



[Water Quality Improvement](#) > [Water Quality Improvement Projects by WRIA](#) > 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 | Tricia Shoblom 425-649-7288 |
| Bear-Evans Creek Basin | Fecal Coliform | Approved by EPA | Joan Nolan 425-649-4425 |
| | Dissolved Oxygen Temperature | Approved by EPA | |
| Cottage Lake | Total Phosphorus | Approved by EPA Has an implementation plan | Tricia Shoblom 425-649-7288 |
| Issaquah Creek Basin | Fecal Coliform | Approved by EPA | Joan Nolan 425-649-4425 |
| Little Bear Creek Tributaries: Trout Stream Great Dane Creek Cutthroat Creek | Fecal Coliform | Approved by EPA | Ralph Svrjcek 425-649-7036 |
| North Creek | Fecal Coliform | Approved by EPA Has an implementation plan | Ralph Svrjcek 425-649-7036 |

| | | | |
|---------------------|----------------|--|-------------------------------------|
| <u>Pipers Creek</u> | Fecal Coliform | Approved by EPA | <u>Joan Nolan</u> 425-649-4425 |
| <u>Swamp Creek</u> | Fecal Coliform | Approved by EPA Has an Implementation plan | <u>Ralph Svrcek</u> 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

* 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.

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Last updated January 2013

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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): BNSF EastDate of site visit: February 14, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | |
|----------------|---------------|
| Category I = | Score > 70 |
| Category II = | Score 51 - 69 |
| Category III = | Score 30 – 50 |
| Category IV = | Score < 30 |

Score for Water Quality Functions

14

Score for Hydrologic Functions

16

Score for Habitat Functions

7

TOTAL Score for Functions

37Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**III****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

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

☒ NO – go to 3

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

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

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 (2 m)?

☒ NO – go to 4

☐ YES – The 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 gradual*).

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**?

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

☐ NO – go to 5

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

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

☒ No – go to 8

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| D Depressional and Flat Wetlands | | Points |
|---|--|--|
| WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality. | | (only 1 score per box) (see p.38) |
| D 1 | Does the wetland have the <u>potential</u> to improve water quality? | |
| D 1.1 | Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> Unit is a depression with no surface water leaving it (no outlet) points = 3 <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ... points = 2 <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) .. points = 1 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> (If ditch is not permanently flowing treat unit as “intermittently flowing”) Provide photo or drawing | Figure <input type="checkbox"/> 2 |
| D 1.2 | The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0 | 0 |
| D 1.3 | Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 <input type="checkbox"/> Map of Cowardin vegetation classes | Figure <input type="checkbox"/> 1 |
| D 1.4 | Characteristics of seasonal ponding or inundation: <i>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.</i> <ul style="list-style-type: none"> Area seasonally ponded is > 1/2 total area of wetland points = 4 <input checked="" type="checkbox"/> Area seasonally ponded is > 1/4 total area of wetland points = 2 <input type="checkbox"/> Area seasonally ponded is < 1/4 total area of wetland points = 0 <input type="checkbox"/> Map of Hydroperiods | Figure <input type="checkbox"/> 4 |
| Total for D 1 <i>Add the points in the boxes above</i> | | 7 |
| 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 the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 | (see p. 44) Multiplier 2 |
| ◆ TOTAL – Water Quality Functions <i>Multiply the score from D1 by D2; then add score to table on p. 1</i> | | 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 <ul style="list-style-type: none"> Unit is a depression with no surface water leaving it (no outlet) points = 4 <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 <input checked="" type="checkbox"/> Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> (If ditch is not permanently flowing treat unit as “intermittently flowing”) Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 | 2 |
| D 3.2 | Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <ul style="list-style-type: none"> Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 <input type="checkbox"/> The wetland is a “headwater” wetland..... points = 5 <input type="checkbox"/> Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 <input type="checkbox"/> Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 <input checked="" type="checkbox"/> Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water . points = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ft points = 0 <input type="checkbox"/> | 3 |
| D 3.3 | Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> The area of the basin is less than 10 times the area of unit..... points = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit..... points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit points = 0 <input type="checkbox"/> Entire unit is in the FLATS class points = 5 <input type="checkbox"/> | 3 |
| Total for D 3 <i>Add the points in the boxes above</i> | | 8 |

