WETLAND DELINEATION UPDATE

Port Ludlow, Olympic Terrace II Jefferson County, Washington

May 17, 2017

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Wetland & Aquatic Sciences Wildlife Ecology Landscape Architecture

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EXECUTIVE SUMMARY

This report documents the results of our 2017 investigation to verify, update, and describe wetlands located at the vicinity of the southern side of the Port Ludlow - Olympic Terrace property in unincorporated Jefferson County, Washington (Figure 1). Figure 1 depicts the limits of this follow-up investigation. The results are to be used for planning purposes of the proposed development known as the Olympic Terrace II - Phase II area which is a portion of the overall Port Ludlow - Olympic Terrace property.

This report summarizes the updated wetland and stream boundaries including findings of recently established wetlands, streams, and habitats nearest the Olympic Terrace II - Phase II project area. Raedeke Associates, Inc. performed extensive baseline investigations for wetlands and streams within the Olympic Terrace Plat property from June through July of 2000 that are the basis of this investigation. During the current field investigations, we identified seven wetlands and two streams. Since wetlands are dynamic areas with boundaries that often change, five wetland boundaries identified in the previous baseline investigations were re-delineated as part of this work. Only the boundaries nearest the proposed development associated with the Olympic Terrace II – Phase II project area were flagged, and two additional wetland areas were identified during this investigation. For planning purposes, this report includes detailed summaries of our field investigations performed to identify and delineate wetlands as required by State law and in general accordance with Jefferson County Code Title 18 Unified Development Code Chapter 18.22 Critical Areas wetland analysis and reporting requirements.

1.0 INTRODUCTION

1.1 STATEMENT OF PURPOSE

This report documents the results of our March 2017 investigation of the Olympic Terrace II - Phase II property area in Jefferson County, Washington (Figure 1). Raedeke Associates, Inc. conducted extensive investigations of wetlands and streams on the overall Olympic Terrace property these are documented in our wetland assessment report prepared September 28, 2000 (Raedeke Associates, Inc. 2000), The purpose of our investigation was to update and document the current extent and condition of wetlands, streams, and critical habitat areas within or in the vicinity of the current project area.

To date, the delineations and ratings for the wetlands within the site have not been confirmed by Jefferson County staff. However, this report was prepared in general accordance with Jefferson County Code Title 18 Unified Development Code Chapter 18.22 Critical Areas Article VIII Special Reports 18.22.450 wetland analysis reporting requirements for planning purposes and may be used to verify the delineations, wetland ratings, and buffers for the site.

1.2 STUDY AREA

The site study area encompasses the southeastern portion, totaling approximately 19.2-acres, of the of the 125-acre Olympic Terrace property investigated during our baseline investigations. It is located in a portion of the southern half of Section 21, Township 28 North, Range 1 East, W.M., in unincorporated Jefferson County, Washington. Specifically, the site study area is located directly south and west of the Woodridge II plat, Olympic Terrace I, and consists of Jefferson County Parcel identification numbers 978802504 (8.1 acres), 978802503 (5.6 acres), and 978802502 (5.8 acres). The approximate 19.2-acre study area boundary, referenced herein as the site, is formed by Olympic Terrace I and Mount Wilder road to the north, and Mount Constance Way road and residential homes to the east. The southern site boundary is formed by the southern extent of Section 21, which was evident as an old logging road and an abrupt harvest boundary within the forest. The western extent of the site is formed by the unimproved access road that parallels the eastern boundary of the Port Ludlow golf course. The 125-acre Olympic Terrace property that was the subject of our baseline investigations extends further north, west, east, and southwest of the current site.

Property boundaries, wetland flagging, and topography were surveyed and provided by ESM Consulting Engineers, LLC. Drawings received by our office on March 27, 2017 depict the wetland and stream delineation services that are the subject of this report.

2.0 METHODS

2.1 WETLAND DELINEATION

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions, including Jefferson County.

Hydrophytic vegetation is defined as "macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (Lichvar, et al. 2016). The WIS ratings "reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species" (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as "a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches

below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as drift lines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

2.2 ORDINARY HIGH WATER MARK DELINEATION

We based our delineation of the ordinary high water mark (OHWM) for streams within the Phase II area on definitions provided under the Washington State Shorelines Management Act of 1971. The Washington State definition for the OHWM is as follows:

Ordinary high water line" or "OHWL" means the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in ordinary years, as to mark upon the soil or vegetation a character distinct from that of the abutting upland, provided that in any area where the ordinary high water line cannot be found, the ordinary high water line adjoining saltwater shall be the line of mean higher high water, and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood."...(RCW 90.58.030(2)(b) and WAC173-22-030(5); WDOE 1994).

As outlined in the Washington Department of Ecology (WDOE 1994) Shoreline Administrators Manual, the general guidelines for determining the OHWM include: (1) a clear vegetation mark; (2) wetland/upland edge; (3) elevation; (4) a combination of changes in vegetation, elevation, and landward limit of drift deposition; (5) soil surface changes from algae or sediment deposition to areas where soils show no sign of depositional processes; and/or (6) soil profile changes from wetter conditions (low chroma, high soil organic matter, and lack of mottling) to drier conditions (higher chroma, less organic matter, or brighter mottles).

2.3 BACKGROUND REVIEW

In preparation for our site investigations, we collected maps and information from the U.S. Fish and Wildlife (USFWS 2016) National Wetlands Inventory (NWI), the U.S.D.A. Natural Resource Conservation Service (NRCS 2017) Soil Survey, Washington Department of Natural Resources (2017) Forest Practices Base Maps, Washington Department of Fish and Wildlife (2017) Priority Habitats and Species (PHS) on-line mapper, and the Jefferson County (2011) Public GIS maps. We examined current and historical aerial photographs (Google Earth 2016) and United States Geological Survey 7.5-Minute Topographic maps (USGS 2017) to assist in the definition of existing plant communities, drainage patterns, and land use. Finally, we also reviewed our baseline

investigations that we completed in June and July of 2000 (Raedeke Associates, Inc. 2000) in the vicinity of the site.

The results of our background review identified four wetland areas within the vicinity of our site per the results of our baseline investigations, two to three streams per NWI maps, two wetland areas per Jefferson County wetland inventory maps, primarily non-hydric soils per NRCS soil survey information, cutthroat trout PHS listed fish species, and large forested areas within topography of peaks, terraces, and valleys per Google Earth aerial imagery and United States Geologic Survey 7.5-Minute topographic maps.

2.4 FIELD SAMPLING PROCEDURES AND DATA ANALYSIS

Raedeke Associates, Inc. staff visited the Olympic Terrace project area on March 1, 2017. We examined depressions, topographically low areas, and the base of steep slopes where wetlands may occur as identified on topographic maps and aerial photograph interpretation. In addition, we walked through the study area systematically along transects to search the study area for the presence of areas that could have hydrophytic vegetation, hydric soil, and positive indicators of wetland hydrology.

Vegetation, soils, and hydrology were examined in representative portions of the investigated area according to the procedures described in the COE Wetlands Delineation Manual (Environmental Laboratory 1987). Areas investigated were examined per the 1987 Manual as updated by the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (1976), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (Lichvar et. al. 2016). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the 1987 Manual (Environmental Laboratory 1987), U.S. Army Corps of Engineers Special Notice (1991a, (1991b, 1992, 1994), as updated by the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community, as described in the Regional Supplement (COE 2010), may also be required. Wetlands delineated prior to and after the COE 2010 regional supplement were delineated in general accordance with the applicable delineation requirements at the time of the delineation.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color

2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology for wetland.

During these most recent investigations in 2017, the four wetland areas delineated before the COE 2010 supplement were examined per the COE 2010 requirements to determine if previously delineated areas still met the characteristics of a wetland.

3.0 EXISTING CONDITIONS

3.1 GENERAL PROPERTY DESCRIPTION

The project site is located south of Paradise Bay Road within the Port Ludlow community in the northeastern part of the Olympic Pennisula on the northern tip of the Kitsap Peninsula (Figure 1). The property ranges from about 270 to 390 feet in elevation. The western half of the site generally drains to the southwest and westerly direction while the eastern half generally drains to the north. Vegetation on the site is a mosaic of second or third generation forests following timber harvest and replanting.

The Phase I area of the Olympic Terrace property is currently under development. The Phase II portions of the site remain undeveloped.

3.2 WETLAND DESCRIPTIONS

Raedeke Associates, Inc. identified seven wetlands totaling approximately 1.6 acres and two streams within the study area (Figure 2). These include a riverine wetland (Wetland A) associated with an unnamed stream (Stream 1) located on the western half of the site and forested wetland depressions (Wetlands C, D, E, F, Y, and Z) and a stream (Stream 6).

Table 1 lists all seven wetlands within the site area and provides their locations. Table 2 provides a summary of each wetland's approximate size, Cowardin et al. (1992) vegetation class, and hydrogeomorphic class. Table 3 provides a summary of updated wetland ratings, per the current WDOE rating system (Hruby 2014), and the probable buffer width per Jefferson County (2016) code for each wetland.

As part of our most recent site investigations, we revisited 5 of the 13 previously-delineated wetlands in order to verify the accuracy of their boundaries. Where necessary, we adjusted the boundaries to reflect current site conditions. We understand that all proposed development activities are located on the interior portions of the project parcels. Therefore, for this study, we updated only the wetland boundaries nearest the proposed project development. Wetlands or work beyond the proposed site development activities may not be relied on by this report and will require additional delineation services if work is to occur in these locations. In addition, we delineated two wetlands within the site project area that were not identified as part of our previous baseline investigations.

Positive indicators for each of the three wetland parameters were present at the time of our 2017 investigations for each of the previously and newly delineated wetlands. Therefore, the delineated areas each met the necessary criteria for designation as wetlands according to the guidelines of the COE (Environmental Laboratory 1987) and Regional Supplement (COE 2010).

The majority of wetlands within the site meet criteria to be regulated as Category III and IV wetlands providing a moderate to high level of habitat function. With few exceptions, all wetlands and streams at the site would be provided buffers that range from 50 to 150 feet and described in more detail later in this report. Wetlands that provide moderate to high habitat functions would be provided the widest buffers.

3.2.1 Site Wetlands (Olympic Terrace II – Phase II)

Wetland A and Stream 1

Based on our previous baseline investigation, Wetland A totals 16,105 square feet (0.37 acres) in area and lies in a narrow, steep-sided ravine located in the southwestern portion of the site. Stream 1 flows into Wetland A and was flagged for ordinary high water as part of this project. Flow from Wetland A occurs along the narrow, steeply-sided bottom of a forested ravine that continues off-site to the south and forms a small stream that ultimately flows into another wetland area just south of the extreme southwestern corner of the site nearest Parcel Number 978820504.

Vegetation

Wetland A is dominated by a palustrine, scrub-shrub, broad-leaved deciduous (PSS1) vegetation class. Although the wetland is influenced by a canopy of red alder (Alnus rubra), western arborvitae (*Thuja plicata*), and western hemlock (*Tsuga heterophylla*) trees, the trees are all rooted upslope and outside of the wetland boundary. The wetland itself is generally dominated by salmonberry (*Rubus spectabilis*), with portions dominated by overhanging Himalayan blackberry (*Rubus armeniancus*) and western arborvitae. Skunk cabbage (Lysichiton americanum), slough sedge (Carex obnupta), piga-back plant (Tolmia menzesii), fringe cup (Tellima grandiflora), lady-fern (Athyrium felixfeminina), horsetail (Equistetum arvense), and deer fern (Blechnum spicant) are also common components of the herbaceous understory community. Numerous downed logs criss-cross the incised channel and provide substrate for sword fern (*Polystichum* munitum), red elderberry (Sambucus racemosa), salal (Gaultheria shallon), and red huckleberry (Vaccinium parvifolis). In addition to the Himalayan blackberry, black raspberry (Rubus leucodermis), Pacific blackberry (Rubus ursinus), and evergreen blackberry (*Rubus laciniatus*) also overhang portions of the northern end of the wetland. All portions of the wetland are dominated by hydrophytic vegetation.

Soils and Hydrology

Soils within Wetland A consist of a very dark gray (10YR 3/1) silty clay loam 'A' horizon, underlain by a very dark grayish brown (10YR 3/2) muck 'B' horizon over a grayish brown (10YR 5/2) to yellowish brown (10YR 5/6) sandy loam (Sample Plot A-2, Appendix A). This soil profile generally occurred on the headwaters of a seep at the top of the ravine, approximately 20 feet upslope of the stream bottom. Low chroma and muck soils are indicative of hydric soil conditions. Near the southeastern side of Wetland

A, a small hillside seep contributes hydrology to this riverine wetland system. At the top of this seep muck soils were encountered along with hydrophytic vegetation.

All portions of the wetland had positive primary indicators of wetland hydrology and were saturated within the majority of the root zone. At the time of our site visit, Wetland A was characterized by a stream channel approximately ranging from 3-10 feet wide with 8 inches of water flowing south through the wetland. However, the volume of flow was relatively small and it is likely that the primary contributor to wetland hydrology is interflow and a seasonally perched water table. The adjacent soil profiles of the ravine sidewalls were saturated at approximately 5 inches deep with a water table evident at 15 inches deep according to our previous baseline investigation (Raedeke Associates, Inc. 2000).

Classification and Determination

Based on our observations, Wetland A meets the necessary criteria for designation as a wetland according to the guidelines of the COE delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). Wetland A is classified as a palustrine, scrub-shrub, broad-leaved deciduous (PSS1) wetland. Based on the 2014 WDOE Wetlands Rating Form for Western Washington (Hruby 2014), Wetland A would likely be rated as a Category III wetland (Wetland A, Appendix B). Category III wetlands typically require a 150-foot buffer, depending on the intensity of proposed adjacent land use, according to the Jefferson County (2016) Code.

Stream 1, according to Jefferson County GIS mapping information, is mapped as a non-fish habitat stream with a 75-foot stream buffer requirement per Jefferson County (2016) Code. Based on observations during this investigation and previous investigations, the stream appears to flow perennially.

Adjacent Uplands

The uplands surrounding Wetland A consist of young planted Douglas-fir (*Pseudotsuga menziesii*) and western hemlock that were part of a restoration effort following clear-cutting over 15 years ago. These areas are currently characterized by an upland shrub community and were differentiated from the wetland mainly by the dominance of non-hydrophytic plant species such as western hemlock, red huckleberry, deer fern, sword fern, Pacific blackberry, Himalayan blackberry, and bracken-fern (*Pteridium aquilinum*). The surrounding uplands are generally characterized by a very dark grayish brown (10YR 3/2) loam surface horizon, over a yellowish brown (10YR 5/4) sandy loam subsurface, generally without mottles within 12 inches of the surface (Sample Plot A-1, Appendix A). At the time of our site investigations, there was no evidence of saturation or free water within the upper 14 to 18 inches of the soil profile.

Wetland C

Wetland C is located in the southeastern corner of the property, west of a wetland area delineated during our baseline investigation denoted as Wetland B and south of Mount Wilder Way Road. According to our previous baseline investigation, Wetland C totals 15,649 square feet (0.36 acres) in area and is an isolated depression oriented generally north to south.

Vegetation

Wetland C is characterized by palustrine, emergent persistent (PEM1) and palustrine scrub-shrub, broad-leaved deciduous (PSS1) vegetation classes. The emergent class encompasses the majority of the northern portion of the wetland and is dominated by slough sedge with scattered red alder, Sitka willow (Salix sitchensis), and Pacific willow (Salix lucida) trees. The wetland is fringed by salmonberry and western red cedar. Patches of Pacific blackberry and salal growing on elevated hummocks are interspersed within the wetland. The southern portion of the wetland is characterized by a scrub-shrub community dominated by salmonberry with a fringe of western hemlock and western red cedar trees and an understory of water parsley (Oenanthe sarmentosa) and slough sedge. Tall buttercup (Ranunculus acris), smooth stem sedge (Carex laeviculmis), violet (Viola spp), and tall mannagrass (Glyceria elata) are also common components of the understory in the southern portion of the wetland. Wetland C is thus dominated by hydrophytic vegetation.

Soils and Hydrology

Soils within the southern portion of the wetland consist of a very dark grayish brown (10YR 3/2) depleted matrix at least 8 inches thick with yellowish brown (10YR 5/4) redoxomorphic features associated with wetland soils (Sample Plot C-2, Appendix A). Low chroma soils with mottles are indicative of hydric soil conditions.

At the time of our site investigation, the majority of the wetland was inundated approximately 6-8 inches. Thus, all portions of the wetland had positive primary indicators of wetland hydrology. Wetland C likely receives hydrology from groundwater seepage and a seasonally perched water table.

Classification and Determination

Based on our observations, Wetland C meets the necessary criteria for designation as a wetland according to the guidelines of the COE delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). This wetland is classified as a palustrine, emergent, persistent (PEM1) and scrub-shrub, broad-leaved deciduous (PSS1) wetland. Based on the 2014 WDOE Wetlands Rating Form for Western Washington (Hruby 2014), Wetland C would likely be rated as a Category III wetland (Wetland C, Appendix B). Category III wetlands typically require a 150-foot buffer, depending on the intensity of proposed adjacent land use, according to the Jefferson County (2016) Code.

Adjacent Uplands

The surrounding uplands (coniferous forest) were differentiated from the wetland mainly by the dominance of non-hydrophytic plant species, principally Douglas-fir, salal, red huckleberry, cascade Oregon-grape (*Mahonia nervosa*), and sword-fern. Scattered western arborvitae, red alder, and western hemlock also are common components of these upland forests. The surrounding uplands also were generally characterized by very grayish brown (10YR 4/2) to yellowish brown (10YR 5/8) or brighter soils, generally without mottles in the 'B' horizon within 12 inches of the surface (Sample Plot C-1, Appendix A). At the time of our site investigations, saturation was not evident within the upper 12 inches of the soil profile.

Wetland D

Wetland D is a small, isolated depression that totals 759 square feet (0.02 acres) and lies approximately 150 feet south of Wetland C according to the results of our baseline investigation report (Raedeke Associates, Inc. 2000). We did not flag this wetland area as part of this study since it is located more than 300 feet from any proposed disturbances at the site. Although it was not flagged as part of this study, Wetland D is still present and found in approximately the same location that it was identified during our baseline investigations.

Wetland E

Wetland E is a small, isolated depression which according to our baseline investigation report (Raedeke Associates, Inc. 2000) totals 602 square feet (0.01 acres) in area and is located in the southeastern corner of the property, to the west of Wetlands C and D. It was observed to be approximately the same size and in the same location as it was identified in our baseline studies.

Vegetation

Wetland E consists of a palustrine emergent, persistent (PEM1) vegetation community dominated by slough sedge, violet, marsh speedwell (*Veronica scutellata*), and common speedwell (*Veronica officinalis*). Scattered salmonberry, hardhack spirea (*Spiraea douglasii*), salal, and red huckleberry are interspersed with the larger areas of slough sedge. Wetland E is thus dominated by hydrophytic vegetation.

Soils and Hydrology

Soils within Wetland E consist of a grayish brown (10YR 5/2) sandy loam surface horizon with yellowish brown (10YR 5/4) mottles, standing water to a depth of at least 8 inches was observed during our 2017 field investigation. At the time of our site investigation, wetland hydrology was observed based on the presence of hydric soils, a dominance of hydrophytic vegetation, and indicators of wetland drainage patterns, including evidence of ponding and scouring (Sample Plot E-2, Appendix A). Thus,

Wetland E has positive evidence of wetland hydrology and low chroma, mottled soils indicative of hydric soils. Wetland E likely receives hydrology from groundwater seepage and a seasonally perched water table.

Classification and Determination

Based on our observations, Wetland E meets the necessary criteria for designation as a wetland according to the guidelines of the COE delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). This wetland is classified as a palustrine, persistent emergent (PEM1) wetland. Based on the 2014 WDOE Wetlands Rating Form for Western Washington (Hruby 2014), Wetland E would likely be rated as a Category IV wetland (Wetland E, Appendix B). Category IV wetlands typically require a 50-foot buffer, depending on the intensity of proposed adjacent land use, according to the Jefferson County (2016) Code. However, Category IV wetlands smaller than 10,000 feet are not considered designated wetlands under the Jefferson County (2016) ICAO. Such wetlands may still be considered jurisdictional wetlands by the WDOE and COE.

Adjacent Uplands

Due to their close proximity, the uplands surrounding Wetlands B, C, D, E, and F are essentially the same. These coniferous forests were differentiated from the wetland mainly by the dominance of non-hydrophytic plant species, principally Douglas-fir, salal, Pacific blackberry, cascade Oregon-grape, and sword-fern. Scattered western red cedar, red alder, and western hemlock also are common components of these upland forests. The surrounding uplands also were generally characterized by very dark grayish brown (10YR 3/2) to dark yellowish brown (10YR 4/6) or brighter loam soils, generally without mottles in the 'B' horizon within 12 inches of the surface (Sample Plot E-1, Appendix A). At the time of our site investigations, saturation was not evident within the upper 12 inches of the soil profile in these upland areas.

Wetland F

Wetland F is an isolated depression that totals 27,133 square feet (0.62 acres) in area and is located south and west of Wetland E in the southeastern corner of the property.