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <u>16</u> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | |
|---|---|---|-------------------------------------|--------------------------------|-------------------------------------|------------------------------|--------------------------|-----------------------------|-------------------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | |
| H 1.1 | <p><u>Vegetation structure</u> (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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input checked="" type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input checked="" type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>0</p> |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | | | | | | | |
| 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input checked="" type="checkbox"/> | | | | | | | |
| H 1.2 | <p><u>Hydroperiods</u> (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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only</p> <p>4 or more types present points = 3 <input type="checkbox"/> 3 or more types present points = 2 <input type="checkbox"/> 2 types present points = 1 <input checked="" type="checkbox"/> 1 type present points = 0 <input type="checkbox"/></p> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <p>Map of hydroperiods</p> | <p>Figure <input type="checkbox"/></p> <p>1</p> | | | | | | | | |
| H 1.3 | <p><u>Richness of Plant Species</u> (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.</p> <p>If you counted:</p> <table border="0"> <tr> <td>> 19 species..... points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5 – 19 species..... points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>< 5 species..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>List species below if you want to:</p> | > 19 species..... points = 2 | <input type="checkbox"/> | 5 – 19 species..... points = 1 | <input checked="" type="checkbox"/> | < 5 species..... points = 0 | <input type="checkbox"/> | <p>1</p> | | |
| > 19 species..... points = 2 | <input type="checkbox"/> | | | | | | | | | |
| 5 – 19 species..... points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | |
| < 5 species..... points = 0 | <input type="checkbox"/> | | | | | | | | | |
| H 1.4 | <p><u>Interspersion of Habitats</u> (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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>1</p> | | | | | | | | |
| H 1.5 | <p><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.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p>0</p> | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>3</p> | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i> Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 7 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 11 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I <input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

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): DP UHP qvjDate of site visit: May 15, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | | |
|------------------------------|-----------------------------------|-----------|
| Category I = Score > 70 | Score for Water Quality Functions | 14 |
| Category II = Score 51 - 69 | Score for Hydrologic Functions | 16 |
| Category III = Score 30 – 50 | Score for Habitat Functions | 10 |
| Category IV = Score < 30 | TOTAL Score for Functions | 40 |

Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**III****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
☒ NO – go to 3 ☐ YES – The wetland class is **Flats**
 If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 (2 m)?
☒ NO – go to 4 ☐ YES – The 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 gradual*).
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☒ The water leaves the wetland **without being impounded**?
 NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).*
☐ NO – go to 5 ☒ YES – The wetland class is **Slope**

5. Does the entire wetland 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 of 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 located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
☒ No – go to 8 ☐ YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <p><u>16</u></p> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|--|---|--------------------------|------------------------------|--------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p>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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input checked="" type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | 2 structures..... points = 1 | <input checked="" type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input checked="" type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p>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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of hydroperiods</p> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p>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 points = 2 <input type="checkbox"/> 5 – 19 species..... points = 1 <input checked="" type="checkbox"/> < 5 species points = 0 <input type="checkbox"/> List species below if you want to:</p> | <p>1</p> | | | | | | | | | | | | |
| H 1.4 | <p>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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points</p> <p>[riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p>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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> 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.</p> | <p>1</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>6</p> | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 6 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 10 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I</p> <p><input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I</p> <p><input type="checkbox"/></p> <p>Cat. II</p> <p><input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II</p> <p><input type="checkbox"/></p> <p>Cat. III</p> <p><input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

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): DPUHqwjy guvDate of site visit: April 23, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | | |
|------------------------------|-----------------------------------|-----------|
| Category I = Score > 70 | Score for Water Quality Functions | 14 |
| Category II = Score 51 - 69 | Score for Hydrologic Functions | 16 |
| Category III = Score 30 – 50 | Score for Habitat Functions | 12 |
| Category IV = Score < 30 | TOTAL Score for Functions | 42 |

Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**III****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

2. The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
☒ NO – go to 3 ☐ YES – The wetland class is **Flats**
 If your wetland can be classified as a “Flats” wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 (2 m)?
☒ NO – go to 4 ☐ YES – The 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 gradual*).
☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☒ The water leaves the wetland **without being impounded**?
 NOTE: *Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).*
☐ NO – go to 5 ☒ YES – The wetland class is **Slope**

5. Does the entire wetland 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 of 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 located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.
☒ No – go to 8 ☐ YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| D Depressional and Flat Wetlands | | Points |
|--|--|--|
| WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality. | | (only 1 score per box) (see p.38) |
| D 1 | Does the wetland have the <u>potential</u> to improve water quality? | |
| D 1.1 | Characteristics of surface water flows out of the wetland: <ul style="list-style-type: none"> Unit is a depression with no surface water leaving it (no outlet) points = 3 <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ... points = 2 <input checked="" type="checkbox"/> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) .. points = 1 <input type="checkbox"/> Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”) Provide photo or drawing</i> | Figure <input type="checkbox"/> 2 |
| D 1.2 | The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0 | 0 |
| D 1.3 | Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): <ul style="list-style-type: none"> Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 <input checked="" type="checkbox"/> Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 <input type="checkbox"/> Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 <input type="checkbox"/> Map of Cowardin vegetation classes | Figure <input type="checkbox"/> 3 |
| D 1.4 | Characteristics of seasonal ponding or inundation: <i>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.</i> <ul style="list-style-type: none"> Area seasonally ponded is > 1/2 total area of wetland points = 4 <input type="checkbox"/> Area seasonally ponded is > 1/4 total area of wetland points = 2 <input checked="" type="checkbox"/> Area seasonally ponded is < 1/4 total area of wetland points = 0 <input type="checkbox"/> Map of Hydroperiods | Figure <input type="checkbox"/> 2 |
| Total for D 1 | | 7 |
| 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 the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 | (see p. 44) Multiplier 2 |
| ◆ | TOTAL – Water Quality Functions | 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 <ul style="list-style-type: none"> Unit is a depression with no surface water leaving it (no outlet) points = 4 <input type="checkbox"/> Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 <input checked="" type="checkbox"/> Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> <ul style="list-style-type: none"> Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 | 2 |
| D 3.2 | Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> <ul style="list-style-type: none"> Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 <input type="checkbox"/> The wetland is a “headwater” wetland..... points = 5 <input type="checkbox"/> Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 <input type="checkbox"/> Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 <input checked="" type="checkbox"/> Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water . points = 1 <input type="checkbox"/> Marks of ponding less than 0.5 ft points = 0 <input type="checkbox"/> | 3 |
| D 3.3 | Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> The area of the basin is less than 10 times the area of unit..... points = 5 <input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit..... points = 3 <input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit points = 0 <input type="checkbox"/> Entire unit is in the FLATS class points = 5 <input type="checkbox"/> | 3 |
| Total for D 3 | | 8 |

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <p><u>16</u></p> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | |
|---|---|---|-------------------------------------|------------------------------|-------------------------------------|------------------------------|--------------------------|-----------------------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | |
| H 1.1 | <p><u>Vegetation structure</u> (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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>2</p> |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | | | | | | | |
| 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | |
| H 1.2 | <p><u>Hydroperiods</u> (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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <p>If you counted: 4 or more types present points = 3 <input type="checkbox"/> 3 or more types present points = 2 <input checked="" type="checkbox"/> 2 types present points = 1 <input checked="" type="checkbox"/> 1 type present points = 0 <input type="checkbox"/></p> <p>Map of hydroperiods</p> | <p>Figure <input type="checkbox"/></p> <p>1</p> | | | | | | | | |
| H 1.3 | <p><u>Richness of Plant Species</u> (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..... points = 2 <input type="checkbox"/> 5 – 19 species..... points = 1 <input checked="" type="checkbox"/> < 5 species..... points = 0 <input type="checkbox"/></p> <p>List species below if you want to:</p> | <p>1</p> | | | | | | | | |
| H 1.4 | <p><u>Interspersion of Habitats</u> (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.</p> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | |
| H 1.5 | <p><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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> 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.</p> | <p>2</p> | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>8</p> | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i> Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 8 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 12 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I <input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

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): North LakeDate of site visit: February 14, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☐ III ☒ IV

| | |
|----------------|---------------|
| Category I = | Score > 70 |
| Category II = | Score 51 - 69 |
| Category III = | Score 30 – 50 |
| Category IV = | Score < 30 |

Score for Water Quality Functions

8

Score for Hydrologic Functions

4

Score for Habitat Functions

10

TOTAL Score for Functions

22Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**IV****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

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

☒ NO – go to 3

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

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

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 (2 m)?

☒ NO – go to 4

☐ YES – The 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 gradual*).

☒ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☒ The water leaves the wetland **without being impounded**?