Vegetation

Wetland F consists of palustrine, forested, broad-leaved deciduous (PFO1) and palustrine, emergent, persistent (PEM1) vegetation classes. The emergent community comprises the southern and central portion of the wetland and is dominated by slough sedge, water parsley, pacific water dropwort (*Petasites frigidus*), and marsh speedwell, with scattered patches of hardhack spirea, western crabapple (*Malus fusca*), and salal interspersed throughout the wetland. The forested community comprises the western and northern portions of Wetland F and is dominated by red alder and western red cedar trees with an understory of salmonberry, water parsley, Siberian miner's lettuce (*Claytonia*

sibirica), and tall mannagrass. Wetland F is thus characterized by a dominance of hydrophytic vegetation.

Soils and Hydrology

The soil profile throughout this wetland is generally characterized by a surface horizon of very dark grayish brown (10YR 3/2) silt loam with yellowish brown (10YR 5/4) redoximorphic features. At the time of our site investigation, the soil profile was saturated at the surface within the center of the wetland. The southern and western portions of the wetland were saturated and exhibiting signs of ponding at the time of our site investigation, which confirmed wetland hydrology that was assumed in these portions of the wetland during our previous baseline investigations based on water-stained leaves, evidence of scouring, hydric soil, and a dominance by hydrophytic vegetation. Thus, Wetland F displayed positive evidence of wetland hydrology and low chroma, mottled soils indicative of hydric soils (Sample Plot F-2, Appendix A). Wetland F likely receives hydrology from groundwater seepage, direct precipitation surface water runoff from surrounding uplands, and a seasonally perched water table.

Classification and Determination

Based on our observations, Wetland F meets the necessary criteria for designation as a wetland according to the guidelines of the COE delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). This wetland is classified as a palustrine, forested, broad-leaved deciduous (PFO1) and palustrine, emergent persistent (PEM1) wetland. Based on the 2014 WDOE Wetlands Rating Form for Western Washington (Hruby 2014), Wetland F would likely be rated as a Category IV wetland (Wetland F, Appendix B). Category IV wetlands typically require a 50-foot buffer, depending on the intensity of adjacent land use, according to the Jefferson County (2016) Code.

Adjacent Uplands

Due to their close proximity, the uplands surrounding Wetlands B, C, D, E, F, Y, and Z are essentially the same. These coniferous forests were differentiated from the wetland mainly by the dominance of non-hydrophytic plant species, principally Douglas-fir, salal, Pacific blackberry, red huckleberry, and sword-fern. Scattered western red cedar, red alder, and western hemlock also are common components of these upland forests. The surrounding uplands also were generally characterized by very dark grayish brown (10YR 3/2) to strong brown (7.5YR 4/6) or brighter soils, generally without mottles within 12 inches of the surface (Sample Plot F-1, Appendix A). At the time of our site investigations, saturation was not evident within the upper 12 inches of the soil profile in these upland areas.

Wetland Y

Wetland Y is a depression that totals 8,410 square feet (0.19 acres) in area and is located north of Wetland F and south of Wetland Z and Stream 6. It is generally located in the northwestern corner of the site parcel number 978802502.

Vegetation

Wetland Y consists of palustrine, forested, broad-leaved deciduous (PFO1) and interspersed palustrine, emergent, persistent (PEM1) vegetation classes. The emergent community is comprised of slough sedge and pacific water dropwort, with scattered patches of salal and salmon raspberry interspersed throughout the wetland. The forested community is dominated by red alder and western arborvitae trees with an understory of salmonberry, salal, ad slough sedge. Wetland Y is thus characterized by a dominance of hydrophytic vegetation.

Soils and Hydrology

The soil profile throughout this wetland is generally characterized by a surface horizon of black (10YR 2/1) loam with an underlying "B" soil layer of grayish brown (10YR 5/2) sandy loam with dark yellowish brown (10YR 4/4) redoximorphic features (Sample Plots Y-1 and Y-3, Appendix A). At the time of our site investigation, the soil profile was saturated at the surface with approximately 3 inches of ponding water in the wetland. Thus, Wetland Y displayed positive evidence of wetland hydrology, and low chroma, mottled soils indicative of hydric soils. Wetland Y likely receives hydrology from groundwater seepage, direct precipitation surface water runoff from surrounding uplands, and a seasonally perched water table. It generally drains by overland flow when flooded to the north toward Stream 6.

Classification and Determination

Based on our observations, Wetland Y meets the necessary criteria for designation as a wetland according to the guidelines of the COE delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). This wetland is classified as a palustrine, forested, broad-leaved deciduous (PFO1) and palustrine, emergent persistent (PEM1) wetland. Based on the 2014 WDOE Wetlands Rating Form for Western Washington (Hruby 2014), Wetland Y would likely be rated as a Category III wetland (Wetland Y, Appendix B). Category III wetlands typically require a 150-foot buffer, depending on the intensity of proposed adjacent land use, according to the Jefferson County (2016) Code.

Adjacent Uplands

Due to their close proximity, the uplands surrounding Wetlands B, C, D, E, F, Y, and Z are essentially the same (Sample Plot Y-2, Appendix A). Refer to the descriptions of uplands around nearby wetland areas that are previously discussed in this report. The surrounding uplands also were generally characterized by brighter soils without mottles within 12-18 inches of the surface and similar to the uplands around nearby wetland areas.

Wetland Z and Stream 6

Wetland Z is a depression that totals 1,276 square feet (0.03 acres) in area and is located north of Wetland Y and east of Stream 6 in the northwestern corner of the site parcel number 978802502. Stream 6 generally drains south to north through a culvert under the Mount Wilder Way roadway.

Vegetation

Wetland Z is comprised of palustrine, scrub-shrub broad leaved deciduous (PSS1) vegetation class. The community is dominated by salmonberry throughout. Wetland Z is thus characterized by a dominance of hydrophytic vegetation.

Soils and Hydrology

The soil profiled throughout this wetland is similar to that of Wetland Y. The profiled consisted of shallow dark surface of black (10YR 2/1) sandy loam with underlying dark grayish brown (10YR 4/2) sandy loam with dark yellowish brown (10YR 4/4) mottles, inundated to a depth of approximately 3 inches throughout the wetland (Sample Plot Z-1, Appendix A). Thus, Wetland Z displayed positive evidence of wetland hydrology and low chroma, mottled soils indicative of hydric soils. A nearby stormwater pond also contributes hydrology to this wetland area.

Classification and Determination

Based on our observations, Wetland Z meets the necessary criteria for designation as a wetland according to the guidelines of the COE delineation manual (Environmental Laboratory 1987) and the Regional Supplement (COE 2010). This wetland is classified as a palustrine scrub-shrub broad leaved deciduous (PSS1) wetland. Based on the 2014 WDOE Wetlands Rating Form for Western Washington (Hruby 2014), Wetland Z would likely be rated as a Category III wetland (Wetland Z, Appendix B). Category III wetlands typically require a 150-foot buffer, depending on the intensity of proposed adjacent land use, according to the Jefferson County (2016) Code.

Stream 6, according to Jefferson County GIS mapping information, is mapped as a non-fish habitat stream with a 75-foot stream buffer requirement per Jefferson County (2016) Code. Based on observations during this investigation and previous investigations, the stream appears to flow seasonally.

Adjacent Uplands

Due to their close proximity, the uplands surrounding Wetlands B, C, D, E, F, Y, and Z are essentially the same (sample Plot Z-2, Appendix A). Refer to the descriptions of uplands around nearby wetland areas that are previously discussed in this report. The surrounding uplands also were generally characterized by brighter soils without mottles within 12-18 inches of the surface and similar to the uplands around nearby wetland areas.

3.2.2 Phase I Wetlands Adjacent to or Offsite of The Phase II Area

Wetlands A, C, and F continue off site from the investigated parcels. We did not identify any other wetlands adjacent to or offsite that were of concern for the proposed development of Olympic Terrace II – Phase II area other than the wetlands described in the previous section of this report. Wetlands located in the remainder of the Olympic Terrace project area, including Olympic Terrace I that is currently under construction, were not delineated during these 2017 field investigations. Only the areas nearest the proposed project development, within 300 feet, were investigated for wetlands, streams, and habitats. Refer to the results presented in the baseline investigations performed by Raedeke for more information regarding wetlands located around the current project site (Raedeke Associates, Inc. 2000). Wetlands identified as part of our 2000 baseline investigations may not be relied on for purposes of this report. However, for general understanding of the overall Olympic Terrace property, previously delineated wetlands are shown on Figure 2 of this report.

4.0 REGULATORY CONSIDERATIONS

Wetlands and streams are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances, including the Jefferson County (2016) code. Regulatory considerations pertinent to wetlands and streams at the site are subject to Federal, State, and Jefferson County (2016) Critical Areas Regulations discussed below; however, this discussion should not be considered comprehensive. Additional information may be obtained from agencies with jurisdictional responsibility for, or interest in, the site. A brief review of federal and state regulations and Jefferson County policy, relative to wetlands, is presented below.

4.1 FEDERAL CLEAN WATER ACT (U.S. ARMY CORPS OF ENGINEERS)

Federal law (Section 404 of the Clean Water Act) discourages the discharge of dredged or fill material into the nation's waters, including most wetlands and streams, without a permit from the U.S. Army Corps of Engineers (COE). We note that certain wetlands, including many that are hydrologically isolated from "Waters of the U.S.," may not be regulated by the COE. The COE makes the final determination as to whether an area meets the definition of "Waters of the U.S." as defined by the federal government (Federal Register 1986:41251), and thus, if it is under their jurisdiction.

We should caution that the placement of fill within wetlands or other "Waters of the U.S." without authorization from the COE is not advised, as the COE makes the final determination regarding whether any permits would be required for any proposed alteration (COE 2012). Therefore, we recommend requesting a jurisdictional determination from the COE prior to any construction activities, if any modification of wetlands or streams is proposed. A jurisdictional determination would also provide evaluation and confirmation of our delineation by the COE.

4.2 STATE OF WASHINGTON

Under Section 401 of the Clean Water Act, an activity involving a discharge in waters of the U.S. and authorized by the COE must also receive certification that the federally permitted activity complies with the federal Clean Water Act, state water quality laws, and any other appropriate state laws (such as the Water Resources Act and Hydraulic Code). In Washington State, the certifying agency is usually the Washington Department of Ecology (WDOE). In addition, if the COE-authorized permit is for actions within the 15 coastal counties, including Jefferson County, then the WDOE must confirm or deny that the proposed action complies with the Washington Coastal Zone Management Program.

The WDOE also regulates activities within isolated wetlands under the state Water Pollution Control Act (90.48 RCW) and the Shoreline Management Act (90.58 RCW) in instances where a wetland or water is determined to be non-jurisdictional by the COE. The standards of review for issuance of a permit by the WDOE for activities

within non-COE-jurisdictional wetlands or waters are the same as those for Section 401 certifications.

4.3 JEFFERSON COUNTY

Jefferson County (2016) code regulates wetlands and streams as critical areas. Alterations of wetlands or streams and their buffers are generally prohibited, except as allowed under certain conditions. All direct wetland impacts must be mitigated through wetland creation, restoration, or enhancement. Jefferson County (2016) has the final authority to determine ratings, buffers, and allowed uses of wetlands, their buffers, and other sensitive areas that are under their jurisdiction.

We rated all wetlands within the project areas using the 2014 WDOE Wetland Rating System for Western Washington (Hruby 2014), as required and clarified by Jefferson County (2016) code for determination of wetland buffer widths and mitigation ratios (see Appendix B) and Ms. Donna Frostholm of Jefferson County Department of Community Development via email on April 3, 2017 (Frostholm, pers. comm. 2017). Jefferson County (2016) also regulates streams as "Fish and Wildlife Habitat Conservation Areas" under Title 18 Chapter 18.22 Article VI. Table 2 provides a list of wetlands and streams within the project area and their probable ratings and corresponding buffers.

5.0 LIMITATIONS

We have prepared this report for the exclusive use of Westharbor Homes, Mr. Cliff O'Brien, and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Westharbor Homes.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

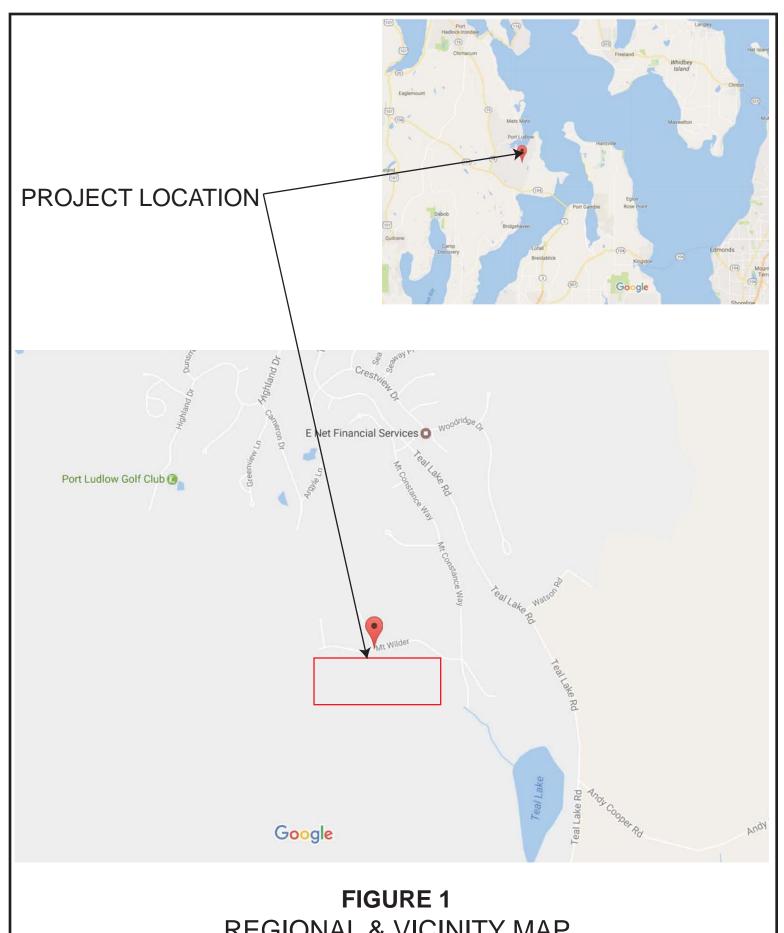
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FIGURES AND TABLES



REGIONAL & VICINITY MAP OLYMPIC TERRACE PORT LUDLOW, WA



2111 N. Northgate Way, Ste. 219 Seattle, WA 98133 99061

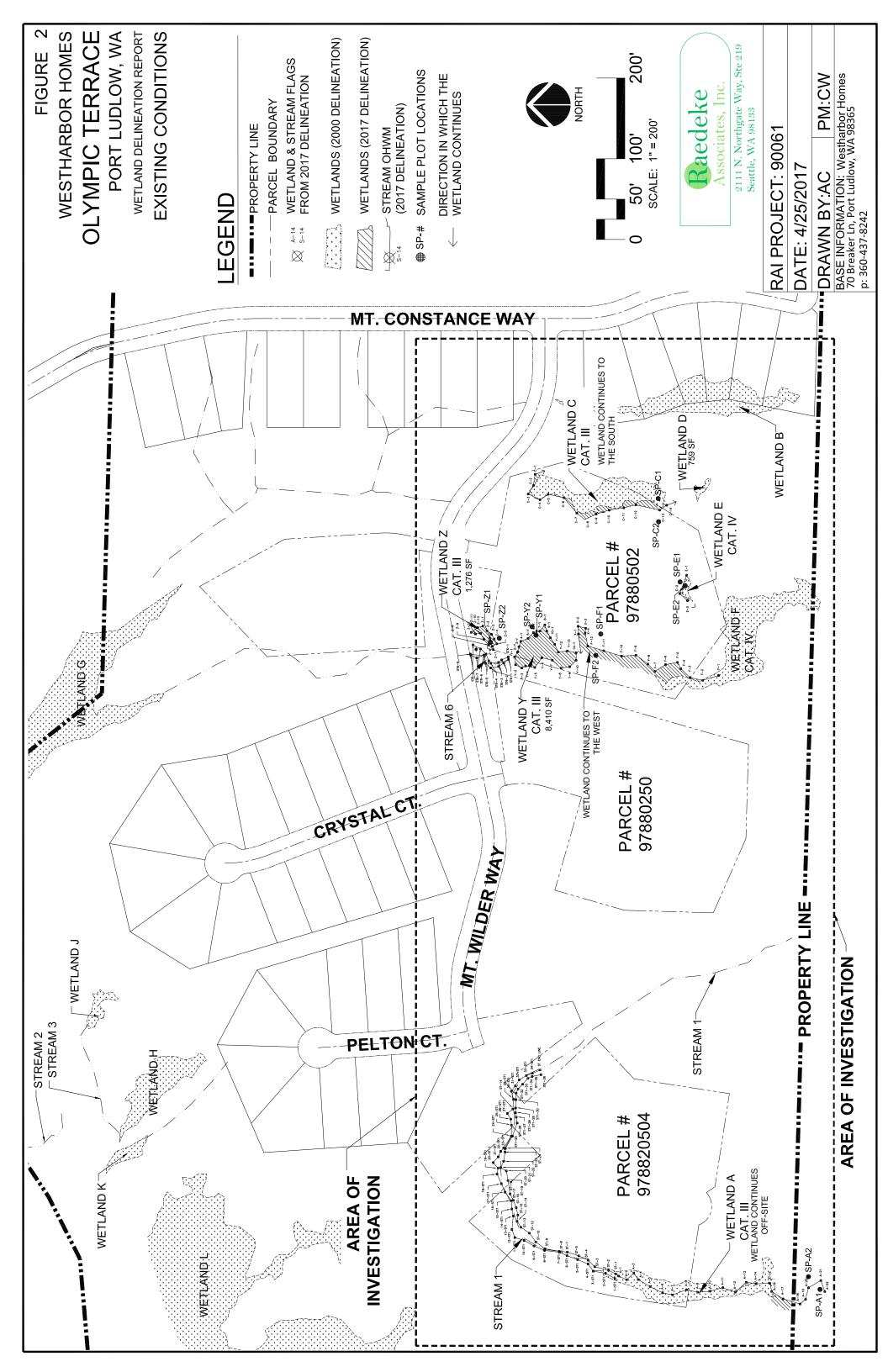


Table 1. Olympic Terrace II – Phase II area wetland locations.

Wetland	S, T, R	Lat. Long. ¹
A	SW 1/4 of S21, T28N, R1E	47.897220, -122.687324
С	SW 1/4 of S21, T28N, R1E	47.898196, -122.679663
D	SW 1/4 of S21, T28N, R1E	47.897294, -122.679440
Е	SW 1/4 of S21, T28N, R1E	47.897368, -122.680308
F	SW 1/4 of S21, T28N, R1E	47.897587, -122.681101
Y	SW 1/4 of S21, T28N, R1E	47.898321, -122.681065
Z	SW 1/4 of S21, T28N, R1E	47.898593, -122.680713

¹ Latitude and longitude estimated with Google Earth and GPS units utilized during the field work.

Table 2. Olympic Terrace II – Phase II area wetland summary.

Wetland	Size (acres) ³	HGM Class	Cowardin Class ¹
A^2	0.37	Riverine	PSS1
C^2	0.36	Depressional	PEM1, PSS1
D	0.02^{4}	Depressional	PSS1
Е	0.01	Depressional	PEM1
F^2	0.62	Depressional	PFO1, PEM1
Y^2	0.19	Depressional	PFO1, PEM1
\mathbb{Z}^2	0.03	Depressional	PFO1, PEM1

Based on Cowardin et. at. (1992).

PEM1	Palustrine, emergent, persistent
PSS1	Palustrine, scrub-shrub, broad-leaved deciduous
PFO1	Palustrine, forested, broad-leaved deciduous

². Wetland extends off-site.

All wetland areas are estimated based on aerial photo interpretation, previous baseline investigation (Raedeke Associates, Inc. 2000) and information provided by ESM Consulting Engineers, LLC.

Wetland area is not applicable for purposes of this report. Area presented is from previous baseline investigation results (Raedeke Associates, Inc. 2000).

Table 3. Olympic Terrace II – Phase II Area: $2014\ WDOE\ ratings$ and buffers.