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

☐ NO – go to 5

☒ YES – The wetland class is **Slope**

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

☐ No – go to 8

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

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

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|---|---|-------------------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|-----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p>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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p>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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p>Lake-fringe wetland..... = 2 points Freshwater tidal wetland..... = 2 points</p> <p>Map of hydroperiods</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input checked="" type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p>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.</p> <p>If you counted:</p> <table border="0"> <tr> <td>> 19 species</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>< 5 species</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>List species below if you want to:</p> | > 19 species | points = 2 | <input type="checkbox"/> | 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | < 5 species | points = 0 | <input type="checkbox"/> | <p>1</p> | | | |
| > 19 species | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| < 5 species | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.4 | <p>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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p>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.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p>0</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>6</p> | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 6 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 10 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I</p> <p><input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I</p> <p><input type="checkbox"/></p> <p>Cat. II</p> <p><input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II</p> <p><input type="checkbox"/></p> <p>Cat. III</p> <p><input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

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): EgptcrNcngDate of site visit: February 14, 2013Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐Date of training: May 2007SEC: 29TOWNSHP: 24NRNGE: 5EIs S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATINGCategory based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | | |
|------------------------------|-----------------------------------|-----------|
| Category I = Score > 70 | Score for Water Quality Functions | 10 |
| Category II = Score 51 - 69 | Score for Hydrologic Functions | 20 |
| Category III = Score 30 – 50 | Score for Habitat Functions | 11 |
| Category IV = Score < 30 | TOTAL Score for Functions | 41 |

Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply**Final Category** (choose the “highest” category from above)**III****Summary of basic information about the wetland unit.**

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

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

☒ NO – go to 3

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

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

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 (2 m)?

☒ NO – go to 4

☐ YES – The 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 gradual*).

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**?

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

☐ NO – go to 5

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

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

☒ No – go to 8

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <p><u>20</u></p> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|--|---|-------------------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|-----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p>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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p>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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <p>Map of hydroperiods</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p>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.</p> <p>If you counted:</p> <table border="0"> <tr> <td>> 19 species</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>< 5 species</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>List species below if you want to:</p> | > 19 species | points = 2 | <input type="checkbox"/> | 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | < 5 species | points = 0 | <input type="checkbox"/> | <p>1</p> | | | |
| > 19 species | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| < 5 species | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.4 | <p>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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p>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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p>1</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | <p>Add the points in the column above</p> <p>7</p> | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|--|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 0 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 4 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 7 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 11 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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. <i>If you answer yes you will still need to rate the wetland based on its function.</i> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I <input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

Comments:

Wetland name or number Y gwꝑf "Uqwj "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

Name of wetland (if known): Uqwj "Ncng

Date of site visit: February 14, 2013

Rated by: C. Douglas & J. Pursley Trained by Ecology? Yes ☒ No ☐

Date of training: May 2007

SEC: 29

TOWNSHP: 24N

RNGE: 5E

Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure _____ Estimated size _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: ☐ I ☐ II ☒ III ☐ IV

| | | |
|------------------------------|-----------------------------------|----|
| Category I = Score > 70 | Score for Water Quality Functions | 14 |
| Category II = Score 51 - 69 | Score for Hydrologic Functions | 16 |
| Category III = Score 30 – 50 | Score for Habitat Functions | 13 |
| Category IV = Score < 30 | TOTAL Score for Functions | 43 |

Category based on SPECIAL CHARACTERISTICS of Wetland ☐ I ☐ II ☒ Does not apply

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

III

Summary of basic information about the wetland unit.

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

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) | YES | NO |
|--|--------------------------|-------------------------------------|
| SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 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.

Classification of Vegetated Wetlands for Western Washington

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

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

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

☒ NO – go to 3

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

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

3. Does the entire wetland 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) where at least 20 acres (8ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 (2 m)?

☒ NO – go to 4

☐ YES – The 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 gradual*).

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**?