Wetland	WDOE Category	Total Score	Habitat Score	Water Quality Score	Buffer (ft)
A	III	16	7	5	150
С	III	18	7	5	150
Е	IV	13	5	4	50
F	IV	15	8	4	50
Y	III	16	8	4	150
Z	III	18	8	5	150

APPENDIX A:

Field Survey Data

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

Project/Site: Olympic Terrace		City/County	: Port Ludlo	ow, WA	Sampling Date:3/1/17			
Applicant/Owner: Westharbor Homes			State: WA	Sampling Point: SP A-1				
Investigator(s): C. Wright and W. Hohman Section, Township, Range: S21, T28N, R1E, W.M.								
Landform (hillslope, terrace, etc.): Slope	ef (concave,	, convex, none): Convex	Slope (%): <u>3-5</u>					
Subregion (LRR): Northwest Forests & Coasts (LRR A)	_ Lat: 47.89	97202		Long: <u>-122.687170</u>	Datum: Unknown			
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes			NWI classifica	tion: None			
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sign	-							
Are Vegetation, Soil, or Hydrology natu								
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 ☐ No ☒								
Hydric Soil Present? Yes ☐ No ☒			e Sampled					
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes □ No	o 🗵			
Remarks: SP A-1 is located upland of Wetland A, near flag	ı A-21.							
VEGETATION – Use scientific names of plant	te .							
VEGETATION - Use scientific flames of plant	Absolute	Dominant	Indicator	Dominance Test works	sheet:			
Tree Stratum (Plot size: <u>5 m</u>)	% Cover			Number of Dominant Sp				
Tsuga heterophylla (Western Hemlock)	40	<u>Y</u>	FACU	That Are OBL, FACW, o	or FAC: 1 (A)			
2				Total Number of Domina	ant			
3				Species Across All Strat	a: <u>4</u> (B)			
4				Percent of Dominant Sp				
Sapling/Shrub Stratum (Plot size: 3 m)	40	= Total C	over	That Are OBL, FACW, or FAC: 25 (A/B				
1. Gaultheria shallon (Salal)	25	<u>Y</u>	FACU	Prevalence Index work	sheet:			
2. Vaccinium parvifolium (Red Blueberry)	5	N	FACU	Total % Cover of:	Multiply by:			
3				OBL species 0	x 1 = <u>0</u>			
4				1	x 2 = <u>0</u>			
5					x 3 = <u>30</u>			
Herb Stratum (Plot size: 1 m)	30	= Total C	over	FACU species 100 $x = 400$ UPL species 0 $x = 0$				
Polystichum munitum (Pineland Sword Fern)	30	Υ	FACU		x = 0			
Blechnum spicant (Deer Fern)				Column Totals: 110	(A) <u>430</u> (B)			
3				Prevalence Index	= B/A = 3.9			
4				Hydrophytic Vegetation	n Indicators:			
5				☐ 1 - Rapid Test for Hy				
6				2 - Dominance Test				
7				3 - Prevalence Index				
8					daptations ¹ (Provide supporting or on a separate sheet)			
9		5 - Wetland Non-Vascular Plants ¹						
10				☐ Problematic Hydroph	hytic Vegetation¹ (Explain)			
11					and wetland hydrology must			
Woody Vine Stratum (Plot size: 3 m)	40	= Total C	over	be present, unless distu	rbed or problematic.			
1				Hydrophytic				
2				Vegetation				
% Bare Ground in Herb Stratum 60	0	= Total C	over	Present? Yes	i □ No ⊠			
Remarks:								

Profile Desc	ription: (Describ	e to the de	pth need				or confirn	n the ab	sence	of indicators.)
Depth	Matrix Color (moist)	%	Color (ı		ox Feature		Loc ²	Toytu		Romarka
(inches)			Color (I	moist)	<u>%</u>	Type ¹	LOC	<u>Textur</u>	<u> </u>	Remarks
0 - 8	10YR 3/2	100						Loam		
<u>8 - 16+</u>	10YR 5/2	95	<u>10YR 5</u>	5/4	5	<u>C</u>	<u>M</u>	<u>Sandy</u>	Loam	
-					_					
	oncentration, D=De	•					ed Sand G			ation: PL=Pore Lining, M=Matrix.
-	Indicators: (Appli	cable to a				ed.)				rs for Problematic Hydric Soils ³ :
Histosol	, ,			ndy Redox (S				L		Muck (A10)
☐ Histic Ep	ipedon (A2)			ipped Matrix amy Mucky N	, ,	l) (ovcont	MIDA 1	<u> </u>		Parent Material (TF2) Shallow Dark Surface (TF12)
	n Sulfide (A4)			amy Gleyed I			. WILKA I)		-	r (Explain in Remarks)
	Below Dark Surfa	ce (A11)		pleted Matrix	, ,	,		_	_ 00.	(Explain in Remails)
	rk Surface (A12)	,		dox Dark Su				3	ndicator	rs of hydrophytic vegetation and
☐ Sandy M	ucky Mineral (S1)		☐ De _l	pleted Dark	Surface (F	7)			wetlar	nd hydrology must be present,
	leyed Matrix (S4)		☐ Re	dox Depress	ions (F8)				unless	s disturbed or problematic.
	_ayer (if present):									
Type:			_							
	ches):		_					Hydr	ic Soil	Present? Yes ⊠ No □
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicators	s:								
Primary India	ators (minimum of	one requir	ed; check	all that app	ly)				Secon	dary Indicators (2 or more required)
☐ Surface \	Nater (A1)] Water-Stai	ined Leave	es (B9) (e	xcept MLF	RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2,
☐ High Wa	ter Table (A2)			1, 2, 4	A, and 4B)				4A, and 4B)
☐ Saturation	n (A3)] Salt Crust	(B11)				☐ Dra	ainage Patterns (B10)
☐ Water Max	arks (B1)			Aquatic Inv	vertebrate	s (B13)			☐ Dry	y-Season Water Table (C2)
☐ Sedimen	t Deposits (B2)] Hydrogen		, ,			☐ Sa	turation Visible on Aerial Imagery (C9)
-	osits (B3)			Oxidized F		_	_	ts (C3)		eomorphic Position (D2)
	t or Crust (B4)					•	•			allow Aquitard (D3)
	osits (B5)			Recent Iro			•	•		C-Neutral Test (D5)
	Soil Cracks (B6)		_\ _	Stunted or			1) (LRR A))		ised Ant Mounds (D6) (LRR A)
	on Visible on Aerial		,	Other (Exp	olain in Re	marks)			☐ Fro	ost-Heave Hummocks (D7)
Field Obser	Vegetated Concav	ve Suriace	(D0)				<u> </u>			
Surface Water		Yes □ 1	lo ⊠ [Jonth (incho	o).					
Water Table				Depth (inche: Depth (inche:						
Saturation P							Wot	and Uw	drology	Present? Yes ☐ No ☒
(includes cap		res 🔲 i	No ⊠ □	Depth (inches	5)		Well	anu my	urology	rieseitt: Tes 🗌 No 🖂
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks: No	hydrologic indicat	ors to a de	pth of 16	inches.						

Project/Site: Olympic Terrace		City/Coun	ty: Port Ludle	ow, WA	Sampling Date: 3/1/17	
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP A	-2
Investigator(s): C. Wright and W. Hohman			Section, To	ownship, Range: <u>S21, T28</u>	N, R1E, W.M.	
Landform (hillslope, terrace, etc.): Slope		Local rel	ief (concave,	convex, none): Concave	Slope (%): <u>1-3</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)	_ Lat: 47.89	97124		Long: -122.687612	Datum: Un	known
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes			NWI classificat	tion: None	
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology sign	-				sent? Yes ⊠ No □	
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in		
SUMMARY OF FINDINGS – Attach site map s				•	•	es, etc.
			-			
Hydrophytic Vegetation Present? Yes ⊠ No ☐ Hydric Soil Present? Yes ⊠ No ☐		ls t	he Sampled	Area		
Wetland Hydrology Present? Yes ⊠ No □		wit	hin a Wetlar	nd? Yes⊠ No	ο 🗌	
Remarks: SP A-2 is located in Wetland A, near flag A-21.						
VEGETATION – Use scientific names of plant	s.					
Trac Stratum (Diet circus 5 m)			nt Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size: <u>5 m</u>) 1. Thuja plicata (Western Arborvitae)			? Status	Number of Dominant Spartnat Are OBL, FACW, o		(Δ)
2						(八)
3				Total Number of Domina Species Across All Strata		(B)
4						(-)
	20			Percent of Dominant Spe That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size: 3 m)				Prevalence Index work	sheet:	
1 2					Multiply by:	
3				OBL species		
4.				FACW species		
5				FAC species	x 3 =	<u>—</u>
	0			FACU species	x 4 =	_
Herb Stratum (Plot size: 1 m)	_	V	FACIL	UPL species		
Polystichum munitum (Pineland Sword Fern) Lysichiton americanus (Yellow-Skunk-Cabbage)				Column Totals:	(A)	(B)
Carex obnupta (Slough Sedge)				Prevalence Index	= B/A =	
Claytonia sibirica (Siberian Springbeauty)				Hydrophytic Vegetation		
5				☐ 1 - Rapid Test for Hy	drophytic Vegetation	
6				2 - Dominance Test	is >50%	
7				3 - Prevalence Index	(is ≤3.0¹	
8				4 - Morphological Ad	daptations ¹ (Provide sup or on a separate sheet	
9				5 - Wetland Non-Vas	•	.)
10				☐ Problematic Hydroph		ain)
11				¹Indicators of hydric soil	, , ,	,
Woody Vine Stratum (Plot size: 3 m)	20	= Total (Cover	be present, unless distur		
1			<u> </u>	Hadron badla		
2				Hydrophytic Vegetation		
0/ Data Casuadia Hart Obstance 22	0	= Total	Cover		s⊠ No □	
% Bare Ground in Herb Stratum <u>80</u> Remarks:						
Tremane.						

Depth	cription: (Describ Matrix			cument the i		or confirn	n the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture Remarks
0 - 6	10YR 3/1	100					Silty Clay Loam
6 - 12	10YR 3/2	100					Muck
<u>12+</u>	10YR 5/2	<u>95</u>	10YR 5/6	<u>5</u> 	<u>C</u>	<u>PL</u>	Sandy Loam
	oncentration, D=De			•		ed Sand G	<u> </u>
Hydric Soil	Indicators: (Appl	icable to al	I LRRs, unless o	therwise note	ed.)		Indicators for Problematic Hydric Soils ³ :
Histosol			☐ Sandy Red				2 cm Muck (A10)
	pipedon (A2)		☐ Stripped Ma	` '			Red Parent Material (TF2)
	stic (A3) en Sulfide (A4)		-	ky Mineral (F1)		t MLRA 1)	☐ Very Shallow Dark Surface (TF12)☐ Other (Explain in Remarks)
_ , ,	d Below Dark Surfa	ce (A11)	☐ Loamy Gley ☐ Depleted Ma	red Matrix (F2) atrix (F3)			
•	ark Surface (A12)	()		Surface (F6)			³ Indicators of hydrophytic vegetation and
	Mucky Mineral (S1)		•	ark Surface (F	7)		wetland hydrology must be present,
•	Gleyed Matrix (S4)		☐ Redox Depi	ressions (F8)			unless disturbed or problematic.
	Layer (if present):						
Type:	-h).		-				Hudria Cail Brasant2 - Vas M - Na 🗆
Depth (in Remarks:	ches):		-				Hydric Soil Present? Yes ⊠ No □
HYDROLO Wetland Hy	GY drology Indicators	s:					
•	cators (minimum of		ed; check all that	apply)			Secondary Indicators (2 or more required)
Surface	Water (A1)	-	☐ Water-	Stained Leave	s (B9) (e	xcept MLF	RA Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)			2, 4A, and 4B)		•	4A, and 4B)
	on (A3)		☐ Salt Cr	rust (B11)			☐ Drainage Patterns (B10)
☐ Water M	` '		☐ Aquati	c Invertebrates	(B13)		☐ Dry-Season Water Table (C2)
	nt Deposits (B2)			gen Sulfide Od			Saturation Visible on Aerial Imagery (C9)
	posits (B3)			ed Rhizospher	_	-	
•	at or Crust (B4)			nce of Reduced			Shallow Aquitard (D3)
	oosits (B5) Soil Cracks (B6)			t Iron Reductio			·
	on Visible on Aerial	l Imagery (R		d or Stressed I Explain in Rer		(LKK A)) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
=	/ Vegetated Concar	0, 1	, —	_xpiaiir iir rtoi	nano,		Troot riedve ridiiiinooks (51)
Field Obser			,				
Surface Wa	ter Present?	Yes □ N	o 🛛 Depth (in	ches):			
Water Table				ches): <u>8</u>			
Saturation F (includes ca	resent? pillary fringe)		o Depth (in	ches): <u>0</u>			and Hydrology Present? Yes ⊠ No □
Describe Re	ecorded Data (strea	ım gauge, m	onitoring well, ae	rial photos, pre	evious in	spections),	if available:
Remarks:							

Project/Site: Olympic Terrace		City/County	y: <u>Port Ludl</u>	ow, WA	Sampling Date:3/1/17
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP C-1
Investigator(s): C. Wright and W. Hohman					
Landform (hillslope, terrace, etc.): Slope		Local relie	ef (concave,	, convex, none): Convex	Slope (%): <u>1-5</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)					
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes			NWI classifica	tion: None
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-				
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
			<u> </u>		· ·
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ N		Is th	e Sampled	l Area	
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes □ N	o 🛮
Remarks: SP C-1 is located upland of Wetland C.					
VEGETATION – Use scientific names of plant					
Tree Stratum (Plot size: 5 m)	Absolute <u>% Cover</u>			Dominance Test works	
	70			Number of Dominant Sp That Are OBL, FACW, o	
	10	N	FAC	Total Number of Domina	
3				Species Across All Strat	
4				Percent of Dominant Sp	eries
Sapling/Shrub Stratum (Plot size: 3 m)	80	= Total C	over		or FAC: <u>0</u> (A/B)
1. Gaultheria shallon (Salal)	5	Υ	FACU	Prevalence Index work	sheet:
Vaccinium parvifolium (Red Blueberry)					Multiply by:
3.					x 1 = 0
4				FACW species 0	x 2 = <u>0</u>
5				FAC species 10	x 3 = <u>30</u>
Harb Christian (Dick sizes 4 as)	<u>10</u>	= Total C	over		x 4 = <u>480</u>
Herb Stratum (Plot size: 1 m) 1. Polystichum munitum (Pineland Sword Fern)	30	V	EACH	•	x 5 = 0
Mahonia nervosa (Cascade Oregon-Grape)				Column Totals: 130	(A) <u>510</u> (B)
3				Prevalence Index	= B/A = 3.9
4				Hydrophytic Vegetation	n Indicators:
5				☐ 1 - Rapid Test for Hy	drophytic Vegetation
6				2 - Dominance Test	is >50%
7				3 - Prevalence Index	
8					daptations ¹ (Provide supporting or on a separate sheet)
9				☐ 5 - Wetland Non-Vas	'
10				I <u> </u>	hytic Vegetation ¹ (Explain)
11					and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)	40	= Total C	over	be present, unless distu	rbed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 60	0	= Total C	over	Present? Yes	s □ No ⊠
Remarks:				<u> </u>	

Profile Desc	cription: (Describ	e to the d	lepth ne	eded to docu	ment the i	ndicator	or confirm	the abser	nce of indica	ators.)
Depth	Matrix			Redo	x Feature	3				
(inches)	Color (moist)	<u>%</u>	Colo	r (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Remarks
0 - 3	10YR 4/2	100						Gr.Silt Loa	<u> </u>	
3 - 12+	10YR 5/8	100						Gr.Silt Loa	am_	
	_							'		_
		_						-		
·	-				_			•		
								-		
	-									
	-									
¹Tvpe: C=C	oncentration, D=De	epletion. R	RM=Red	uced Matrix. C	S=Covered	d or Coate	ed Sand Gr	rains. 2	Location: Pl	L=Pore Lining, M=Matrix.
	Indicators: (Appl									oblematic Hydric Soils ³ :
Histosol	(A1)			Sandy Redox (S5)			□ 2	cm Muck (A	10)
☐ Histic Ep	pipedon (A2)			Stripped Matrix					ed Parent M	aterial (TF2)
☐ Black Hi	stic (A3)		□ I	oamy Mucky N	/lineral (F1) (except	MLRA 1)	□ V	ery Shallow	Dark Surface (TF12)
	n Sulfide (A4)		□ I	oamy Gleyed	Matrix (F2)				ther (Explain	n in Remarks)
	d Below Dark Surfa	ce (A11)		Depleted Matrix						
	ark Surface (A12)		_	Redox Dark Su	` '					rophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark	•	7)			•	ogy must be present,
_	Gleyed Matrix (S4) Layer (if present):		F	Redox Depress	ions (F8)			ur	niess disturbe	ed or problematic.
Type:	ah a a \.							I localada G	ail Duanaut	2 V 🗆 N- 🗹
	ches):		_					Hyaric S	oli Present	? Yes □ No ⊠
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicators	s:								
Primary Indi	cators (minimum of	one requ	ired; che	eck all that app	ly)			<u>Se</u>	condary Indi	cators (2 or more required)
☐ Surface	Water (A1)			☐ Water-Sta	ined Leave	es (B9) (e	xcept MLR	RA 🗆	Water-Stair	ned Leaves (B9) (MLRA 1, 2,
☐ High Wa	iter Table (A2)				A, and 4B)		•		4A, and	
☐ Saturation	on (A3)			☐ Salt Crust	(B11)				Drainage P	atterns (B10)
☐ Water M	arks (B1)			Aquatic In	. ,	s (B13)			•	n Water Table (C2)
	nt Deposits (B2)			☐ Hydrogen					-	Visible on Aerial Imagery (C9)
	posits (B3)			☐ Oxidized F			Living Root	ts (C3)		c Position (D2)
-	at or Crust (B4)			☐ Presence		_	_	` ^ 🗆	Shallow Aq	
☐ Iron Dep	osits (B5)			☐ Recent Iro	n Reductio	n in Tille	d Soils (C6)) 🗆	FAC-Neutra	al Test (D5)
-	Soil Cracks (B6)						1) (LRR A)			Mounds (D6) (LRR A)
☐ Inundation	on Visible on Aerial	Imagery	(B7)	☐ Other (Exp					Frost-Heav	e Hummocks (D7)
☐ Sparsely	Vegetated Conca	ve Surface	e (B8)							
Field Obser	vations:									
Surface Wat	ter Present?	Yes 🗌	No 🛛	Depth (inche	s):					
Water Table	Present?	Yes 🗌	No 🛛	Depth (inche	s):					
Saturation P			No ⊠	Depth (inche	-		Wetla	and Hydro	ogy Presen	t? Yes □ No ⊠
(includes ca	pillary fringe)									
Describe Re	corded Data (strea	m gauge,	monitor	ıng well, aerial	photos, pr	evious ins	spections),	ıt available:		
Remarks:										

Project/Site: Olympic Terrace		City/Cou	unty: Port Ludle	ow, WA	Sampling Date:3/1/17
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP C-2
Investigator(s): C. Wright and W. Hohman			Section, To	ownship, Range: <u>S21, T28l</u>	N, R1E, W.M.
Landform (hillslope, terrace, etc.): Slope		Local r	elief (concave,	, convex, none): Concave	Slope (%): <u>1-3</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)	_ Lat: 47.89	97725		Long: <u>-122.679233</u>	Datum: Unknown
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes			NWI classifica	tion: None
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-				
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
Hydrophytic Vegetation Present? Yes ⊠ No □					
Hydric Soil Present? Yes ☒ No ☐			the Sampled		
Wetland Hydrology Present? Yes ⊠ No □		W	rithin a Wetlar	nd? Yes⊠ N	0 📙
Remarks: SP C-2 is located in Wetland C.		ı			-
VEGETATION – Use scientific names of plant					
Tree Stratum (Plot size: 5 m)			ant Indicator es? Status	Dominance Test works	
1. Thuja plicata (Western Arborvitae)				Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	ant
3				Species Across All Strat	
4				Percent of Dominant Sp	ecies
Sapling/Shrub Stratum (Plot size: 3 m)	40	= Tota	l Cover		or FAC: <u>67</u> (A/B)
Rubus spectabilis (Salmon Raspberry)	30	Υ	FAC	Prevalence Index work	sheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5					x 3 =
Herb Stratum (Plot size: 1 m)	30	= Tota	l Cover		x 4 =
Polystichum munitum (Pineland Sword Fern)	5	Y	FACII		x 5 =
2				Column Totals:	(A) (B)
3.				Prevalence Index	= B/A =
4.				Hydrophytic Vegetation	n Indicators:
5			<u> </u>	☐ 1 - Rapid Test for Hy	
6				2 - Dominance Test	
7				3 - Prevalence Index	
8					daptations ¹ (Provide supporting or on a separate sheet)
9				5 - Wetland Non-Vas	scular Plants ¹
10				☐ Problematic Hydroph	hytic Vegetation¹ (Explain)
11	5				and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)	<u> </u>	- 1018	ii Oovei	be present, unless distu	rbed or problematic.
1			<u> </u>	Hydrophytic	
2				Vegetation	. N. D
% Bare Ground in Herb Stratum 95	0	= Tota	l Cover	Present? Yes	s⊠ No □
Remarks:				<u> </u>	

Depth	Matrix				ox Feature			_					
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	Textur	<u>re</u>		R	<u>lemarks</u>	
-8	10YR 3/2	95	<u>10Y</u>	R 5/4	5	<u>C</u>	M	Sandy	Loam				
		_											
					'								
,		_	_										
	-												
_													
T 0 0					0 0		- 1010		21		DI D.		. M. M. (12)
•	oncentration, D=De Indicators: (Appl						ed Sand G						j, M=Matrix. /dric Soils³:
-		icable to				ieu.)						nauc n	yuric sons .
Histosol	ipedon (A2)			Sandy Redox (S Stripped Matrix]2cm		,	al (TF2)	
Black His				_oamy Mucky N	, ,	1) (excep	MLRA 1)					Surface	(TF12)
	n Sulfide (A4)			_oamy Gleyed			,					emarks	,
_ ,	Below Dark Surfa	ce (A11)		Depleted Matrix	•	,		_		\			
☐ Thick Da	rk Surface (A12)			Redox Dark Su	rface (F6)		³ 1	ndicato	rs of hy	drophy	tic vege	tation and
☐ Sandy M	lucky Mineral (S1)			Depleted Dark	Surface (F7)			wetlar	nd hydr	ology n	nust be	present,
	leyed Matrix (S4)		I	Redox Depress	ions (F8)				unless	s distur	bed or	problem	atic.
estrictive I	Layer (if present):												
Type:													
Depth (inc	ches):							Hydr	ia Cail	Dracar	+2 V	′es ⊠	No 🗌
Remarks:								riyur	ic 30ii	i reser			
YDROLO	GY							Hydr		reser			
YDROLO	GY drology Indicator	S:		eck all that app	lv)			riyui					nore required
YDROLO Vetland Hyd Primary Indic	GY drology Indicators cators (minimum of	S:				ves (B9) (e	except ML		Secon	dary In	dicator	s (2 or n	nore required
YDROLO Vetland Hyd Vrimary India	GY drology Indicator: cators (minimum of Water (A1)	S:		☐ Water-Sta	ined Leav		xcept ML		Secon	dary In	dicator ained L	s (2 or n	nore required 39) (MLRA 1
/DROLO /etland Hydrimary India 3 Surface Value High Wa	GY drology Indicators cators (minimum of Water (A1) ter Table (A2)	S:		☐ Water-Sta	ined Leav		xcept ML		Secon	dary In ater-Sta 4A, ar	dicator ained L	<u>s (2 or n</u> eaves (E	39) (MLRA 1
/DROLO /etland Hydrimary Indic 3 Surface V 4 High Wa 5 Saturatio	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3)	S:		☐ Water-Sta 1, 2, 4	ined Leav A, and 4E (B11)	3)	xcept ML		Secon Wa	dary In ater-Sta 4A, a i ainage	dicator ained L nd 4B) Patterr	s (2 or n eaves (I	39) (MLRA 1
/DROLO /etland Hydrimary India // Surface \(\) // High Wa // Saturatio // Water Mi	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)	S:		☐ Water-Sta 1, 2, 4 ☐ Salt Crust ☐ Aquatic In	ined Leav A, and 4E (B11) vertebrate	B) es (B13)	xcept ML		Secon Wa	dary In ater-Sta 4A, a i ainage y-Seas	dicator ained L nd 4B) Patterr on Wat	s (2 or n eaves (t ns (B10) ter Table	39) (MLRA 1
YDROLO Vetland Hyd Irimary India Surface N High Wa Saturatio Water Ma	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)	S:		Water-Sta 1, 2, 4 Salt Crust Aquatic In	ined Leaven A, and 4E (B11) Vertebrate Sulfide C	es (B13) dor (C1)		RA	Secon Wa Dr	dary In ater-Sta 4A, a i ainage y-Seas turation	dicator ained L nd 4B) Patterr on Wat n Visibl	s (2 or n eaves (E ns (B10) ter Table e on Ae	e (C2)
YDROLO Vetland Hydrimary Indic Surface V High Wa Saturatic Water Ma Sedimen Drift Dep	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3)	S:		Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Rhizosphe	es (B13) dor (C1) eres along	Living Roo	RA	Secon Wa Dr Dr Sa Gee	dary In ater-Sta 4A, a i ainage y-Seas uturation eomorp	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D:	e (C2)
YDROLO Vetland Hydrimary Indic Surface V High Wa Saturatic Water Mi Sedimen Drift Dep Algal Ma	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4)	S:		Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Reduced to the control Reduced to th	es (B13) odor (C1) eres along ed Iron (C	Living Roo 4)	RA ots (C3)	Secon War Dr. Dr. Sa Ge Sh	dary In ater-Sta 4A, ai ainage y-Seas ituration comorp iallow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc	s (2 or n eaves (f ns (B10) ter Table e on Ae sition (D: d (D3)	e (C2)
YDROLO Vetland Hyd Surface V High Wa Saturatio Water Mi Sedimen Drift Dep Algal Ma	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) osits (B5)	S:		Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Reduction Reduction	es (B13) dor (C1) eres along ed Iron (C- ion in Tille	Living Roo 4) d Soils (C6	RA ots (C3)	Secon Wa Dr Dr Sa Ge	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes	s (2 or neaves (for the seaves	39) (MLRA 1 e (C2) rial Imagery (
YDROLO Vetland Hyd Primary India Surface V High Wa Saturation Water Ma Sedimen Drift Dep Algal Ma Iron Dep	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6)	s: one requ	uired; cho	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Reduction Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Secon Wa Dr. Dr. Sa Ge Sh FA	dary In ater-Sta 4A, an ainage y-Seas aturation comorp hallow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitard tral Tes nt Moun	s (2 or n eaves (B10) ter Table e on Ae sition (D3) st (D5) nds (D6)	(C2) rial Imagery (LRR A)
YDROLO Vetland Hyd Primary India Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundation	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) osits (B5)	s: one requ	uired; che	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Reduction Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Secon Wa Dr. Dr. Sa Ge Sh FA	dary In ater-Sta 4A, an ainage y-Seas aturation comorp hallow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitard tral Tes nt Moun	s (2 or neaves (for the seaves	(C2) rial Imagery (LRR A)
YDROLO Vetland Hydrimary Indic Surface V High Wa Saturatic Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatic	GY drology Indicators cators (minimum of water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aerial	s: one requ	uired; che	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Reduction Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Secon Wa Dr. Dr. Sa Ge Sh FA	dary In ater-Sta 4A, an ainage y-Seas aturation comorp hallow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitard tral Tes nt Moun	s (2 or n eaves (B10) ter Table e on Ae sition (D3) st (D5) nds (D6)	(C2) rial Imagery (LRR A)
YDROLO Vetland Hyderimary Indice Surface Version High War Saturation Water Mithology Common Drift Dep Algal Ma Iron Dep Surface Services Inundation Sparsely	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) ot Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concav vations:	s: one requ	uired; che	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	ined Leaven A, and 4E (B11) vertebrate Sulfide Control Reduction R	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Secon Wa Dr. Dr. Sa Ge Sh FA	dary In ater-Sta 4A, an ainage y-Seas aturation comorp hallow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitard tral Tes nt Moun	s (2 or n eaves (B10) ter Table e on Ae sition (D3) st (D5) nds (D6)	(C2) rial Imagery (LRR A)
YDROLO Vetland Hyd Surface V High Wa Saturatio Water Mi Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Obser	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) ot or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concavations: er Present?	s: one requ Imagery /e Surface	uired; chu (B7) ee (B8)	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leav A, and 4B (B11) vertebrate Sulfide C Rhizosphe of Reduct n Reduct Stressed blain in Re	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Secon Wa Dr. Dr. Sa Ge Sh FA	dary In ater-Sta 4A, an ainage y-Seas aturation comorp hallow A	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitard tral Tes nt Moun	s (2 or n eaves (B10) ter Table e on Ae sition (D3) st (D5) nds (D6)	(C2) rial Imagery (LRR A)
YDROLO Vetland Hydromary Indice Surface Version Surface Surface Surface Surface Surface Surface Surface Water Table	drology Indicators cators (minimum of water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present?	Imagery ve Surface Yes Yes Yes	(B7) e (B8) No No	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leaven A, and 4E (B11) vertebrate Sulfide Con Reduction Reduction Reduction Reduction Research Stressed Splain in Research Stressed Splain in Research Stressed Splain in Research	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D	Living Roo 4) d Soils (Co 1) (LRR A	RA ots (C3)	Secon Wa Dr Dr Sa Ge Sh FA	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A C-Neu ised Ai ost-Hea	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes nt Mour ave Hur	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D2 d (D3) st (D5) nds (D6) mmocks	e (C2) rial Imagery (CRR A) (D7)
YDROLO Vetland Hyd Surface V High Wa Saturatio Water Mi Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Table Saturation Princludes cap	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? resent? pillary fringe)	Imagery /e Surfac Yes Yes Yes Yes Yes Yes	uired; che (B7) ee (B8) No No No No No No No No No No	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leav A, and 4B (B11) vertebrate Sulfide C Rhizosphe of Reduct Reduct Stressed blain in Re s): 8 s): 0 s): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D- emarks)	Living Roo 4) d Soils (Ce 1) (LRR A	RA ots (C3) i)	Secon Wa Dr. Dr. Sa Ge Sh FA Free	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A C-Neu ised Ai ost-Hea	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes nt Mour ave Hur	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D2 d (D3) st (D5) nds (D6) mmocks	(C2) rial Imagery (LRR A)
YDROLO Vetland Hyde Surface V High Wa Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundation Sparsely Field Observices Surface Water Table Saturation Princludes cap	drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present?	Imagery /e Surfac Yes Yes Yes Yes Yes Yes	uired; che (B7) ee (B8) No No No No No No No No No No	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leav A, and 4B (B11) vertebrate Sulfide C Rhizosphe of Reduct Reduct Stressed blain in Re s): 8 s): 0 s): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D- emarks)	Living Roo 4) d Soils (Ce 1) (LRR A	RA ots (C3) i)	Secon Wa Dr. Dr. Sa Ge Sh FA Free	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A C-Neu ised Ai ost-Hea	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes nt Mour ave Hur	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D2 d (D3) st (D5) nds (D6) mmocks	e (C2) rial Imagery (CRR A) (D7)
Primary Indice Primary Indice Primary Indice Surface Note Indice Primary Indice Surface Note Indice Primary Ind	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? resent? pillary fringe)	Imagery /e Surfac Yes Yes Yes Yes Yes Yes	uired; che (B7) ee (B8) No No No No No No No No No No	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leav A, and 4B (B11) vertebrate Sulfide C Rhizosphe of Reduct Reduct Stressed blain in Re s): 8 s): 0 s): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D- emarks)	Living Roo 4) d Soils (Ce 1) (LRR A	RA ots (C3) i)	Secon Wa Dr. Dr. Sa Ge Sh FA Free	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A C-Neu ised Ai ost-Hea	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes nt Mour ave Hur	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D2 d (D3) st (D5) nds (D6) mmocks	e (C2) rial Imagery (CRR A) (D7)
YDROLO Vetland Hyde Surface V High Wa Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundation Sparsely Field Observices Surface Water Table Saturation Princludes cap	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? resent? pillary fringe)	Imagery /e Surfac Yes Yes Yes Yes Yes Yes	uired; che (B7) ee (B8) No No No No No No No No No No	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leav A, and 4B (B11) vertebrate Sulfide C Rhizosphe of Reduct Reduct Stressed blain in Re s): 8 s): 0 s): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D- emarks)	Living Roo 4) d Soils (Ce 1) (LRR A	RA ots (C3) i)	Secon Wa Dr. Dr. Sa Ge Sh FA Free	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A C-Neu ised Ai ost-Hea	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes nt Mour ave Hur	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D2 d (D3) st (D5) nds (D6) mmocks	e (C2) rial Imagery (CRR A) (D7)
YDROLO Vetland Hyderimary Indice Surface Valler Missediment Drift Dep Algal Ma Iron Dep Surface Surface Surface Water Table Seaturation Perincludes cap Describe Receivers	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aerial vegetated Concar vations: er Present? Present? resent? pillary fringe)	Imagery /e Surfac Yes Yes Yes Yes Yes Yes	uired; che (B7) ee (B8) No No No No No No No No No No	Water-Sta 1, 2, 4. Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ined Leav A, and 4B (B11) vertebrate Sulfide C Rhizosphe of Reduct Reduct Stressed blain in Re s): 8 s): 0 s): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille d Plants (D- emarks)	Living Roo 4) d Soils (Ce 1) (LRR A	RA ots (C3) i)	Secon Wa Dr. Dr. Sa Ge Sh FA Free	dary In ater-Sta 4A, ai ainage y-Seas aturation eomorp allow A C-Neu ised Ai ost-Hea	dicator ained L nd 4B) Patterr on Wat n Visibl hic Pos aquitarc tral Tes nt Mour ave Hur	s (2 or n eaves (E ns (B10) ter Table e on Ae sition (D2 d (D3) st (D5) nds (D6) mmocks	e (C2) rial Imagery (CRR A) (D7)

Project/Site: Olympic Terrace		City/Cour	nty: Port Ludio	ow, WA	Sampling Date:3/1/17
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP E-1
Investigator(s): C. Wright and W. Hohman					
Landform (hillslope, terrace, etc.): Slope		Local re	lief (concave,	convex, none): Convex	Slope (%): <u>1-5</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)	Lat: 47.89	97354		Long: <u>-122.680348</u>	Datum: Unknown
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes			NWI classifica	tion: None
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	ificantly dis	turbed?	Are "No	ormal Circumstances" pres	sent? Yes ⊠ No □
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map	showing	sampli	ng point le	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒					
Hydric Soil Present? Yes ☐ No ☒			the Sampled		
Wetland Hydrology Present? Yes ☐ No ☒		Wit	thin a Wetlar	nd? Yes □ N	0 🗵
Remarks: SP E-1 is located upland, north of Wetland E.		•			
VEGETATION – Use scientific names of plant	ts.				
	Absolute		nt Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 5 m)			Status	Number of Dominant Sp	
Tsuga heterophylla (Western Hemlock)				That Are OBL, FACW, o	or FAC: <u>0</u> (A)
2				Total Number of Domina Species Across All Strat	
4					` ` ,
Sapling/Shrub Stratum (Plot size: 3 m)	60			Percent of Dominant Sp That Are OBL, FACW, o	ecies or FAC: <u>0</u> (A/B)
1. Gaultheria shallon (Salal)	40	Y	FACU	Prevalence Index work	sheet:
2				Total % Cover of:	Multiply by:
3				OBL species 0	x 1 = <u>0</u>
4				*	x 2 = <u>0</u>
5					x 3 = 0
Herb Stratum (Plot size: 1 m)	40	= Total	Cover		x 4 = <u>460</u>
Polystichum munitum (Pineland Sword Fern)	15	Υ	FACU		x = 0
2				Column Totals: 115	(A) <u>460</u> (B)
3				Prevalence Index	= B/A = 4
4				Hydrophytic Vegetatio	n Indicators:
5				1 - Rapid Test for Hy	
6				2 - Dominance Test	
7				3 - Prevalence Index	
8					daptations ¹ (Provide supporting or on a separate sheet)
9				5 - Wetland Non-Vas	' '
10				☐ Problematic Hydropl	hytic Vegetation¹ (Explain)
11					and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)	<u>15</u>	= 10tai	Cover	be present, unless distu	rbed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 85	0	= Total	Cover	Present? Yes	s □ No ⊠
Remarks:					

Profile Des	cription: (Describ	e to the d	epth ne	eded to docu	ment the i	ndicator	or confirm	n the absence of indicators.)
Depth	Matrix				x Feature:			
(inches)	Color (moist)	%	Colo	r (moist)	<u></u> %	Type ¹	Loc ²	Texture Remarks
0 - 4	10YR 3/2	100			_			<u>Loam</u>
4+	7.5YR 4/6	100						Loam
		_						
			· —					
	-							
17			M D. I	d Matria O	0.0			21 and the Di Dana Linian M Matrix
	oncentration, D=De Indicators: (Appl						ed Sand Gr	rains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
☐ Histosol		icable to a				eu. <i>)</i>		2 cm Muck (A10)
	oipedon (A2)			Sandy Redox (Stripped Matrix				Red Parent Material (TF2)
☐ Black Hi				_oamy Mucky N	, ,) (except	MLRA 1)	☐ Very Shallow Dark Surface (TF12)
	en Sulfide (A4)			oamy Gleyed			,	Other (Explain in Remarks)
_ , ,	d Below Dark Surfa	ice (A11)		Depleted Matrix	` '			,
☐ Thick Da	ark Surface (A12)			Redox Dark Su				³ Indicators of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark	•	7)		wetland hydrology must be present,
	Sleyed Matrix (S4)		☐ F	Redox Depress	ions (F8)			unless disturbed or problematic.
Restrictive	Layer (if present):	:						
Type:			_					
Depth (in	ches):		_					Hydric Soil Present? Yes ☐ No ☒
Remarks:								
HYDROLO	GY							
	drology Indicator	s·						
-	cators (minimum o		red: che	ack all that ann	lv)			Secondary Indicators (2 or more required)
	Water (A1)	r one requi	rou, one	☐ Water-Sta	•	s (B0) (a	vcent MI P	
	ater Table (A2)				A, and 4B)		xcept will	4A, and 4B)
☐ Saturation	, ,			☐ Salt Crust	•	'		☐ Drainage Patterns (B10)
	larks (B1)			Aquatic In	. ,	(R13)		☐ Dry-Season Water Table (C2)
	nt Deposits (B2)			☐ Hydrogen				☐ Saturation Visible on Aerial Imagery (C9)
	posits (B3)						Living Root	_
	at or Crust (B4)			☐ Presence		_	_	Shallow Aquitard (D3)
_	oosits (B5)						d Soils (C6)	
	Soil Cracks (B6)						1) (LRR A)	
	on Visible on Aeria	l Imagery (R7)	Other (Exp			1) (L IXIX A)	Frost-Heave Hummocks (D7)
	/ Vegetated Conca				, , , , , , , , , , , , , , , , , , ,	namo,		Treat real raminosis (51)
Field Obser			(20)					
Surface Wat		Yes □	No 🖂	Depth (inche	s):			
Water Table			No 🖾	Depth (inches				
Saturation P		_	No 🏻	Depth (inches	-		Watle	and Hydrology Present? Yes ☐ No ⊠
	pillary fringe)	1 CO L	140 🖂		-/·		***************************************	
	ecorded Data (strea	ım gauge,	monitor	ing well, aerial	photos, pr	evious ins	spections),	if available:
Remarks: N	o hydrologic indica	tors to a de	epth of '	14 inches.				

Project/Site: Olympic Terrace	(City/Coun	ty: Port Ludle	ow, WA	Sampling Date:3/1/17
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP E-2
Investigator(s): C. Wright and W. Hohman			Section, To	ownship, Range: <u>S21, T28ľ</u>	N, R1E, W.M.
Landform (hillslope, terrace, etc.): Slope		Local rel	ief (concave,	convex, none): Concave	Slope (%): <u>1-3</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)	_ Lat: <u>47.89</u>	97274		Long: -122.680248	Datum: Unknown
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-				ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map				ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □					
Hydric Soil Present? Yes ⊠ No □			he Sampled		. 🗖
Wetland Hydrology Present? Yes ⊠ No □		Wit	hin a Wetlar	nd? Yes ⊠ No	0 □
Remarks: SP E-2 is located in Wetland E.		•			
VEGETATION Has a singliff a name of plant					
VEGETATION – Use scientific names of plant		D	t to Pastan	D	li d
Tree Stratum (Plot size: 5 m)	% Cover		t Indicator Status	Dominance Test works Number of Dominant Sp	
1				That Are OBL, FACW, o	
2				Total Number of Domina	ant
3				Species Across All Strate	
4				Percent of Dominant Spo	ecies
Sapling/Shrub Stratum (Plot size: 3 m)	0	= Total (Cover		r FAC: <u>25</u> (A/B)
1. Gaultheria shallon (Salal)	10	Υ	FACU	Prevalence Index work	sheet:
Vaccinium parvifolium (Red Blueberry)				Total % Cover of:	Multiply by:
3				OBL species 25	x 1 = <u>25</u>
4				FACW species 0	x 2 = <u>0</u>
5			<u> </u>	*	x 3 = <u>0</u>
Harb Stratum (Diet eine 1 m)	<u>15</u>	= Total (Cover		x 4 = <u>100</u>
Herb Stratum (Plot size: 1 m) 1. Carex obnupta (Slough Sedge)	25	v	OBL		x 5 = <u>0</u>
Polystichum munitum (Pineland Sword Fern)				Column Totals: 50	(A) <u>125</u> (B)
3				Prevalence Index	= B/A = 2.5
4				Hydrophytic Vegetation	n Indicators:
5				☐ 1 - Rapid Test for Hy	drophytic Vegetation
6				2 - Dominance Test	is >50%
7				□ 3 - Prevalence Index	: is ≤3.0¹
8			<u> </u>		laptations ¹ (Provide supporting or on a separate sheet)
9				5 - Wetland Non-Vas	'
10				I =	nytic Vegetation¹ (Explain)
11				_ , ,	and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)	<u>35</u>	= Total (Cover	be present, unless distur	
1			. <u></u>	Hydrophytic	
2			<u> </u>	Vegetation	
9/ Para Cround in Horb Stratum 65	0	= Total (Cover		⊠ No □
% Bare Ground in Herb Stratum 65 Remarks:					

Depth	Matrix				lox Feature							
(inches) Co	olor (moist)	<u>%</u>	Colo	r (moist)	%	Type ¹	Loc ²	Texture	<u> </u>		Remarks	
10	YR 5/2	95	10YF	R 5/4	5	С	M	Sandy L	<u>_oam</u>			
												