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

☐ NO – go to 5

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

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

☒ No – go to 8

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

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

| D Depressional and Flat Wetlands | | Points |
|--|---|---|
| WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality. | | (only 1 score per box) (see p.38) |
| D 1 | Does the wetland have the <u>potential</u> to improve water quality? | |
| 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 <input type="checkbox"/> • Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet ... points = 2 <input checked="" type="checkbox"/> • Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) .. points = 1 <input type="checkbox"/> • Unit is a “flat” depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> Provide photo or drawing | Figure <input type="checkbox"/> 2 |
| D 1.2 | The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) 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 points = 5 <input type="checkbox"/> • Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 <input checked="" type="checkbox"/> • Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 <input type="checkbox"/> • Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 <input type="checkbox"/> Map of Cowardin vegetation classes | Figure <input type="checkbox"/> 3 |
| D 1.4 | Characteristics of seasonal ponding or inundation: <i>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.</i> • Area seasonally ponded is > 1/2 total area of wetland points = 4 <input type="checkbox"/> • Area seasonally ponded is > 1/4 total area of wetland points = 2 <input checked="" type="checkbox"/> • Area seasonally ponded is < 1/4 total area of wetland points = 0 <input type="checkbox"/> Map of Hydroperiods | Figure <input type="checkbox"/> 2 |
| Total for D 1 <i>Add the points in the boxes above</i> | | 7 |
| 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 the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i> <input type="checkbox"/> Grazing in the wetland or within 150 ft <input checked="" type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft. of wetland <input type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft. of wetland <input type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 | (see p. 44) Multiplier 2 |
| ◆ | 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. | | (see p.46) |
| 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 • Unit is a depression with no surface water leaving it (no outlet) points = 4 <input type="checkbox"/> • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 <input checked="" type="checkbox"/> • Unit is a “flat” depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch..... points = 1 <input type="checkbox"/> <i>(If ditch is not permanently flowing treat unit as “intermittently flowing”)</i> • Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0 | 2 |
| D 3.2 | Depth of storage during wet periods. <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 <input type="checkbox"/> • The wetland is a “headwater” wetland..... points = 5 <input type="checkbox"/> • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 <input type="checkbox"/> • Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 <input checked="" type="checkbox"/> • Wetland is flat (yes to Q.2 or Q.7 on key) but has small depressions on the surface that trap water . points = 1 <input type="checkbox"/> • Marks of ponding less than 0.5 ft points = 0 <input type="checkbox"/> | 3 |
| D 3.3 | Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> • The area of the basin is less than 10 times the area of unit..... points = 5 <input type="checkbox"/> • The area of the basin is 10 to 100 times the area of the unit..... points = 3 <input checked="" type="checkbox"/> • The area of the basin is more than 100 times the area of the unit points = 0 <input type="checkbox"/> • Entire unit is in the FLATS class points = 5 <input type="checkbox"/> | 3 |
| Total for D 3 <i>Add the points in the boxes above</i> | | 8 |

| | | |
|------------|---|---|
| D 4 | <p>Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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></p> <p> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ </p> <p> <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1 </p> | <p>(see p. 49)</p> <p>Multiplier</p> <p>2</p> |
| ◆ | <p>TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i></p> | <p><u>16</u></p> |

Comments: _____

| These questions apply to wetlands of all HGM classes. | | Points (only 1 score per box) | | | | | | | | | | | | |
|---|---|---|-------------------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|-----------------------------|--------------------------|---|-----------------|------------|--------------------------|---|
| HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat. | | | | | | | | | | | | | | |
| H 1 | Does the wetland have the potential to provide habitat for many species? | | | | | | | | | | | | | |
| H 1.1 | <p><u>Vegetation structure</u> (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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.</p> <p>Add the number of vegetation types that qualify. If you have:</p> <table border="0"> <tr> <td>4 structures or more..... points = 4</td> <td><input type="checkbox"/></td> <td>3 structures..... points = 2</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2 structures..... points = 1</td> <td><input type="checkbox"/></td> <td>1 structure..... points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>Map of Cowardin vegetation classes</p> | 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | |
| 4 structures or more..... points = 4 | <input type="checkbox"/> | 3 structures..... points = 2 | <input checked="" type="checkbox"/> | | | | | | | | | | | |
| 2 structures..... points = 1 | <input type="checkbox"/> | 1 structure..... points = 0 | <input type="checkbox"/> | | | | | | | | | | | |
| H 1.2 | <p><u>Hydroperiods</u> (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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input checked="" type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland..... = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points</p> <p>Map of hydroperiods</p> <table border="0"> <tr> <td>4 or more types present</td> <td>points = 3</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>1 type present</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> | 4 or more types present | points = 3 | <input type="checkbox"/> | 3 or more types present | points = 2 | <input type="checkbox"/> | 2 types present | points = 1 | <input checked="" type="checkbox"/> | 1 type present | points = 0 | <input type="checkbox"/> | <p>Figure <input type="checkbox"/></p> <p>1</p> |
| 4 or more types present | points = 3 | <input type="checkbox"/> | | | | | | | | | | | | |
| 3 or more types present | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 2 types present | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| 1 type present | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.3 | <p><u>Richness of Plant Species</u> (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.</p> <p>If you counted:</p> <table border="0"> <tr> <td>> 19 species</td> <td>points = 2</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5 – 19 species.....</td> <td>points = 1</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>< 5 species</td> <td>points = 0</td> <td><input type="checkbox"/></td> </tr> </table> <p>List species below if you want to:</p> | > 19 species | points = 2 | <input type="checkbox"/> | 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | < 5 species | points = 0 | <input type="checkbox"/> | <p>1</p> | | | |
| > 19 species | points = 2 | <input type="checkbox"/> | | | | | | | | | | | | |
| 5 – 19 species..... | points = 1 | <input checked="" type="checkbox"/> | | | | | | | | | | | | |
| < 5 species | points = 0 | <input type="checkbox"/> | | | | | | | | | | | | |
| H 1.4 | <p><u>Interspersion of Habitats</u> (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.</p> <div style="text-align: center;"> <p>None = 0 points Low = 1 point Moderate = 2 points High = 3 points [riparian braided channels]</p> </div> <p>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.</p> | <p>Figure <input type="checkbox"/></p> <p>2</p> | | | | | | | | | | | | |
| H 1.5 | <p><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.</p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> 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) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p>2</p> | | | | | | | | | | | | |
| H 1 TOTAL Score – potential for providing habitat | | 8 | | | | | | | | | | | | |