								-				
		lation F		I Martida			- 1010		21	utione DI	Daniel Calar	. NA . NA = 1 = 2 = 2
	entration, D=Dep icators: (Applications)						ed Sand G					, M=Matrix. /dric Soils³:
Histosol (A1		abie to		Sandy Redox		ieu.)				Muck (A10		dile solis .
Histic Epipe				Stripped Matrix						`	erial (TF2)	
Black Histic				oamy Mucky	. ,	1) (excep	MLRA 1)				ark Surface	(TF12)
_ ☐ Hydrogen S	` '			_oamy Gleyed			,				n Remarks)	. ,
	elow Dark Surface	e (A11)		Depleted Matri		,				` .	,	
Thick Dark	Surface (A12)		□ F	Redox Dark S	urface (F6))		3In	dicator	s of hydrop	phytic vege	tation and
	xy Mineral (S1)			Depleted Dark	,	F7)				-	gy must be	
	ed Matrix (S4)		☐ F	Redox Depres	sions (F8)				unless	disturbed	or problem	atic.
estrictive Lay	er (if present):											
• •												
Depth (inche	s):							Hydrid		Procont?	Yes 🛚	No 🗌
	<i>5</i>):							Tiyund	3011	resent:	163 🖂	
Remarks:	1							Tiyund	3 3011 1	resent	163 23	
Remarks: YDROLOG\	/ logy Indicators:											
Remarks: YDROLOGY Vetland Hydro Primary Indicato	f logy Indicators: ors (minimum of o								Second	dary Indica	ators (2 or n	nore required)
YDROLOGY Wetland Hydro Irimary Indicato ☑ Surface Wa	(logy Indicators: ors (minimum of o ter (A1)			☐ Water-Sta	ained Leav		xcept MLF		Second	dary Indica ter-Stained	ators (2 or n d Leaves (E	
PROLOGY Vetland Hydro rimary Indicate Surface War High Water	logy Indicators: ors (minimum of oter (A1) Table (A2)			☐ Water-Sta	ained Leav		xcept MLF	RA	Second □ Wa	dary Indica ter-Stained 4A, and 4	ators (2 or n d Leaves (E	nore required) 39) (MLRA 1, 2,
PROLOGY Vetland Hydro rimary Indicate Surface Wat High Water Saturation (A	logy Indicators: ors (minimum of oter (A1) Table (A2) A3)			☐ Water-Sta 1, 2, 4 ☐ Salt Crus	ained Leav 4A, and 4E t (B11)	3)	xcept MLF	RA I	Secono □ Wa	dary Indica ter-Stained 4A, and 4 ninage Pati	ators (2 or n d Leaves (E IB) terns (B10)	nore required) 39) (MLRA 1, 2,
/DROLOGY /etland Hydro /rimary Indicate // Surface Wa // High Water // Saturation (A) // Water Marks	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1)			☐ Water-Standard Nation 1, 2, 4 ☐ Salt Crus ☐ Aquatic In	ained Leav 1A, and 4E t (B11) nvertebrate	B) es (B13)	xcept MLF	RA I	Second □ Wa □ Dra □ Dry	dary Indica ter-Stained 4A, and 4 hinage Patt r-Season V	ators (2 or n d Leaves (E BB) terns (B10) Vater Table	nore required) 39) (MLRA 1, 2,
/DROLOGY // Vetland Hydro // imary Indicate // Surface War // High Water // Saturation (A) // Water Marks // Sediment Di	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2)			☐ Water-Sta 1, 2, 4 ☐ Salt Crus ☐ Aquatic In ☐ Hydroger	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O	es (B13) dor (C1)		RA I	Second Wa Dra Dry Sat	dary Indica ter-Stained 4A, and 4 hinage Patt r-Season V curation Vis	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae	nore required) 39) (MLRA 1, 2, e (C2) rial Imagery (C9
YDROLOGY Vetland Hydro Vetland	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3)			Water-Standard Water-Standard Water-Standard Water-Standard Crus Aquatic Ir Hydroger Oxidized	ained Leaver AA, and 4E t (B11) invertebrate Sulfide OR Rhizosphe	es (B13) dor (C1) eres along	Living Roo	RA	Second Wa Dra Dra Dry Sat	dary Indica ter-Stained 4A, and 4 hinage Patt r-Season V curation Vis omorphic F	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2	nore required) 39) (MLRA 1, 2, e (C2) rial Imagery (C9
Verland Hydro Vetland Hydro Ve	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4)			Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduce	es (B13) dor (C1) eres along ed Iron (C	Living Roo 1)	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Vis omorphic Fallow Aquit	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3)	nore required) 39) (MLRA 1, 2, e (C2) rial Imagery (C9
YDROLOGY Vetland Hydro Vetland Hydro Surface Wa High Water Saturation (a Water Marks Sediment Do Drift Deposit Algal Mat or	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5)			Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Leav 4A, and 4E t (B11) envertebrate a Sulfide O Rhizosphe e of Reduce on Reduct	es (B13) dor (C1) eres along ed Iron (C- ion in Tille	Living Roo 4) d Soils (C6	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha	dary Indica ter-Stained 4A, and 4 inage Patt r-Season Visuration Vis omorphic F allow Aquit C-Neutral	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, e (C2) rial Imagery (C9
YDROLOGY Vetland Hydro Vetland Hydro Surface War High Water Saturation (A Sediment Deposit Algal Mat or Iron Deposit Surface Soil	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ss (B5) Cracks (B6)	ne requ	ired; che	Water-Stanta 1, 2, 4 Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted of	ained Leave 4A, and 4E t (B11) Invertebrate in Sulfide O Rhizosphe e of Reduction Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 1)	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stainer 4A, and 4 hinage Path r-Season V ruration Vis comorphic F allow Aquit C-Neutral	ators (2 or n d Leaves (E BB) terns (B10) Vater Table sible on Aer Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, 4 (C2) rial Imagery (C9 2)
YDROLOGY Vetland Hydro Vetland Hydro Surface War High Water Saturation (A Water Mark: Sediment D Drift Deposit Algal Mat or Iron Deposit Surface Soil	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial In	ne requ	ired; che	Water-Stanta 1, 2, 4 Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted of	ained Leav 4A, and 4E t (B11) envertebrate a Sulfide O Rhizosphe e of Reduce on Reduct	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stainer 4A, and 4 hinage Path r-Season V ruration Vis comorphic F allow Aquit C-Neutral	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ael Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, 4 (C2) rial Imagery (C9 2)
Verland Hydro Vetland Hydro Ve	logy Indicators: ors (minimum of orter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) cs (B5) Cracks (B6) //isible on Aerial Ingetated Concave	ne requ	ired; che	Water-Stanta 1, 2, 4 Salt Crus Aquatic In Hydroger Oxidized Presence Recent In Stunted of	ained Leave 4A, and 4E t (B11) Invertebrate in Sulfide O Rhizosphe e of Reduction Reduction Stressed	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stainer 4A, and 4 hinage Path r-Season V ruration Vis comorphic F allow Aquit C-Neutral	ators (2 or n d Leaves (E BB) terns (B10) Vater Table sible on Aer Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, 4 (C2) rial Imagery (C9 2)
YDROLOGY Vetland Hydro Primary Indicate Surface Wa High Water Saturation (Water Market Sediment Deposit Algal Mat or Iron Deposit Surface Soil Inundation (Sparsely Ve	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Ingetated Concave	ne requ magery Surface	(B7) e (B8)	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stainer 4A, and 4 hinage Path r-Season V ruration Vis comorphic F allow Aquit C-Neutral	ators (2 or n d Leaves (E BB) terns (B10) Vater Table sible on Aer Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, 4 (C2) rial Imagery (C9 2)
YDROLOGY Vetland Hydro Vetland Hydro Vimary Indicate Surface Water Saturation (A Water Marks Sediment D Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation (A Sparsely Veteld Observate Surface Water F	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Ingetated Concave ions: Present? Y	ne requ magery Surface	(B7) e (B8)	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leav 4A, and 4E t (B11) nvertebrate a Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stainer 4A, and 4 hinage Path r-Season V ruration Vis comorphic F allow Aquit C-Neutral	ators (2 or n d Leaves (E BB) terns (B10) Vater Table sible on Aer Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, 4 (C2) rial Imagery (C9 2)
YDROLOGY Vetland Hydro Primary Indicate Surface Water High Water Saturation (A) Sediment Do Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation \ Sparsely Veter Field Observat Water Table Pre	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) Cracks (B6) //sible on Aerial Ingetated Concave ions: Present? Y	magery Surface es ⊠ es ⊠	(B7) e (B8) No No	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven 44, and 45 t (B11) invertebrate in Sulfide O Rhizosphe of Reduction Reduction Stressed explain in Research in Research 25 to	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 4) d Soils (C6 1) (LRR A	RA	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Visomorphic Fallow Aquit C-Neutral Consed Ant Most-Heave I	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3) Test (D5) lounds (D6) Hummocks	e (C2) rial Imagery (C9 c) (LRR A) (D7)
YDROLOGY Vetland Hydro Vetland Hydro Vetland Hydro Surface Wat High Water Saturation (A Sediment Do Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation \ Sparsely Veter Vater Table Presentation Presentation	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Ingetated Concave ions: Present? esent? Y ent? Y	magery Surface es ⊠ es ⊠	(B7) e (B8)	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co Other (Ex	ained Leaven 44, and 45 t (B11) invertebrate in Sulfide O Rhizosphe of Reduction Reduction Stressed explain in Research in Research 25 to	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (D	Living Roo 4) d Soils (C6 1) (LRR A	RA	Second Wa Dra Dry Sat Ge Sha FA	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Visomorphic Fallow Aquit C-Neutral Consed Ant Most-Heave I	ators (2 or n d Leaves (E BB) terns (B10) Vater Table sible on Aer Position (D2 tard (D3) Test (D5)	nore required) 39) (MLRA 1, 2, 4 (C2) rial Imagery (C9 2)
YDROLOGY Vetland Hydro Vetland Hydro Vetland Hydro Strimary Indicate Surface War High Water Saturation (A High Water Sediment D Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation (A Sparsely Vetral Color of the Co	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Ingetated Concave ions: Present? esent? Y ent? Y	magery Surface es <table-cell> es 🖂 es 🖂</table-cell>	(B7) e (B8) No No No No No	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re es): 8 es): 0 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A	RA	Second Waa Dra Dry Sat Ge Sha FA	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Visomorphic Fallow Aquit C-Neutral Consed Ant Most-Heave I	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3) Test (D5) lounds (D6) Hummocks	e (C2) rial Imagery (C9 c) (LRR A) (D7)
YDROLOGY Vetland Hydro Primary Indicate Surface War High Water Saturation (Water Marks Sediment Do Iron Deposit Iron Deposit Surface Soil Inundation \ Sparsely Verical Observat Surface Water For Saturation Presincludes capillat Describe Record	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) I Cracks (B6) /isible on Aerial Ir getated Concave ions: Present? esent? y ent? y ry fringe)	magery Surface es <table-cell> es 🖂 es 🖂</table-cell>	(B7) e (B8) No No No No No	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re es): 8 es): 0 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A	RA	Second Waa Dra Dry Sat Ge Sha FA	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Visomorphic Fallow Aquit C-Neutral Consed Ant Most-Heave I	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3) Test (D5) lounds (D6) Hummocks	e (C2) rial Imagery (C9 c) (LRR A) (D7)
YDROLOGY Vetland Hydro Vetland Hydro Vetland Hydro ✓ Surface Wat ✓ High Water ✓ Saturation (A ✓ Surface Marks ☐ Drift Deposit ☐ Iron Deposit ☐ Iron Deposit ☐ Inundation \ ☐ Sparsely Veter Gurface Water For Vater Table Presincludes capilla	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) I Cracks (B6) /isible on Aerial Ir getated Concave ions: Present? esent? y ent? y ry fringe)	magery Surface es <table-cell> es 🖂 es 🖂</table-cell>	(B7) e (B8) No No No No No	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re es): 8 es): 0 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A	RA	Second Waa Dra Dry Sat Ge Sha FA	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Visomorphic Fallow Aquit C-Neutral Consed Ant Most-Heave I	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3) Test (D5) lounds (D6) Hummocks	e (C2) rial Imagery (C9 c) (LRR A) (D7)
YDROLOGY Vetland Hydro Primary Indicate Surface War High Water Saturation (A) Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation (A) Sparsely Veticled Observat Surface Water Foundation Presincludes capillat Describe Record	logy Indicators: ors (minimum of oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) s (B5) I Cracks (B6) /isible on Aerial Ir getated Concave ions: Present? esent? y ent? y ry fringe)	magery Surface es <table-cell> es 🖂 es 🖂</table-cell>	(B7) e (B8) No No No No No	Water-Sta 1, 2, 4 I, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leav 4A, and 4E t (B11) nvertebrate n Sulfide O Rhizosphe e of Reduct on Reduct or Stressed xplain in Re es): 8 es): 0 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A	RA	Second Waa Dra Dry Sat Ge Sha FA	dary Indica ter-Stained 4A, and 4 inage Pati r-Season Visuration Visomorphic Fallow Aquit C-Neutral Consed Ant Most-Heave I	ators (2 or n d Leaves (E IB) terns (B10) Water Table sible on Ae Position (D2 tard (D3) Test (D5) lounds (D6) Hummocks	e (C2) rial Imagery (C9 c) (LRR A) (D7)

Project/Site: Olympic Terrace		City/Count	y: <u>Port Ludlo</u>	ow, WA	Sampling Date:3/1/17
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP F-1
Investigator(s): C. Wright and W. Hohman					
Landform (hillslope, terrace, etc.): Slope		Local relie	ef (concave,	convex, none): Convex	Slope (%): <u>1-5</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)					
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent				-	
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign					ent? Yes⊠ No □
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
SolimART OF FINDINGS - Attach site map :	silowing	Sampiin	g point it	ocations, transects,	important reatures, etc.
Hydrophytic Vegetation Present? Yes ☐ No ☒		Is th	ne Sampled	Area	
Hydric Soil Present? Yes ☐ No ☒			in a Wetlar		o 🛛
Wetland Hydrology Present? Yes ☐ No ☒					
Remarks: SP F-1 is located upland of Wetland F.					
VEGETATION – Use scientific names of plant	s.				
			Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 5 m) 1. Alnus rubra (Red Alder)	% Cover			Number of Dominant Sp	
	<u>40</u> <u>20</u>			That Are OBL, FACW, o	r FAC: <u>2</u> (A)
Thuja plicata (Western Arborvitae)				Total Number of Domina Species Across All Strat	
4					、,
	70			Percent of Dominant Spart Are OBL FACW of	ecies r FAC: <u>40</u> (A/B)
Sapling/Shrub Stratum (Plot size: 3 m)					
1. Rubus spectabilis (Salmon Raspberry)				Prevalence Index work	
2. Vaccinium parvifolium (Red Blueberry)					Multiply by:
3					x 1 = 0 x 2 = 0
4				*	$\times 2 = 0$ $\times 3 = 240$
5	50			*	x = 320
Herb Stratum (Plot size: 1 m)	<u>00</u>	- Total C	,0101		x 5 = 0
Polystichum munitum (Pineland Sword Fern)	40	<u>Y</u>	FACU	Column Totals: 160	
2					D/A 0.7
3				Prevalence Index	
4				Hydrophytic Vegetation 1 - Rapid Test for Hy	
5				2 - Dominance Test	
6				3 - Prevalence Index	
7					daptations ¹ (Provide supporting
8 9					or on a separate sheet)
10				5 - Wetland Non-Vas	scular Plants ¹
11.				☐ Problematic Hydroph	nytic Vegetation1 (Explain)
	40			¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)				be present, unless distu	bed of problematic.
1				Hydrophytic	
2				Vegetation	□ No 17
% Bare Ground in Herb Stratum 60	0	= rotarC	over	Present? Yes	s □ No ⊠
Remarks:				1	

Profile Des	cription: (Describ	e to the c	lepth ne	eded to docu	ment the i	ndicator	or confirm	n the absence of indicators.)
Depth	Matrix			Redo	ox Feature	S		
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	Texture Remarks
0 - 4	10YR 3/2	100						Silt Loam
4 - 14+	7.5YR 4/6	100						GSiCl Loam
			_					·
1Type: C=C	oncentration, D=D	enletion F	M-Rad	uced Matrix C	S-Covered	d or Coate	ad Sand Gr	rains. ² Location: PL=Pore Lining, M=Matrix.
	Indicators: (Appl			•			od Sand Oi	Indicators for Problematic Hydric Soils ³ :
☐ Histosol				Sandy Redox (,		2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix				Red Parent Material (TF2)
☐ Black Hi				_oamy Mucky N	. ,) (except	MLRA 1)	☐ Very Shallow Dark Surface (TF12)
☐ Hydroge	en Sulfide (A4)		□ I	oamy Gleyed	Matrix (F2))		☐ Other (Explain in Remarks)
☐ Depleted	d Below Dark Surfa	ce (A11)		Depleted Matrix	(F3)			
	ark Surface (A12)			Redox Dark Su	` ,			³ Indicators of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark	•	7)		wetland hydrology must be present,
_	Bleyed Matrix (S4)		∐ F	Redox Depress	sions (F8)			unless disturbed or problematic.
	Layer (if present):							
Type:								
	ches):		_					Hydric Soil Present? Yes ☐ No ☒
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicator	s:						
Primary Indi	cators (minimum o	f one requ	ired; che	eck all that app	ly)			Secondary Indicators (2 or more required)
Surface	Water (A1)	-		☐ Water-Sta	ined Leave	es (B9) (e	xcept MLR	RA Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table (A2)				A, and 4B		•	4A, and 4B)
☐ Saturation	, ,			☐ Salt Crust		,		☐ Drainage Patterns (B10)
_	larks (B1)			☐ Aquatic In	` '	s (B13)		☐ Dry-Season Water Table (C2)
	nt Deposits (B2)			☐ Hydrogen				☐ Saturation Visible on Aerial Imagery (C9)
	posits (B3)						Living Root	
-	at or Crust (B4)			☐ Presence		_	_	☐ Shallow Aquitard (D3)
	oosits (B5)					•	d Soils (C6)	
-	Soil Cracks (B6)						1) (LRR A)	
☐ Inundati	on Visible on Aeria	Imagery	(B7)	☐ Other (Exp				☐ Frost-Heave Hummocks (D7)
	Vegetated Conca					·		, ,
Field Obser	vations:							
Surface Wat	ter Present?	Yes 🗌	No 🖂	Depth (inche	s):			
Water Table	Present?	Yes 🗌	No 🛛	Depth (inche	s):			
Saturation P		_	No 🏻	Depth (inche			Wetla	and Hydrology Present? Yes ☐ No ⊠
(includes ca	pillary fringe)							
Describe Re	ecorded Data (strea	ım gauge,	monitor	ing well, aerial	photos, pr	evious ins	spections),	if available:
Remarks:								

Project/Site: Olympic Terrace		City/Coun	ty: Port Ludlo	ow, WA	Sampling Date: 3/1/17		
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP F-2		
Investigator(s): C. Wright and W. Hohman			Section, To	ownship, Range: <u>S21, T28</u>	N, R1E, W.M.		
Landform (hillslope, terrace, etc.): Slope		Local reli	ef (concave,	convex, none): Concave	Slope (%):	: <u>1-3</u>	
Subregion (LRR): Northwest Forests & Coasts (LRR A)	_ Lat: 47.89	97434		Long: <u>-122.681389</u>	Datum: Unk	nown	
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes			NWI classificat	tion: None		
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology sign							
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in			
SUMMARY OF FINDINGS – Attach site map s						s, etc.	
Hydrophytic Vegetation Present? Yes ⊠ No □							
Hydric Soil Present? Hydric Soil Present? Yes No			he Sampled		_		
Wetland Hydrology Present? Yes ⊠ No □		witl	nin a Wetlar	nd? Yes ⊠ No	o 📙		
Remarks: SP F-2 is located in Wetland F, near flag F-11.		I					
VEGETATION – Use scientific names of plant							
VEGETATION – Ose scientific flames of plant		Dominan	t Indicator	Dominance Test works	sheet:		
Tree Stratum (Plot size: 5 m)			Status	Number of Dominant Sp			
1. Alnus rubra (Red Alder)	25	Y	FAC	That Are OBL, FACW, o		(A)	
2. Thuja plicata (Western Arborvitae)	25	<u>Y</u>	FAC	Total Number of Domina	ant		
3				Species Across All Strata	a: <u>5</u>	(B)	
4				Percent of Dominant Spe			
Sapling/Shrub Stratum (Plot size: 3 m)	50	= Total (Cover	That Are OBL, FACW, o	r FAC: <u>100</u>	(A/B)	
Rubus spectabilis (Salmon Raspberry)	25	Υ	FAC	Prevalence Index work	sheet:		
2				Total % Cover of:	Multiply by:	_	
3				OBL species	x 1 =	_	
4				FACW species			
5				FAC species			
Herb Stratum (Plot size: 1 m)	<u>25</u>	= Total (Cover	FACU species			
Carex obnupta (Slough Sedge)	5	Υ	OBL	UPL species Column Totals:			
Oenanthe sarmentosa (Pacific Water-Dropwort)				Column Totals.	(A)	_ (D)	
3				Prevalence Index	= B/A =		
4				Hydrophytic Vegetation	n Indicators:		
5				☐ 1 - Rapid Test for Hy			
6				2 - Dominance Test			
7				3 - Prevalence Index			
8				4 - Morphological Addata in Remarks	daptations! (Provide supported on a separate sheet)		
9				5 - Wetland Non-Vas	scular Plants ¹		
10				☐ Problematic Hydroph	nytic Vegetation¹ (Explai	n)	
11	10			¹ Indicators of hydric soil		nust	
Woody Vine Stratum (Plot size: 3 m)	10	= Total C	Jovei	be present, unless distur	ibed or problematic.		
1				Hydrophytic			
2				Vegetation			
% Bare Ground in Herb Stratum 90	0	= Total (Cover	Present? Yes	s⊠ No □		
Remarks:							

Profile Des	Matrix			ם ٨٨	ox Feature	90				
(inches)	Color (moist)	%	Colo	or (moist)	<u>%</u>	Type ¹	Loc ²	Textur	<u>e</u>	Remarks
0 - 12	10YR 5/2	95	10Y	R 5/4	5	С	М	Sandy	Loam	
					_					
-										
17				la caral Matrice C					21	etian Di Dan Linian M Matrix
	Concentration, D=De Indicators: (Appl						ed Sand Gr			ation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
☐ Histosol		icable to		Sandy Redox (ieu.)				Muck (A10)
	pipedon (A2)			Stripped Matrix						Parent Material (TF2)
	istic (A3)			_oamy Mucky	. ,	1) (excep	t MLRA 1)			Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)			_oamy Gleyed			,		-	(Explain in Remarks)
☐ Depleted	d Below Dark Surfa	ce (A11)	⊠ I	Depleted Matri	x (F3)					
	ark Surface (A12)			Redox Dark Su	, ,			³ lr		s of hydrophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark		7)				nd hydrology must be present,
	Gleyed Matrix (S4) Layer (if present):			Redox Depress	sions (F8)			1	unless	disturbed or problematic.
	t \								- 0-11	D
Depth (in Remarks:	nches):							Hydri	c Soil	Present? Yes ⊠ No □
Wetland Hy	drology Indicator									
Wetland Hy	drology Indicator		uired; che							dary Indicators (2 or more required)
Wetland Hy Primary Indi ☑ Surface	drology Indicator cators (minimum of Water (A1)		uired; cho	☐ Water-Sta	ined Leav	. , .	except MLR	RA		ater-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi ☑ Surface ☑ High Wa	rdrology Indicator icators (minimum of Water (A1) ater Table (A2)		uired; che	☐ Water-Sta	ained Leav	. , .	except MLR	RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi ☐ Surface ☐ High Wa ☐ Saturation	rdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3)		uired; che	☐ Water-Sta	ained Leav A, and 4B (B11)	3)	except MLR	 RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10)
Wetland Hy Primary Indi ☐ Surface ☐ High Wa ☐ Saturatic ☐ Water M	rdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)		uired; ch	☐ Water-Sta 1, 2, 4 ☐ Salt Crust ☐ Aquatic In	ained Leav A, and 4B (B11) overtebrate	s (B13)	except MLR	RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2)
Wetland Hy Primary Indi ☐ Surface ☐ High Wa ☐ Saturatio ☐ Water M ☐ Sedimen	rdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2)		uired; cho	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen	And 4E (B11) avertebrate Sulfide O	s (B13) dor (C1)	·		☐ Wa	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Aninage Patterns (B10) Ar-Season Water Table (C2) Atturation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer □ Drift Dep	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)		uired; cho	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized	An and 4E (B11) (B15) (B16) (B16) (B16) (B16) (B16)	s (B13) dor (C1) res along	Living Roo		☐ Wa	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ainage Patterns (B10) A-Season Water Table (C2) Atturation Visible on Aerial Imagery (C9) Amonomorphic Position (D2)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer □ Drift Dep Algal Ma	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) int Deposits (B2) posits (B3) at or Crust (B4)		uired; che	Water-State 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence	ined Leav A, and 4E (B11) evertebrate Sulfide O Rhizosphe of Reduce	s (B13) dor (C1) res along	Living Roo 4)	ts (C3)	☐ Wa	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Anianage Position (D2) Allow Aquitard (D3)
Wetland Hy Primary Indi Surface High Wa Saturatia Water M Sedimer □ Drift Dep □ Algal Ma □ Iron Dep	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		uired; chi	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Iro	ined Leaver A. A. and 4E (B11) Invertebrate Sulfide Or Rhizosphe of Reduce on Reduction	s (B13) dor (C1) res along ed Iron (Co	Living Roo 4) d Soils (C6	ts (C3)	Dra Dry Sa Gee	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Anianage Patterns (D2) Anianage Patterns (D2) Allow Aquitard (D3) C-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	f one requ		Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Iro Stunted o	Ained Leaver. A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed	s (B13) dor (C1) res along ed Iron (Coon in Tille Plants (C	Living Roo 4)	ts (C3)	Dra Dry Sa Ge Sh Ra	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ainage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Allow Aquitard (D3) C-Neutral Test (D5) Aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria	one requ	· (B7)	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Iro Stunted o	ined Leaver A. A. and 4E (B11) Invertebrate Sulfide Or Rhizosphe of Reduce on Reduction	s (B13) dor (C1) res along ed Iron (Coon in Tille Plants (C	Living Roo 4) d Soils (C6	ts (C3)	Dra Dry Sa Ge Sh Ra	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Anianage Patterns (D2) Anianage Patterns (D2) Allow Aquitard (D3) C-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	one requ	· (B7)	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Iro Stunted o	Ained Leaver. A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed	s (B13) dor (C1) res along ed Iron (Coon in Tille Plants (C	Living Roo 4) d Soils (C6	ts (C3)	Dra Dry Sa Ge Sh Ra	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ainage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Allow Aquitard (D3) C-Neutral Test (D5) Aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	f one required in the second s	(B7) be (B8)	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Irc Stunted o Other (Ex	ined Leaver, and 4B, and 4B, and 4B, and 4B, and	s (B13) dor (C1) res along ed Iron (Coon in Tille Plants (C	Living Roo 4) d Soils (C6	ts (C3)	Dra Dry Sa Ge Sh Ra	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ainage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Allow Aquitard (D3) C-Neutral Test (D5) Aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Concarvations: ter Present?	Imagery	e (B7) ce (B8)	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ined Leaver A, and 4E (B11) evertebrate Sulfide Or Reduce on Reduction Stressed plain in Research	s (B13) dor (C1) res along ed Iron (Coon in Tille Plants (D	Living Roo 4) d Soils (C6	ts (C3)	Dra Dry Sa Ge Sh Ra	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ainage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Allow Aquitard (D3) C-Neutral Test (D5) Aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Concar rvations: ter Present?	I Imagery ve Surface Yes Yes Yes	(B7) se (B8) No No	Water-Sta 1, 2, 4 Salt Crust Aquatic In Hydrogen Oxidized Presence Recent Ird Stunted o Other (Ex	inined Leaver A, and 4E (B11) evertebrate Sulfide Or Reduce on Reduction Resulting r Stressed plain in Resulting Stressed (B15): 4	s (B13) dor (C1) res along ed Iron (Coon in Tille Plants (D	Living Roo 4) d Soils (C6 11) (LRR A)	ts (C3)	☐ Wa ☐ Dra ☐ Dry ☐ Sa ☐ Ge ☐ Sh ☐ FA	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Aturation Visible on Aerial Imagery (C9) Anianage Position (D2) Allow Aquitard (D3) C-Neutral Test (D5) Anised Ant Mounds (D6) (LRR A) Aniset Position (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Concar rvations: ter Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes Yes	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed plain in Re es): 4 es): 0 es): 0	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (C- marks)	Living Roo 4) d Soils (C6 01) (LRR A)	ts (C3)) and Hyd	☐ Wa ☐ Dra ☐ Dny ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fro	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Ainage Patterns (B10) A-Season Water Table (C2) Attraction Visible on Aerial Imagery (C9) Allow Aquitard (D3) C-Neutral Test (D5) Aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Concar rvations: ter Present? Present?	I Imagery ve Surfac Yes Yes Yes Yes Yes Yes	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex Depth (inche	A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed plain in Re es): 4 es): 0 es): 0	s (B13) dor (C1) res along ed Iron (C- on in Tille Plants (C- marks)	Living Roo 4) d Soils (C6 01) (LRR A)	ts (C3)) and Hyd	☐ Wa ☐ Dra ☐ Dny ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fro	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Aturation Visible on Aerial Imagery (C9) Anianage Position (D2) Allow Aquitard (D3) C-Neutral Test (D5) Anised Ant Mounds (D6) (LRR A) Aniset Position (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Concar rvations: ter Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes Yes	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex Depth (inche	A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed plain in Re es): 4 es): 0 es): 0	s (B13) dor (C1) res along ed Iron (C- on in Tille Plants (C- marks)	Living Roo 4) d Soils (C6 01) (LRR A)	ts (C3)) and Hyd	☐ Wa ☐ Dra ☐ Dny ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fro	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Aturation Visible on Aerial Imagery (C9) Anianage Position (D2) Allow Aquitard (D3) C-Neutral Test (D5) Anised Ant Mounds (D6) (LRR A) Aniset Position (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Concar rvations: ter Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes Yes	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex Depth (inche	A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed plain in Re es): 4 es): 0 es): 0	s (B13) dor (C1) res along ed Iron (C- on in Tille Plants (C- marks)	Living Roo 4) d Soils (C6 01) (LRR A)	ts (C3)) and Hyd	☐ Wa ☐ Dra ☐ Dny ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fro	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Aturation Visible on Aerial Imagery (C9) Anianage Position (D2) Allow Aquitard (D3) C-Neutral Test (D5) Anised Ant Mounds (D6) (LRR A) Aniset Position (D7)
Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Water Table Saturation F (includes ca	rdrology Indicator: icators (minimum of Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Concar rvations: ter Present? Present? pillary fringe)	I Imagery ve Surfac Yes Yes Yes Yes Yes Yes	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crust Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex Depth (inche	A, and 4E (B11) Avertebrate Sulfide Or Rhizosphe of Reduce on Reducti r Stressed plain in Re es): 4 es): 0 es): 0	s (B13) dor (C1) res along ed Iron (C- on in Tille Plants (C- marks)	Living Roo 4) d Soils (C6 01) (LRR A)	ts (C3)) and Hyd	☐ Wa ☐ Dra ☐ Dny ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fro	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Anianage Patterns (B10) A-Season Water Table (C2) Aturation Visible on Aerial Imagery (C9) Anianage Position (D2) Allow Aquitard (D3) C-Neutral Test (D5) Anised Ant Mounds (D6) (LRR A) Aniset Position (D7)

Applicant/Owner: Westharbor Homes State: WA Sampling Point: SP Y-1 Investigator(s): K. Kosters and A. Clark Section, Township, Range: S21, T28N, R1E, W.M. Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1-3 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.898040 Long: -122.680672 Datum: Unknown Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent slopes 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 No (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, explain any answers in Remarks.)	n
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1-3 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.898040 Long: -122.680672 Datum: Unknown Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent slopes 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 No (If needed, explain any answers in Remarks.)	n
Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.898040 Long: -122.680672 Datum: Unknown Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent slopes NWI classification: None Are climatic / hydrologic conditions on the site typical for this time of year? Yes \(\text{No} \) No \(\text{(If no, explain in Remarks.)} \) Are Vegetation \(\text{Normal Circumstances} \) Posent? Yes \(\text{No} \) No \(\text{If needed, explain any answers in Remarks.)} \)	n
Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.898040 Long: -122.680672 Datum: Unknown Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent slopes NWI classification: None Are climatic / hydrologic conditions on the site typical for this time of year? Yes \(\text{No} \) No \(\text{(If no, explain in Remarks.)} \) Are Vegetation \(\text{Normal Circumstances} \) Posent? Yes \(\text{No} \) No \(\text{If needed, explain any answers in Remarks.)} \)	n
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent slopes 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 Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)	
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 \(\) naturally problematic? Are Vegetation \(\), Soil \(\), or Hydrology \(\) naturally problematic? (If needed, explain any answers in Remarks.)	etc.
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes \(\subseteq \) No \(\subseteq \) Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)	etc.
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)	etc.
	etc.
Solimant of Findings - Attach site map showing sampling point locations, transects, important leatures, e	
Hydrophytic Vegetation Present? Yes No Is the Sampled Area	
Hydric Soil Present? Yes ⊠ No ☐ within a Wetland? Yes ⊠ No ☐	
Wetland Hydrology Present? Yes ☑ No ☐ Remarks: SP Y-1 is located in Wetland Y.	
Remarks. SP 1-1 is located in Wetland 1.	
VEGETATION – Use scientific names of plants.	
Absolute Dominant Indicator Dominance Test worksheet:	
Tree Stratum (Plot size: 5 m)	
1. Populus balsamifera (Balsam Poplar) 2. Thuja plicata (Western Arborvitae) 20 Y FAC That Are OBL, FACW, or FAC: 4 (A)	
2. Triula plicata (Western Arbotvitae)	
4	
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B	3)
Sapling/Shrub Stratum (Plot size: 3 m)	"
1. Rubus spectabilis (Salmon Raspberry) 40 Y FAC Prevalence Index worksheet:	
2 Total % Cover of: Multiply by:	
3 OBL species x 1 = 4. FACW species x 2 =	
5 FAC species x 3 = 40 = Total Cover FACU species x 4 =	
Herb Stratum (Plot size: 1 m) UPL species x 5 =	
1. Carex obnupta (Slough Sedge) 50 Y OBL Column Totals: (A)	3)
2	
3 Prevalence Index = B/A = 4	
6	
8 4 - Morphological Adaptations¹ (Provide supporting	ng
g data in Remarks or on a separate sneet)	
10.	
11.	
<u>50</u> = Total Cover be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: 3 m)	
1 Hydrophytic 2 Wegetation	
2	
% Bare Ground in Herb Stratum <u>50</u>	
Remarks:	

Danth							Or COIIIII	n the ab	sence of indicators.)
Depth	Matrix				x Feature	S			
(inches)	Color (moist)	%	Colc	or (moist)	%	Type ¹	Loc ²	<u>Textur</u>	re Remarks
0 - 6	10YR 2/1	100						Loam	
6 - 12+	2.5Y 5/2	95	10Y	R 4/4	5	С	M	Sandy	Loam
	•								
	-	_							
	-								
		_							
	concentration, D=De						ed Sand G		² Location: PL=Pore Lining, M=Matrix.
-	Indicators: (Appl	icable to				ed.)			dicators for Problematic Hydric Soils ³ :
Histosol	` '			Sandy Redox (S					2 cm Muck (A10)
	oipedon (A2)			Stripped Matrix	, ,	\	SALDA 4		Red Parent Material (TF2)
☐ Black Hi				Loamy Mucky N			(WLKA 1)	L	Very Shallow Dark Surface (TF12)
	en Sulfide (A4) d Below Dark Surfa	co (A11)		Loamy Gleyed I Depleted Matrix)		_	Other (Explain in Remarks)
	ark Surface (A12)	Ce (ATT)		Redox Dark Su				3 r	ndicators of hydrophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark S	, ,	7)			wetland hydrology must be present,
	Gleyed Matrix (S4)			Redox Depress	,	- /			unless disturbed or problematic.
	Layer (if present):			·	. ,				·
Type:									
Depth (in	nches):							Hvdri	ic Soil Present? Yes ⊠ No □
Remarks:								1	
rtomanto.									
HYDROLO	GY								
Wetland Hy	drology Indicator	2.							
	cators (minimum or		irod: ch	ock all that ann	hv)				Secondary Indicators (2 or more required)
	\\/otor (\(\) 1\)		iired; ch	eck all that app	•	oo (DO) (e	voort ML		Secondary Indicators (2 or more required)
	Water (A1)		iired; ch	☐ Water-Stai	ined Leave		xcept MLF	RA	☐ Water-Stained Leaves (B9) (MLRA 1, 2,
☐ High Wa	ater Table (A2)		iired; ch	☐ Water-Stai	ined Leave A, and 4B		xcept MLf	RA	☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☑ High Wa☑ Saturation	ater Table (A2) on (A3)		iired; ch	☐ Water-State 1, 2, 4	ined Leave A, and 4B (B11))	xcept MLF	RA	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10)
☐ High Wa☐ Saturation☐ Water W	ater Table (A2) on (A3) larks (B1)		iired; ch	☐ Water-Stain 1, 2, 4,4 ☐ Salt Crust ☐ Aquatic Inv	ined Leave A, and 4B (B11) vertebrates) s (B13)	xcept MLF	RA	 □ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
☐ High Wa☐ Saturation☐ Water Water☐ Sedimer	ater Table (A2) on (A3) larks (B1) nt Deposits (B2)		iired; ch	Water-Stai 1, 2, 4 ☐ Salt Crust ☐ Aquatic Inv ☐ Hydrogen	ined Leave A, and 4B (B11) vertebrates Sulfide Oc	s (B13) dor (C1)	-		 □ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9)
	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)		iired; ch	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F	ned Leave A, and 4B (B11) vertebrates Sulfide Oc	s (B13) dor (C1) res along	Living Roc		 □ 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)
□ High Wa □ Saturati □ Water M □ Sedimer □ Drift Dep □ Algal Ma	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		ired; ch	Water-Stain 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence	ined Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduce	s (B13) dor (C1) res along d Iron (C4	Living Roc 4)	ots (C3)	 □ 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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)		iired; ch	Water-Stai 1, 2, 4, Salt Crust Aquatic Inv Hydrogen Oxidized F Presence C Recent Iro	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reduction	s (B13) for (C1) res along d Iron (C4 on in Tille	Living Roc 4) d Soils (C6	ots (C3)	 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)
□ High Wa □ Saturatio □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)	one requ		Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or	ned Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	ots (C3)	 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)
□ High Wa □ Saturati □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial	one requ	(B7)	Water-Stai 1, 2, 4, Salt Crust Aquatic Inv Hydrogen Oxidized F Presence	ned Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	ots (C3)	 □ 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)
□ High Wa □ Saturatic □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati □ Sparsely	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar	one requ	(B7)	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or	ned Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	ots (C3)	 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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundatia □ Sparsely Field Observations	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial of Vegetated Concar revations:	Imagery	(B7) e (B8)	Water-Stai 1, 2, 4, Salt Crust Aquatic Inv Hydrogen Oxidized F Presence C Recent Iro Stunted or Other (Exp	ined Leave A, and 4B (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	ots (C3)	 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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundatia □ Sparsely Field Obsel Surface War	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar rvations: ter Present?	Imagery ve Surfac	(B7) e (B8) No □	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence C Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roc 4) d Soils (C6	ots (C3)	 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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundatia □ Sparsely Field Observations	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar rvations: ter Present?	Imagery ve Surfac Yes 🏻	(B7) e (B8) No No	Water-Stain 1, 2, 4, 4, 5 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed blain in Ref	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roo 4) d Soils (C6 1) (LRR A	ots (C3)	 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)
□ High Wa □ Saturatio □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati □ Sparsely Field Obser Surface Water Table Saturation F	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar rvations: ter Present? Present?	Imagery ve Surfac Yes 🏻	(B7) e (B8) No □	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence C Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductio Stressed blain in Ref	s (B13) dor (C1) res along d Iron (Co on in Tille Plants (D	Living Roo 4) d Soils (C6 1) (LRR A	ots (C3)	 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)
□ High Wa □ Saturatio □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati □ Sparsely Field Obser Surface Water Table Saturation F (includes ca	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar rvations: ter Present? Present? pillary fringe)	Imagery ve Surfac Yes Yes Yes Yes Yes Yes	(B7) e (B8) No No No No No No No No No No	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red s): 3 s): 0 s): 0	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3) S))	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)
□ High Wa □ Saturatio □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati □ Sparsely Field Obser Surface Water Table Saturation F (includes ca	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aerial y Vegetated Concar rvations: ter Present? Present?	Imagery ve Surfac Yes Yes Yes Yes Yes Yes	(B7) e (B8) No No No No No No No No No No	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red s): 3 s): 0 s): 0	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3) S))	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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundatia □ Sparsely ▼ield Obser Surface War Water Table Saturation F (includes call □ Describe Re	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar rvations: ter Present? Present? pillary fringe)	Imagery ve Surfac Yes Yes Yes Yes Yes Yes	(B7) e (B8) No No No No No No No No No No	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red s): 3 s): 0 s): 0	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3) S))	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)
□ High Wa □ Saturatio □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati □ Sparsely Field Obser Surface Water Table Saturation F (includes ca	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar rvations: ter Present? Present? pillary fringe)	Imagery ve Surfac Yes Yes Yes Yes Yes Yes	(B7) e (B8) No No No No No No No No No No	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red s): 3 s): 0 s): 0	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3) S))	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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundatia □ Sparsely ▼ield Obser Surface War Water Table Saturation F (includes call □ Describe Re	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar rvations: ter Present? Present? pillary fringe)	Imagery ve Surfac Yes Yes Yes Yes Yes Yes	(B7) e (B8) No No No No No No No No No No	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red s): 3 s): 0 s): 0	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3) S))	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)
□ High Wa □ Saturatia □ Water M □ Sedimer □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundatia □ Sparsely ▼ield Obser Surface War Water Table Saturation F (includes car Describe Re	ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6) on Visible on Aerial v Vegetated Concar rvations: ter Present? Present? pillary fringe)	Imagery ve Surfac Yes Yes Yes Yes Yes Yes	(B7) e (B8) No No No No No No No No No No	Water-Stai 1, 2, 4 Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	ined Leave A, and 4B, (B11) vertebrates Sulfide Oc Rhizospher of Reduce n Reductic Stressed blain in Red s): 3 s): 0 s): 0	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3) S))	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)