| H 2 | Does the wetland have the <u>opportunity</u> to provide habitat for many species? | (only 1 score per box) |
|-----|--|---|
| | <p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)..... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above points = 1</p> <p style="text-align: right;">Arial photo showing buffers</p> | <p>Figure <input type="checkbox"/></p> <p style="text-align: center;">1</p> |
| | <p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least 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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input type="checkbox"/> YES = 4 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.2</p> <p>H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input checked="" type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input checked="" type="checkbox"/> NO = 0 points</p> | <p style="text-align: center;">0</p> |

Comments: _____

| | | |
|---|---|----|
| | <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW</u> (see p. 82): <i>(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</i></p> <p>Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife <i>(full descriptions in WDFW PHS report p. 152).</i></p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important <i>(full descriptions in WDFW PHS report p. 158).</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie <i>(full descriptions in WDFW PHS report p. 161).</i></p> <p><input type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. <i>(full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).</i></p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input checked="" type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="text-align: right;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p>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)</p> | 1 |
| | <p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 <input type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed. points = 3 <input checked="" type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile..... points = 0 <input type="checkbox"/> | 3 |
| | <p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 5 |
| | <p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p> | 8 |
| ◆ | <p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p> | 13 |

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? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt. <input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO | |
| | SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = go to SC 1.2 | Cat. I <input type="checkbox"/> |
| | SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? <input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. <input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland <input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. | Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/> Dual Rating I/II <input type="checkbox"/> |
| SC2 | Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) <input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site <input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland | Cat I <input type="checkbox"/> |
| 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating | Cat. I <input type="checkbox"/> |

| | | |
|-----|--|--|
| SC4 | <p>Forested Wetlands (see p. 90)</p> <p>Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p> | <p>Cat. I <input type="checkbox"/></p> |
| SC5 | <p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing) and has less than 20% cover of invasive plant species (see list of invasive species on p. 74).</p> <p><input type="checkbox"/> At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input type="checkbox"/> NO = Category II</p> | <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> |
| SC6 | <p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula -- lands west of SR 103 • Grayland-Westport -- lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input type="checkbox"/> NO = go to SC 6.2</p> <p>SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p><input type="checkbox"/> YES = Category III</p> | <p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p> |
| ◆ | <p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p> | <p>NA</p> |

Comments:

Wetland name or number Lake Bellevue

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 visit: 4/9/13

Rated by Joseph R. Pursley Trained by Ecology? Yes ☒ No ☐ Date of training May 07'

SEC: 29 TOWNSHIP: 24N RANGE: 5E Is S/T/R in Appendix D? Yes ☐ No ☒

Map of wetland unit: Figure Estimated size 9.0 acres

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I ☐ II ☐ III ☒ IV ☐

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

| | |
|-----------------------------------|-----------|
| Score for Water Quality Functions | 2 |
| Score for Hydrologic Functions | 16 |
| Score for Habitat Functions | 12 |
| TOTAL score for Functions | 30 |

Category based on SPECIAL CHARACTERISTICS of wetland

I ☐ II ☐ Does not Apply ☒

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

III

Summary of basic information about the wetland unit

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

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

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

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

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.

1. Are 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.).

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 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. 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 classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. **NOTE:** Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

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

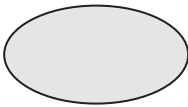
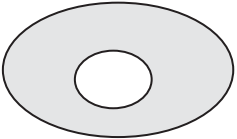
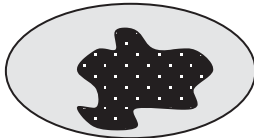
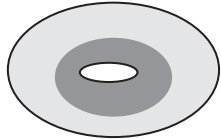
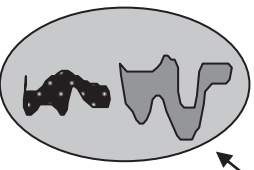
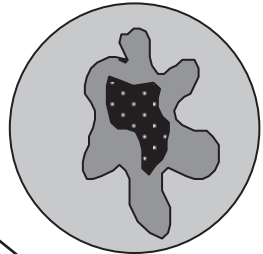
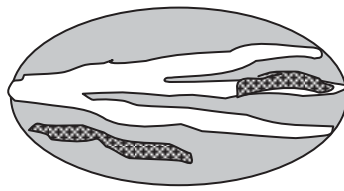
If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as **Depressional** for the rating.

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

| D Depressional and Flats Wetlands | | Points (only 1 score per box) |
|--|--|---|
| HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation | | |
| | D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion? | (see p.46) |
| D | <p>D 3.1 Characteristics of surface water flows out of the wetland unit</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 4</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>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</p> <p>(If ditch is not permanently flowing treat unit as "intermittently flowing")</p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</p> | 0 |
| D | <p>D 3.2 Depth of storage during wet periods</p> <p><i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i></p> <p>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</p> <p>The wetland is a "headwater" wetland points = 5</p> <p>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5</p> <p>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3</p> <p>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1</p> <p>Marks of ponding less than 0.5 ft points = 0</p> | 3 |
| D | <p>D 3.3 Contribution of wetland unit to storage in the watershed</p> <p><i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i></p> <p>The area of the basin is less than 10 times the area of unit points = 5</p> <p>The area of the basin is 10 to 100 times the area of the unit points = 3</p> <p>The area of the basin is more than 100 times the area of the unit points = 0</p> <p>Entire unit is in the FLATS class points = 5</p> | 5 |
| D | Total for D 3 <i>Add the points in the boxes above</i> | 8 |
| D | <p>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>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.</p> <p><i>Note which of the following indicators of opportunity apply.</i></p> <p><input checked="" type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems</p> <p><input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems</p> <p><input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems</p> <p><input type="checkbox"/> Other _____</p> <p>YES multiplier is 2 NO multiplier is 1</p> | (see p. 49) |
| D | TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4 <i>Add score to table on p. 1</i> | multiplier 2 16 |

| These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat | | Points (only 1 score per box) |
|--|--|--|
| H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species? | | |
| H 1.1 <u>Vegetation structure</u> (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. <input checked="" type="checkbox"/> Aquatic bed <input type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input type="checkbox"/> Forested (areas where trees have >30% cover) If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon Add the number of vegetation structures that qualify. If you have: <div style="display: flex; justify-content: space-between;"> <div> Map of Cowardin vegetation classes </div> <div> 4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0 </div> </div> | | Figure 0 |
| H 1.2. <u>Hydroperiods</u> (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) <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Permanently flooded or inundated <input type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points </div> <div> 4 or more types present points = 3 3 types present points = 2 2 types present point = 1 1 type present points = 0 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points </div> <div> Map of hydroperiods </div> </div> | | Figure 2 |
| H 1.3. <u>Richness of Plant Species</u> (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 points = 2 5 - 19 species points = 1 < 5 species points = 0 List species below if you want to: | | |

Total for page 3

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| <p>H 1.4. Interspersion of habitats (<i>see p. 76</i>)</p> <p>Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="text-align: center;">     </div> <div style="text-align: center;">    </div> <p style="text-align: center;">[riparian braided channels]</p> <p style="text-align: center;">NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p> | <p>Figure _____</p> <p style="text-align: center;">1</p> |
| <p>H 1.5. Special Habitat Features: (<i>see p. 77</i>)</p> <p>Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet turned grey/brown</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants</p> <p style="text-align: center;">NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p> | <p style="text-align: center;">1</p> |
| <p style="text-align: center;">H 1. TOTAL Score - potential for providing habitat</p> <p style="text-align: center;"><i>Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</i></p> | <p style="text-align: center;">5</p> |