Project/Site: Olympic Terrace		City/County	: Port Ludlo	ow, WA	Sampling Date:3/1/17		
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP Y-2		
Investigator(s): K. Kosters and A. Clark							
Landform (hillslope, terrace, etc.): Slope		Local relie	f (concave,	, convex, none): Convex	Slope (%): <u>3</u>		
Subregion (LRR): Northwest Forests & Coasts (LRR A)							
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent					· · · · · · · · · · · · · · · · · · ·		
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology sign							
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in			
SUMMARY OF FINDINGS – Attach site map s							
		<u> </u>	<u> </u>		<u> </u>		
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ N			e Sampled				
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes □ N	o 🛮		
Remarks: SP Y-2 is located upland of Wetland Y, approxim	nately 30 fee	et east of S	P Y-1.				
VEGETATION – Use scientific names of plant	s.						
Tree Stratum (Plot size: 5 m)	Absolute % Cover			Dominance Test works			
Pseudotsuga menziesii (Douglas-Fir)				Number of Dominant Sp That Are OBL, FACW, o			
Thuja plicata (Western Arborvitae)	30						
3.				Total Number of Domina Species Across All Strat			
4				Percent of Dominant Sp			
Ocalica (Oharb Otarbara (Distriction Oca)	60	= Total C	over		or FAC: <u>40</u> (A/B)		
Sapling/Shrub Stratum (Plot size: 3 m) 1. Gaultheria shallon (Salal)	40	V	EACH	Prevalence Index work	sheet:		
Rubus spectabilis (Salmon Raspberry)					Multiply by:		
3					x 1 = 0		
4.					x 2 = <u>0</u>		
5				FAC species 40	x 3 = <u>120</u>		
Harts Otractions (Plate in a 4 m)	50	= Total C	over		x 4 = <u>520</u>		
Herb Stratum (Plot size: 1 m) 1. Polystichum munitum (Pineland Sword Fern)	60	V	EACH	*	x 5 = 0		
2				Column Totals: 170	(A) <u>640</u> (B)		
3				Prevalence Index	= B/A = 3.8		
4				Hydrophytic Vegetation	n Indicators:		
5				☐ 1 - Rapid Test for Hy	drophytic Vegetation		
6				2 - Dominance Test			
7				3 - Prevalence Index			
8					daptations ¹ (Provide supporting or on a separate sheet)		
9				5 - Wetland Non-Vas	' '		
10				☐ Problematic Hydroph	hytic Vegetation ¹ (Explain)		
11		= Total C			and wetland hydrology must		
Woody Vine Stratum (Plot size: 3 m)	00	= 10tai C	ovei	be present, unless distu	bed or problematic.		
1				Hydrophytic			
2				Vegetation			
% Bare Ground in Herb Stratum 40	0	= Total C	over	Present? Yes	i □ No ⊠		
Remarks:				<u> </u>			

Profile Des	cription: (Describ	e to the c	lepth ne	eded to docu	ment the i	ndicator	or confirm	the abs	ence of in	dicators.)	
Depth	Matrix				x Features						
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Re	emarks
0 - 2	10YR 2/1	100						Loam			
2 - 18+	10YR 4/6	100						Sandy L	oam		
						·		-			
-		_			_						
					-						
		_	_			· 					
	oncentration, D=De Indicators: (Appli						ed Sand Gr				e Lining, M=Matrix. atic Hydric Soils³:
		cable to				eu.)					alic riyuric solis .
☐ Histosol	oipedon (A2)			Sandy Redox (S Stripped Matrix					2 cm Mucl Red Parer	, ,	(TF2)
☐ Black Hi				_oamy Mucky N) (except	MLRA 1)				Surface (TF12)
	n Sulfide (A4)			oamy Gleyed	•		,		Other (Exp		
	d Below Dark Surfa	ce (A11)		Depleted Matrix	` ,			_			
	ark Surface (A12)	, ,		Redox Dark Su				³ Inc	licators of	nydrophyti	c vegetation and
☐ Sandy M	lucky Mineral (S1)			Depleted Dark	Surface (F	7)		,	wetland hy	drology m	ust be present,
	Bleyed Matrix (S4)			Redox Depress	ions (F8)			ı	unless dist	urbed or p	roblematic.
Restrictive	Layer (if present):										
Type:			_								
Depth (in	ches):		_					Hydric	Soil Pres	ent? Ye	es 🗌 No 🛛
Remarks:								•			
HYDROLO	GY										
	drology Indicators	<u>. </u>									
-	cators (minimum of		irad: ch	ack all that ann	lv)				Secondary	Indicators	(2 or more required)
_	Water (A1)	One requ	iieu, ciii	☐ Water-Sta		o (PO) (a)	voont MI D				· · · · · · · · · · · · · · · · · · ·
_	iter Table (A2)				A, and 4B)		kcept with	KA L		and 4B)	aves (B9) (MLRA 1, 2,
☐ Saturation	` '			☐ Salt Crust	,	,		г	•	e Patterns	(P10)
	` '			_	. ,	(D12)			_		, ,
	arks (B1)			☐ Aquatic In		. ,		-	-		r Table (C2) on Aerial Imagery (C9)
	nt Deposits (B2) posits (B3)			☐ Hydrogen☐ Oxidized F			living Post			on visible rphic Posit	• • • •
	at or Crust (B4)			☐ Presence		_	_			Aquitard	
_	oosits (B5)			☐ Recent Iro		•	•	_		eutral Test	` '
	Soil Cracks (B6)			☐ Stunted or							ds (D6) (LRR A)
	on Visible on Aerial	Imagery	(R7)	Other (Exp			i) (L itti A)	. г			mocks (D7)
	Vegetated Conca			Culci (Exp		nano,			_ 1100111	cave mam	mooko (D7)
Field Obser		- Curiaci	3 (50)								
Surface Wat		Yes 🗌	No 🖂	Depth (inches	s)·						
Water Table			No ⊠	Depth (inches							
		_					Mott	and U.d-	ology Bro	cont? V	e □ No □
Saturation F (includes ca	resent? pillary fringe)	Yes 🗌	No 🛚	Depth (inches	s):		wetta	and Hydr	ology Pre	sent? 16	es ∐ No ⊠
	corded Data (strea	m gauge,	monitor	ing well, aerial	photos, pro	evious ins	pections),	if availabl	e:		
Remarks:											

Project/Site: Olympic Terrace		City/C	Sampling Date:3/1/17				
Applicant/Owner: Westharbor Homes					State: WA	Sampling Point: SP	Y-3
Investigator(s): K. Kosters and A. Clark				Section, To	ownship, Range: <u>S21, T28</u> ľ	N, R1E, W.M.	
Landform (hillslope, terrace, etc.): Slope		Loca	l relie	f (concave,	, convex, none): Concave	Slope (%): <u>5</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)	_ Lat: 47.89	97842			Long: -122.681201	Datum: <u>U</u>	Inknown
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent	slopes				NWI classificat	tion: None	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Ye	es 🛛	No □ (l	f no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology sign	-				ormal Circumstances" pres	ent? Yes ⊠ No []
Are Vegetation, Soil, or Hydrology natu	-			(If need	ed, explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map				•		,	res, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □							
Hydric Soil Present? Yes ⊠ No □				e Sampled		. 🗖	
Wetland Hydrology Present? Yes ⊠ No □			with	in a Wetlar	nd? Yes⊠ No	3 🗀	
Remarks: SP Y-3 is located in the southwest portion of We	etland Y.						
VEGETATION – Use scientific names of plant	ts.						
Tree Stratum (Plot size: 5 m)	Absolute			Indicator	Dominance Test works		
1. Alnus rubra (Red Alder)	% Cover				Number of Dominant Spartnat Are OBL, FACW, o		(Δ)
2							_ (/\)
3.					Total Number of Domina Species Across All Strate		(B)
4							_ ()
Sapling/Shrub Stratum (Plot size: 3 m)	20				Percent of Dominant Spe That Are OBL, FACW, o		_ (A/B)
Rubus spectabilis (Salmon Raspberry)	30	Y		FAC	Prevalence Index work	sheet:	
2					Total % Cover of:	Multiply by:	<u>:</u>
3					OBL species		
4					FACW species		
5					FACIL appaies		
Herb Stratum (Plot size: 1 m)	30	= 10	ital Co	over	FACU species		
Oenanthe sarmentosa (Pacific Water-Dropwort)	5	Υ		OBL	Column Totals:		
2							, ,
3						= B/A =	_
4					Hydrophytic Vegetation		
5					1 - Rapid Test for Hy		
6					☑ 2 - Dominance Test☐ 3 - Prevalence Index		
7					4 - Morphological Ad		unnorting
8						or on a separate she	
9 10					5 - Wetland Non-Vas	scular Plants ¹	
11.					☐ Problematic Hydroph	nytic Vegetation1 (Exp	olain)
	5				¹ Indicators of hydric soil be present, unless distur		gy must
Woody Vine Stratum (Plot size: 3 m)					be present, unless distui	bed of problematic.	
1					Hydrophytic		
2					Vegetation	No C	
% Bare Ground in Herb Stratum 95	0	= To	tal C	over	Present? Yes	s⊠ No □	
Remarks: Polystichum munitum (15%) and Pseudotsuga n	nenziesii (5º	%) gro	wing	on hummic	s throughout the wetland.		

Depth	Matrix			Rad	ox Feature	20				
(inches)	Color (moist)	%	Colo	or (moist)	<u>%</u>		Loc ²	Texture	<u> </u>	Remarks
0 - 7	10YR 2/1	100	_					Silt Loa	<u>m</u>	
7 - 14	10YR 3/2	90	10Y	R 3/6	10	С	М	Sandy I		
	10111 0/2			11 0/0			101	<u>oundy i</u>		
	-							-		
1T C. C	Name and the state of the state			luca al Matrice C					21	eties. Di Dene Lining M Metric
	Concentration, D=De Indicators: (Appl						ed Sand Gi			ation: PL=Pore Lining, M=Matrix. rs for Problematic Hydric Soils ³ :
☐ Histosol		icabic to		Sandy Redox (icu.,				Muck (A10)
	pipedon (A2)			Stripped Matrix						Parent Material (TF2)
	istic (A3)			Loamy Mucky	, ,	1) (excep	t MLRA 1)			Shallow Dark Surface (TF12)
· 	en Sulfide (A4)			Loamy Gleyed			,		•	r (Explain in Remarks)
	d Below Dark Surfa	ice (A11)		Depleted Matri		,				,
☐ Thick Da	ark Surface (A12)		□ I	Redox Dark Su	urface (F6)		³ In	dicato	rs of hydrophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark	•	- 7)				nd hydrology must be present,
	Gleyed Matrix (S4)			Redox Depres	sions (F8)				unles	s disturbed or problematic.
	Layer (if present):									
										
	nches): efusal at 14 inches							Hydri	c Soil	Present? Yes ⊠ No □
HYDROLO	OGY									
	OGY drology Indicator	s:								
Wetland Hy			uired; cho	eck all that app	oly)				Secon	dary Indicators (2 or more required)
Wetland Hy	drology Indicator		uired; cho			/es (B9) (є	except MLF			<u> </u>
Wetland Hy Primary Indi ☑ Surface	ydrology Indicator icators (minimum o Water (A1)		uired; ch	☐ Water-Sta	ained Leav	, , ,	except MLF			dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hy Primary Indi ☑ Surface	rdrology Indicator icators (minimum o Water (A1) ater Table (A2)		uired; che	☐ Water-Sta	ained Leav	, , ,	xcept MLF	RA	□ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi ☑ Surface ☑ High Wa	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3)		uired; che	☐ Water-Sta	ained Leavers A. and 46 (B11)	3)	except MLF	RA	□ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10)
Wetland Hy Primary Indi Surface High Wa Saturation Water M	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3)		uired; che	☐ Water-Sta 1, 2, 4 ☐ Salt Crus	ained Leav IA, and 4E t (B11) overtebrate	B) es (B13)	except MLF	RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hy Primary Indi Surface High Wa Saturation Water M Sedimen	rdrology Indicator icators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1)		uired; ch	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen	ained Leaven A. A. and 4E (B11) avertebrate Sulfide C	es (B13) dor (C1)	except MLF	AS	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2)
Wetland Hy Primary Indi Surface High Wa Saturation Water M Sedimen □ Drift Dep	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) vidrks (B1) nt Deposits (B2)		uired; cho	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen	Ained Leaver A.A., and 4E to (B11) Invertebrate Country Sulfide Country Sulfi	es (B13) dor (C1) eres along	Living Roo	AS	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen □ Drift Dep Algal Ma	vdrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)		uired; che	Water-State 1, 2, 4 Salt Cruss Aquatic Ir Hydrogen Oxidized Presence	Ained Leaver Ained Leaver Ained Leaver Leave	es (B13) dor (C1) eres along ed Iron (C	Living Roo	RA ots (C3)	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9 comorphic Position (D2)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimen Drift Dep Algal Ma Iron Dep	vdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		uired; che	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ire	AA, and 4E t (B11) hvertebrate Sulfide C Rhizosphe of Reduct	es (B13) dor (C1) eres along ed Iron (C- ion in Tille	Living Roo 4)	RA ots (C3)	☐ W: ☐ Dr ☐ Dr ☐ Ge ☐ St ☐ FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) atturation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface	vidrology Indicator icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one requ		Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ire	nined Leav A, and 4B (B11) overtebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed	es (B13) dor (C1) eres along ed Iron (Contion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Wi Wi Dr Dr Sa Ge Sh FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9 ecomorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturation Water M Sedimen □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati	vidrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) vidraks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	f one requ	· (B7)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	nined Leav A, and 4B (B11) overtebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed	es (B13) dor (C1) eres along ed Iron (Contion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Wi Wi Dr Dr Sa Ge Sh FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (CS) amorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturation Water M Sedimen □ Drift Dep □ Algal Ma □ Iron Dep □ Surface □ Inundati	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	f one requ	· (B7)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	nined Leav A, and 4B (B11) overtebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed	es (B13) dor (C1) eres along ed Iron (Contion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Wi Wi Dr Dr Sa Ge Sh FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (CS) amorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria y Vegetated Conca	f one requ	· (B7)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	nined Leaver A., and 48 to 1811) Invertebrate Sulfide Control Reduction Reductor Stressed plain in Reductor Reductor Reductor Stressed plain in Reductor Reductor Reductor Reductor Stressed plain in Reductor Red	es (B13) dor (C1) eres along ed Iron (Contion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Wi Wi Dr Dr Sa Ge Sh FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (CS) amorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca rvations: ter Present?	f one requ I Imagery ve Surfac	(B7) be (B8)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o	ained Leav A, and 4B t (B11) avertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re	es (B13) dor (C1) eres along ed Iron (Contion in Tille I Plants (D	Living Roo 4) d Soils (C6	RA ots (C3)	Wi Wi Dr Dr Sa Ge Sh FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (CS) amorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F	rdrology Indicator ricators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Concarvations: ter Present? Present?	f one required in the second of the second	e (B7) ce (B8)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leaven And Alexandra (B11) avertebrate Sulfide Con Reduction Reductor Stressed plain in Research (B15): 0.5	es (B13) dor (C1) eres along ed Iron (Contion in Tille I Plants (D	Living Roo 4) d Soils (C6 11) (LRR A)	ets (C3)	☐ W: ☐ Dr ☐ Sa ☐ Ge ☐ Sh ☐ FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (CS) amorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obset Surface Water Table Saturation F (includes ca	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca rvations: ter Present? Present? apillary fringe)	I Imagery ve Surfac Yes ⊠ Yes ⊠ Yes ⊠ Yes ⊠	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leav A, and 4B t (B11) avertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re es): 0.5 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ets (C3)	☐ W: ☐ Dr ☐ Dr ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fre	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) among Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obset Surface Water Table Saturation F (includes ca	rdrology Indicator ricators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Concarvations: ter Present? Present?	I Imagery ve Surfac Yes ⊠ Yes ⊠ Yes ⊠ Yes ⊠	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leav A, and 4B t (B11) avertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re es): 0.5 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ets (C3)	☐ W: ☐ Dr ☐ Dr ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fre	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) among Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7)
Primary Indi Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca rvations: ter Present? Present? apillary fringe)	I Imagery ve Surfac Yes ⊠ Yes ⊠ Yes ⊠ Yes ⊠	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leav A, and 4B t (B11) avertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re es): 0.5 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ets (C3)	☐ W: ☐ Dr ☐ Dr ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fre	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) among Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca rvations: ter Present? Present? apillary fringe)	I Imagery ve Surfac Yes ⊠ Yes ⊠ Yes ⊠ Yes ⊠	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leav A, and 4B t (B11) avertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re es): 0.5 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ets (C3)	☐ W: ☐ Dr ☐ Dr ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fre	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) among Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7)
Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	rdrology Indicator icators (minimum or Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeria by Vegetated Conca rvations: ter Present? Present? apillary fringe)	I Imagery ve Surfac Yes ⊠ Yes ⊠ Yes ⊠ Yes ⊠	No \(\begin{array}{c} \ (B7) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Leav A, and 4B t (B11) avertebrate Sulfide O Rhizosphe of Reduct on Reduct r Stressed plain in Re es): 0.5 es): 0	es (B13) dor (C1) eres along ed Iron (C- ion in Tille I Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ets (C3)	☐ W: ☐ Dr ☐ Dr ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Ra ☐ Fre	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) among Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7)

Project/Site: Olympic Terrace	Ci	ty/County: Port Ludlo	ow, WA	Sampling Date: 3/1/17	
Applicant/Owner: Westharbor Homes			State: WA	Sampling Point: SP Z-1	
Investigator(s): K. Kosters and A. Clark		Section, To	wnship, Range: <u>S21, T28</u> N	N, R1E, W.M.	
Landform (hillslope, terrace, etc.): Slope		ocal relief (concave,	convex, none): Concave	Slope (%): <u>5</u>	
Subregion (LRR): Northwest Forests & Coasts (LRR A)	Lat: <u>47.898</u>	3546	Long: -122.681071	Datum: Unknov	wn
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-		rmal Circumstances" pres	ent? Yes⊠ No □	
Are Vegetation, Soil, or Hydrology natu			ed, explain any answers in		
SUMMARY OF FINDINGS – Attach site map					etc
Attach site map			, oations, transcots,		
Hydrophytic Vegetation Present? Yes ⊠ No □		Is the Sampled	Area		
Hydric Soil Present? Yes ⊠ No ☐		within a Wetlan	d? Yes⊠ No) 	
Wetland Hydrology Present? Yes ⊠ No ☐ Remarks:					
Nomano.					
VEGETATION – Use scientific names of plan	ts.				
		Dominant Indicator	Dominance Test works	heet:	
Tree Stratum (Plot size: 5 m) 1		Species? Status	Number of Dominant Spe That Are OBL, FACW, or		١)
2			Total Number of Domina	nt	
3			Species Across All Strata	a: <u>1</u> (B))
4			Percent of Dominant Spe	ecies	
Sapling/Shrub Stratum (Plot size: 3 m)	0	= Total Cover	That Are OBL, FACW, or		/B)
Rubus spectabilis (Salmon Raspberry)	80 \	/ FAC	Prevalence Index works	sheet:	
2			Total % Cover of:	Multiply by:	
3			OBL species	x 1 =	
4			FACW species	x 2 =	
5			*	x 3 =	
Harb Christian (Diet sines 4 m)	80	= Total Cover		x 4 =	
Herb Stratum (Plot size: 1 m)				x 5 =	
1 2			Column Totals:	(A) ((B)
3			Prevalence Index :	= B/A =	
4			Hydrophytic Vegetation	n Indicators:	
5			☐ 1 - Rapid Test for Hy	drophytic Vegetation	
6			2 - Dominance Test i	s >50%	
7			☐ 3 - Prevalence Index	is ≤3.0¹	
8 9				aptations ¹ (Provide support or on a separate sheet)	ting
10			☐ 5 - Wetland Non-Vas	cular Plants ¹	
11			☐ Problematic Hydroph	nytic Vegetation ¹ (Explain)	
		= Total Cover	¹ Indicators of hydric soil abe present, unless distur	and wetland hydrology mus	st
Woody Vine Stratum (Plot size: 3 m)			, armoso diotur		
1			Hydrophytic		
2		Total Caver	Vegetation Present? Yes	⊠ No □	
% Bare Ground in Herb Stratum 100	U	= Total Cover	rresent! 168		
Remarks:					

Depth	cription: (Describ Matrix		deptn ne		ı ment the lox Featur		r or confirm	n the ab	sence	of indicators.)
(inches)	Color (moist)	%	Colo	r (moist)	<u>%</u>	Type ¹	Loc ²	Textur	e	Remarks
0 - 2	10YR 2/1	100						Sandy	Loam	
2 - 18+	10YR 4/2	95	10YI	R 4/4	5	С	М	Sandy		
2 101	1011(4/2	<u>55</u>		\ 			IVI	Carray	Loam	
									,	
1Type: C-C	oncontration D_D	onlotion I	 DM_Bad	uood Motrix C	S-Cover	ad or Coot	and Sand C	roino	21.04	action: DL_Doro Lining M_Matrix
	oncentration, D=De Indicators: (Appl						eu Sanu G			cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :
☐ Histosol				Sandy Redox (, toui,				n Muck (A10)
	pipedon (A2)			Stripped Matrix					_	Parent Material (TF2)
☐ Black Hi				oamy Mucky	. ,	1) (excep	t MLRA 1)			/ Shallow Dark Surface (TF12)
☐ Hydroge	n Sulfide (A4)			oamy Gleyed			ŕ		Othe	er (Explain in Remarks)
☐ Deplete	d Below Dark Surfa	ice (A11)	⊠ [Depleted Matri	x (F3)					
	ark Surface (A12)			Redox Dark Su	•	•		3lr		ors of hydrophytic vegetation and
	lucky Mineral (S1)		_	Depleted Dark	`	,				and hydrology must be present,
	Bleyed Matrix (S4)			Redox Depres	sions (F8)			1	unles	ss disturbed or problematic.
	Layer (if present)									
								1		
Depth (in	ches):							Hydri	c Soil	Present? Yes 🛛 No 🗌
HYDROLO										
	drology Indicator	s:								
Primary Indi	cators (minimum o	f one requ	uired; che	eck all that app	oly)				Seco	ndary Indicators (2 or more required)
	Water (A1)			☐ Water-Sta	ained Leav	ves (B9) (except MLF	RA	□ w	/ater-Stained Leaves (B9) (MLRA 1, 2,
☐ High Wa	iter Table (A2)			1, 2, 4	IA, and 4I	В)	-			4A, and 4B)
☐ Saturation	on (A3)			☐ Salt Crust	t (B11)				\Box D	rainage Patterns (B10)
☐ Water M	arks (B1)			☐ Aquatic In	vertebrat	es (B13)			\Box D	ry-Season Water Table (C2)
☐ Sedime	nt Deposits (B2)			☐ Hydrogen	Sulfide C	dor (C1)			☐ S	aturation Visible on Aerial Imagery (C9)
☐ Drift Dep	oosits (B3)				Rhizosphe	eres along	Living Roo	ots (C3)	☐ G	eomorphic Position (D2)
☐ Algal Ma	at or Crust (B4)			☐ Presence	of Reduc	ed Iron (C	4)		☐ S	hallow Aquitard (D3)
	osits (B5)						ed Soils (C6	,	□ F ₁	AC-Neutral Test (D5)
	Soil Cracks (B6)					•	01) (LRR A))		aised Ant Mounds (D6) (LRR A)
	on Visible on Aeria			☐ Other (Ex	plain in R	emarks)			☐ Fi	rost-Heave Hummocks (D7)
	/ Vegetated Conca	ve Surfac	e (B8)							
Field Obser		=	—							
Surface Wa		Yes 🖂	No 🗌	Depth (inche						
Water Table		Yes 🗌	No 🗌	Depth (inche						
Saturation F	resent? pillary fringe)	Yes 🗌	No 🗌	Depth (inche	es):		Wetl	and Hyd	irolog	y Present? Yes ⊠ No □
	corded Data (strea	ım gauge	, monitor	ing well, aeria	l photos, p	revious in	spections),	if availa	ble:	
Domosilso:										
Remarks:										