Comments

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| H 2. Does the wetland unit have the opportunity to provide habitat for many species? | |
| <p>H 2.1 Buffers (<i>see p. 80</i>) <i>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."</i></p> <ul style="list-style-type: none"> — 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 <input checked="" type="checkbox"/> 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 <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> — 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 Points = 0. <input checked="" type="checkbox"/> Buffer does not meet any of the criteria above. Points = 1 <p style="text-align: right;">Aerial photo showing buffers</p> | <p>Figure _____</p> <p style="text-align: center;">1</p> |
| <p>H 2.2 Corridors and Connections (<i>see p. 81</i>)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>).</p> <p style="text-align: center;">YES = 4 points (<i>go to H 2.3</i>) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = 2 points (<i>go to H 2.3</i>) NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> 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? <p style="text-align: center;">YES = 1 point NO = 0 points</p> | <p style="text-align: center;">0</p> |

Total for page 1

| | |
|--|----------|
| <p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)</u></p> <p>Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>).</p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> 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. (<u>Mature forests</u>) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (<i>full descriptions in WDFW PHS report p. 158</i>).</p> <p><input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (<i>full descriptions in WDFW PHS report p. 161</i>).</p> <p><input checked="" type="checkbox"/> Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.</p> <p><input type="checkbox"/> Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (<i>full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A</i>).</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.</p> <p style="padding-left: 40px;">If wetland has 3 or more priority habitats = 4 points</p> <p style="padding-left: 40px;">If wetland has 2 priority habitats = 3 points</p> <p style="padding-left: 40px;">If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p><i>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)</i></p> | <p>3</p> |
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Wetland name or number Lake Bellevue

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| <p>H 2.4 Wetland Landscape (<i>choose the one description of the landscape around the wetland that best fits</i>) (<i>see p. 84</i>)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p> | 3 |
| <p>H 2. TOTAL Score - opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p> | 7 |
| <p>TOTAL for H 1 from page 14</p> | 5 |
| <p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p> | 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 |
|---|--|
| <p><i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i></p> <p>SC 1.0 Estuarine wetlands (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <ul style="list-style-type: none"> — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. <p>YES = Go to SC 1.1 NO <u>X</u></p> | |
| <p>SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?</p> <p>YES = Category I X NO go to SC 1.2</p> | Cat. I |
| <p>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</p> <ul style="list-style-type: none"> — 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 <i>Spartina</i> would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of <i>Spartina</i> in determining the size threshold of 1 acre. — 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 |

| | |
|--|----------------------|
| <p>SC 2.0 Natural Heritage Wetlands (<i>see p. 87</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.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (<i>this question is used to screen out most sites before you need to contact WNHP/DNR</i>) S/T/R information from Appendix D <u>X</u> or accessed from WNHP/DNR web site ____</p> <p>YES ____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO <u>X</u></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO <u>X</u> not a Heritage Wetland</p> | <p>Cat. I</p> |
| <p>SC 3.0 Bogs (<i>see p. 87</i>) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>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</p> <p>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</p> <p>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.</p> <p>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)?</p> <p>2. YES = Category I No <u>X</u> Is not a bog for purpose of rating</p> | <p>Cat. I</p> |

| | |
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| <p>SC 4.0 Forested Wetlands (<i>see p. 90</i>)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <ul style="list-style-type: none"> — Old-growth forests: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. <p>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.</p> <ul style="list-style-type: none"> — 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 than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. <p>YES = Category I NO <u>X</u> not a forested wetland with special characteristics</p> | <p>Cat. I</p> |
| <p>SC 5.0 Wetlands in Coastal Lagoons (<i>see p. 91</i>)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <ul style="list-style-type: none"> — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) <p>YES = Go to SC 5.1 NO <u>X</u> not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meets all of the following three conditions?</p> <ul style="list-style-type: none"> — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of 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) <p>YES = Category I X NO = Category II</p> | <p>Cat. I</p> <p>Cat. II</p> |

| | |
|---|--|
| <p>SC 6.0 Interdunal Wetlands (<i>see p. 93</i>)</p> <p>Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p>YES - go to SC 6.1 NO <u>X</u> not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • Long Beach Peninsula- lands west of SR 103 • Grayland-Westport- lands west of SR 105 • Ocean Shores-Copalis- lands west of SR 115 and SR 109 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger?</p> <p>YES = Category II X NO – go to SC 6.2</p> <p>SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?</p> <p>YES = Category III</p> | <p></p> <p>Cat. II</p> <p>Cat. III</p> |
| <p>Category of wetland based on Special Characteristics</p> <p><i>Choose the “highest” rating if wetland falls into several categories, and record on p. 1.</i></p> <p>If you answered NO for all types enter “Not Applicable” on p.1</p> | <p></p> |

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