Project/Site: Olympic Terrace		City/County	y: <u>Port Ludlo</u>	ow, WA	Sampling Date:3/1/17		
Applicant/Owner: Westharbor Homes				State: WA	Sampling Point: SP Z-2		
Investigator(s): K. Kosters and A. Clark							
Landform (hillslope, terrace, etc.): Slope		Local relie	ef (concave,	convex, none): Concave	Slope (%): <u>5</u>		
Subregion (LRR): Northwest Forests & Coasts (LRR A)							
Soil Map Unit Name: Indianola sandy loam, 0 to 15 percent				=			
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology sign	-				ent? Yes⊠ No □		
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in			
SUMMARY OF FINDINGS – Attach site map s							
Libration No societion Decount 2							
Hydrophytic Vegetation Present? Yes ☐ No ☐ Hydric Soil Present? Yes ☐ No ☐ N			e Sampled				
Wetland Hydrology Present? Yes ⊠ No □		with	in a Wetlar	nd? Yes ☐ No	⊃ <u>⊠</u>		
Remarks:							
VEGETATION – Use scientific names of plant	s.						
Tree Stratum (Plot size: 5 m)	Absolute % Cover			Dominance Test works			
\	75	-		Number of Dominant Sp That Are OBL, FACW, o			
	15		·				
3.				Total Number of Domina Species Across All Strats			
4				Percent of Dominant Spe			
Conding (Charth Charture (Diet sings 2 cs)	90	= Total C	over		r FAC: <u>25</u> (A/B)		
Sapling/Shrub Stratum (Plot size: 3 m) 1. Gaultheria shallon (Salal)	30	v	FACII	Prevalence Index work	sheet:		
Rubus spectabilis (Salmon Raspberry)					Multiply by:		
Rubus ursinus (California Dewberry)					x 1 = 0		
4.					x 2 = <u>0</u>		
5				FAC species 15	x 3 = <u>45</u>		
Harts Otractions (Plate in a 4 m)	50	= Total C	over		x 4 = <u>580</u>		
Herb Stratum (Plot size: 1 m) 1. Polystichum munitum (Pineland Sword Fern)	20	V	EACH		x 5 = <u>0</u>		
2				Column Totals: 160	(A) <u>625</u> (B)		
3				Prevalence Index	= B/A = <u>3.91</u>		
4				Hydrophytic Vegetation	n Indicators:		
5				☐ 1 - Rapid Test for Hy	drophytic Vegetation		
6				2 - Dominance Test			
7				3 - Prevalence Index			
8					laptations ¹ (Provide supporting or on a separate sheet)		
9				☐ 5 - Wetland Non-Vas	' /		
10				☐ Problematic Hydroph	nytic Vegetation¹ (Explain)		
11		= Total C			and wetland hydrology must		
Woody Vine Stratum (Plot size: 3 m)	20	= Total C	ovei	be present, unless distur	bed or problematic.		
1				Hydrophytic			
2				Vegetation	_		
% Bare Ground in Herb Stratum 80	0	= Total C	over	Present? Yes	□ No ⊠		
Remarks:				<u> </u>			

Profile Desc	cription: (Describ	e to the d	epth ne	eded to docu	ment the i	ndicator	or confirm	the abso	ence of indicators.)
Depth	Matrix				ox Feature:				
(inches)	Color (moist)	%	Colo	r (moist)	%	Type ¹	Loc ²	Texture	<u>Remarks</u>
<u>0 - 13</u>	10YR 4/4	100						Silt Loan	n
		_							
·									
					_				
					_				
	oncentration, D=De						ed Sand Gr		² Location: PL=Pore Lining, M=Matrix.
_	Indicators: (Appl	cable to				ed.)			licators for Problematic Hydric Soils ³ :
Histosol	` '			Sandy Redox (2 cm Muck (A10)
	pipedon (A2)			Stripped Matrix	, ,	\	MI DA 4)		Red Parent Material (TF2)
☐ Black His	` '			₋oamy Mucky N ₋oamy Gleyed			WILKA 1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	n Sulfide (A4) I Below Dark Surfa	co (Δ11)		Depleted Matrix	` '			Ш	Other (Explain in Remarks)
	rk Surface (A12)	ce (ATT)		Redox Dark Su				3Inc	dicators of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark	` ,	7)			wetland hydrology must be present,
-	leyed Matrix (S4)			Redox Depress	•	.,			unless disturbed or problematic.
-	Layer (if present):			·	. ,				·
Type:									
, , <u> </u>	ches):							Hydric	Soil Present? Yes 🗌 No 🖂
Remarks:			_					1.7	
rtomanto.									
HYDROLO	GY								
Wetland Hy	drology Indicators	s:							
Primary India	cators (minimum of	one requi	red; che	eck all that app	ly)				Secondary Indicators (2 or more required)
☐ Surface	Water (A1)			☐ Water-Sta	ined Leave	es (B9) (e	xcept MLR	A [☐ Water-Stained Leaves (B9) (MLRA 1, 2,
☐ High Wa	ter Table (A2)			1, 2, 4	A, and 4B))			4A, and 4B)
	on (A3)			☐ Salt Crust	(B11)				☐ Drainage Patterns (B10)
☐ Water M	arks (B1)			☐ Aquatic In	vertebrates	s (B13)			☐ Dry-Season Water Table (C2)
☐ Sedimen	t Deposits (B2)			☐ Hydrogen	Sulfide Od	lor (C1)			☐ Saturation Visible on Aerial Imagery (C9)
☐ Drift Dep	osits (B3)			☐ Oxidized F	Rhizospher	es along	Living Root	ts (C3)	Geomorphic Position (D2)
☐ Algal Ma	t or Crust (B4)			☐ Presence	of Reduce	d Iron (C	!)		☐ Shallow Aquitard (D3)
☐ Iron Dep	osits (B5)			☐ Recent Iro	n Reductio	n in Tille	d Soils (C6)) [☐ FAC-Neutral Test (D5)
☐ Surface	Soil Cracks (B6)			☐ Stunted or	Stressed	Plants (D	1) (LRR A)		Raised Ant Mounds (D6) (LRR A)
☐ Inundation	on Visible on Aerial	Imagery ((B7)	☐ Other (Exp	olain in Rei	marks)			☐ Frost-Heave Hummocks (D7)
☐ Sparsely	Vegetated Concav	e Surface	(B8)						
Field Obser	vations:								
Surface Wat	er Present?	Yes 🗌	No 🗌	Depth (inche	s):				
Water Table	Present?		No 🗌	Depth (inche	s):				
Saturation P			No 🗆	Depth (inche	-		Wetla	and Hvdr	ology Present? Yes ⊠ No □
(includes cap		.00 🔼		Bopan (mono	o). <u>10</u>				
	corded Data (strea	m gauge,	monitor	ing well, aerial	photos, pr	evious ins	spections),	if availabl	e:
Remarks:									

APPENDIX B:

WDOE (Hruby 2014) Wetland rating forms

RATING SUMMARY – Western Washington

Name of wetland (or ID #):	Date of site visit:					
Rated by	Trained by Ecology?YesNo Date of training					
HGM Class used for rating Wetland has multiple HGM classes?Y						
•	put the figures requested (figures can be combined).					
OVERALL WETLAND CATEGORY	(based on functions or special characteristics)					
1. Catagony of watland based on Fl	UNICTIONS					

1. Category of wetland based on FUNCTIONS

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

FUNCTION		mprov iter Q	ving uality	Н	ydrolo	ogic		Habita	it	
		Circle the appropriate ratings								
Site Potential	Н	\bigcirc	L	Н	()	L	Н	M	L	
Landscape Potential	Н	M	L	Н	М	(1)	\oplus	М	L	
Value	Н	М	(L)	Н	М	(\oplus	М	L	TOTAL
Score Based on Ratings										

Score for each function based on three ratings (order of ratings is not *important)* 9 = H,H,H8 = H,H,M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L 5 = M,M,L4 = M, L, L3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	S 4.1	
(can be added to figure above)		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 l	levels in the	entire unit	usually	controlled by	v tides exce	nt during	floods?
Τ.	THE CHE WALLE	C V CIS III CIIC	circii c airii	asually	conti onca b	y tiues ence	ptauring	, mooas.

N0 - 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**.

N0 – go to 5

YES – The wetland class is **Slope**

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

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

NO - go to 6

YES - The wetland class is **Riverine**

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

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

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.

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

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

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS					
Water Quality Functions - Indicators that the site functions to impr	ove water quality				
R 1.0. Does the site have the potential to improve water quality?					
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a	flooding event:				
Depressions cover > 3/4 area of wetland	points = 8				
Depressions cover > ½ area of wetland	points = 4				
Depressions present but cover < ½ area of wetland	points = 2				
No depressions present	points = 0				
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin	classes)				
Trees or shrubs $> \frac{2}{3}$ area of the wetland	points = 8				
Trees or shrubs $> \frac{1}{3}$ area of the wetland	points = 6				
Herbaceous plants (> 6 in high) $> \frac{2}{3}$ area of the wetland	points = 6				
Herbaceous plants (> 6 in high) $> \frac{1}{3}$ area of the wetland	points = 3				
Trees, shrubs, and ungrazed herbaceous $< \frac{1}{3}$ area of the wetland	points = 0				
Total for R 1 Add the points in the boxes above					
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L	Record the rating on t	he first page			
R 2.0. Does the landscape have the potential to support the water quality function of the	he site?				
R 2.1. Is the wetland within an incorporated city or within its UGA?	Yes = 2 No = 0				
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area?	Yes = 1 No = 0				
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that he within the last 5 years?	nave been clearcut Yes = 1 No = 0				
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0				
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in quest Other sources	ions R 2.1-R 2.4 Yes = 1 No = 0				
	s in the boxes above				
Rating of Landscape Potential If score is:3-6 = H1 or 2 = M0 = L	Record the rating on th	ne first page			
R 3.0. Is the water quality improvement provided by the site valuable to society?					
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drain	s to one within 1 mi?				
	Yes = 1 No = 0				
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathog	gens? Yes = 1 No = 0				
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining wat					
YES if there is a TMDL for the drainage in which the unit is found)	Yes = 2 No = 0				
Total for R 3 Add the point	s in the boxes above				

Rating of Value If score is: ____2-4 = H ____1 = M ____0 = L

Record the rating on the first page

RIVERINE AND FRESHWATER TIDAL FR	INGE WETLANDS	
Hydrologic Functions - Indicators that site functions to rec		1
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides:		
Estimate the average width of the wetland perpendicular to the direction of	f the flow and the width of the	
stream or river channel (distance between banks). Calculate the ratio: (ave	erage width of wetland)/(average	
width of stream between banks).		
If the ratio is more than 20	points = 9	
If the ratio is 10-20	points = 6	
If the ratio is 5-<10	points = 4	
If the ratio is 1-<5	points = 2	
If the ratio is < 1	points = 1	
R 4.2. Characteristics of plants that slow down water velocities during floods: <i>Tre</i>		
shrub. Choose the points appropriate for the best description (polygons nee	ed to have >90% cover at person	
height. These are NOT Cowardin classes). Forest or shrub for $>^1/_3$ area OR emergent plants $>^2/_3$ area	noints - 7	
Forest or shrub for $> 1/10$ area OR emergent plants $> 1/10$ area	points = 7	
Plants do not meet above criteria	points = 4	
	points = 0	
	Add the points in the boxes above	
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L	Record the rating on the	e first page
R 5.0. Does the landscape have the potential to support the hydrologic fur	nctions of the site?	
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	
Total for R 5	Add the points in the boxes above	
Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L	Record the rating on the	e first page
R 6.0. Are the hydrologic functions provided by the site valuable to society	?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site.		
The sub-basin immediately down-gradient of the wetland has flooding prob	plems that result in damage to	
human or natural resources (e.g., houses or salmon redds)	points = 2	
Surface flooding problems are in a sub-basin farther down-gradient	points = 1	
No flooding problems anywhere downstream	points = 0	
R 6.2. Has the site been identified as important for flood storage or flood conveya	nce in a regional flood control plan? Yes = 2 No = 0	
Total for R 6	Add the points in the boxes above	
Rating of Value If score is:2-4 = H1 = M0 = L	Record the rating on the	e first paae

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 po	otential to	provide habitat?
----------------------------------	-------------	------------------

H 1.1.	. Structure of plant community: <i>Indicators are Cowardin classes and strata within the Forested class.</i> 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 3 types present: points = 2 Occasionally flooded or inundated

2 types present: points = 1 Saturated only 1 type present: points = 0

___Permanently flowing stream or river in, or adjacent to, the wetland

Seasonally flowing stream in, or adjacent to, the wetland

Lake Fringe wetland 2 points Freshwater tidal wetland 2 points

H 1.3. Richness of plant species

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

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

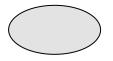
If you counted: > 19 species points = 2

5 - 19 species

< 5 species points = 0

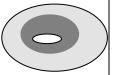
H 1.4. Interspersion of habitats

Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.









points = 1

None = 0 points

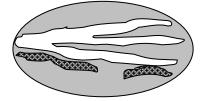
Low = 1 point

Moderate = 2 points

All three diagrams in this row are **HIGH** = 3points







Wetland name or number _____

H 1.5. Special habitat features:				
Check the habitat features that are present in the wetland. The number of checks is	the number of points.			
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)Standing snags (dbh > 4 in) within the wetland				
Stable steep banks of fine material that might be used by beaver or muskrat for	· ·			
slope) OR signs of recent beaver activity are present (cut shrubs or trees that he				
where wood is exposed)	ave not yet weathered			
	in a reach that are			
At least ¼ ac of thin-stemmed persistent plants or woody branches are present				
permanently or seasonally inundated (structures for egg-laying by amphibians				
Invasive plants cover less than 25% of the wetland area in every stratum of plan	nts (see H 1.1 for list of			
strata)				
Total for H 1 Add the	points in the boxes above			
Rating of Site Potential If score is:15-18 = H7-14 = M0-6 = L	Record the rating on the first page			
H 2.0. Does the landscape have the potential to support the habitat functions of th	e site?			
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).				
Calculate: % undisturbed habitat + [(% moderate and low intensity land	uses)/2] = %			
If total accessible habitat is:				
$>$ $^{1}/_{3}$ (33.3%) of 1 km Polygon	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			
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.				
Calculate: % undisturbed habitat + [(% moderate and low intensity land	uses)/2] =%			
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	points = (- 2)			
≤ 50% of 1 km Polygon is high intensity	points = 0			
Total for H 2 Add the Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L	points in the boxes above Record the rating on the first page			
Rating of Landscape Potential II score is:4-6 - H1-5 - W<1 - L	Record the ruting on the first page			
H 3.0. Is the habitat provided by the site valuable to society?	-			
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Cho	ose 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 or	n 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 compre				
Shoreline Master Plan, or in a watershed plan	Energive plan, in a			
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:2 = H1 = M0 = L	Record the rating on the first page			

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
	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	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	Cat. I
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.</i> If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? 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.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	

SC 3.0 - A field identified bog community is in the middle of the south portion of the wetland. Aerial photo interpretation indicates that there is a bog community fringing the central open water area.

SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate</i>	
the wetland based on its functions.	
— Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
 Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
	C-4 1
Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
— The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from	
marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt)	Cat. I
during most of the year in at least a portion of the lagoon (needs to be measured near the bottom)	
Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	
mowed grassland.	
— The wetland is larger than $^{1}/_{10}$ ac (4350 ft ²)	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If</i>	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
Long Beach Peninsula: Lands west of SR 103	
— Grayland-Westport: Lands west of SR 105	Cat I
 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 	
Yes – Go to SC 6.1 No = not an interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	Cat. II
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
Yes = Category II No – Go to SC 6.3	Cat. III
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?	
Yes = Category III No = Category IV	
	Cat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number	
	This page left blank intentionally

RATING SUMMARY – Western Washington

	<u>race - Wetland C</u> Date of site visit: 3/1/1/
Rated by A. Clark	Trained by Ecology? <a>✓ YesNo Date of training <a>9/29/16
HGM Class used for rating Depressiona	Wetland has multiple HGM classes?Y ✓ N
NOTE: Form is not complete with Source of base aerial photo/ma	nout the figures requested (figures can be combined). ap Google Earth, WDOE
OVERALL WETLAND CATEGORY _	☐ (based on functions ✓ or special characteristics)
1. Category of wetland based on F	UNCTIONS
Category I Total scor	re = 23 - 27

	Cate	gory	IV-T	otal :	score	= 9 -	15			
FUNCTION	Improving Water Quality		Hydrologic Habitat		at					
` X					Circle	the ap	propr	iate ra	tings	
Site Potential	Н	M	L	(H)	М	L	Н	(M)	L	
Landscape Potential	Н	M	L	Н	M	L	H	М	L	
Value	Н	М	(Н	М	(L)	Н	M	L	TOTA
Score Based on					_			0		4.7

_Category II - Total score = 20 - 22 _Category III - Total score = 16 - 19

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	II II
Interdunal	I II III IV
None of the above	NA

Ratings

Maps and figures required to answer questions correctly for Western Washington

<u>Depressional Wetlands</u>

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperlods	D 1.4, H 1.2	1
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	5

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperlods	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	<u> </u>
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	<u></u>

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	S 4.1	
(can be added to figure above)		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 C

NO – go to 6

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	R <u>iverine</u>
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	İ
points = 3	
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	3
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 laver) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	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	3
Wetland has persistent, ungrazed, plants > ½ 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:	
This is the area that is ponded for at least 2 months. See description in manual.	4
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 < 1/2 total area of wetland points = 0	
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential If score is:12-16 = H6-11 = M0-5 = L Record the rating on the first page	ge
D 2.0. Does the landscape have the potential to support the water quality function of the site?	THE
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 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? Source Road runoff Yes = 1 No = 0	1
Total for D 2 Add the points in the boxes above	2
Rating of Landscape Potential If score is:3 or 4 = HV 1 or 2 = M0 = L Record the rating on the firs	
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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	0
Rating of Value If score is:2-4 = H1 = M0 = L Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradations.	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 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	3
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	5
Total for D 4 Add the points in the boxes above	12
Rating of Site Potential If score is: ▼ 12-16 = H6-11 = M0-5 = 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	0
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	0
Total for D 5 Add the points in the boxes above	1
Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L Record the rating on the	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooding occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin.	0
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	0
	Sant

Rating of Value if score is: ___2-4 = H ___1 = M ___0 = L

Record the rating on the first page

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

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. Large, downed, woody debris within the wetland (> 4 In diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	3
Total for H 1 Add the points in the boxes above	7
Rating of Site Potential if score is:15-18 = H	ne first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 25 + [(% moderate and low intensity land uses)/2] 5 = 30 _ % If total accessible habitat is: > \(^1/\s_1(33.3\%)\) of 1 km Polygon 20-33\% of 1 km Polygon 10-19\% of 1 km Polygon \$\text{points} = 2\$ \$\text{points} = 1\$ \$\text{points} = 0\$	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. **Calculate:** % undisturbed habitat \(\frac{40}{40} \) + [(% moderate and low intensity land uses)/2] \(\frac{18}{8} \) % **Undisturbed habitat > 50% of Polygon points = 3 **Undisturbed habitat 10-50% and in 1-3 patches points = 2 **Undisturbed habitat 10-50% and > 3 patches points = 1 **Undisturbed habitat < 10% of 1 km Polygon points = 0	3
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	5
Rating of Landscape Potential If score is: 4-6 = H1-3 = M<1 = L Record the rating on the	ne first page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only 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	1
Site does not meet any of the criteria above points = 0 Parting of Value if score is: 2 = H	the first name

Wetland name or number C

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type		Category
Check off any criteria that apply to the wetland. Circle the category when th	e 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 5 	C 1.1 No= Not an estuarine	wetland
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, Nat Preserve, State Park or Educational, Environmental, or Scientific Res		-30-151? Cet I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the	following three conditions?	
 The wetland is relatively undisturbed (has no diking, ditching, fithan 10% cover of non-native plant species. (if non-native species) At least % of the landward edge of the wetland has a 100 ft buf 	lling, cultivation, grazing, and ha les are <i>Spartina</i> , see page 25)	Cat. I
 mowed grassland. The wetland has at least two of the following features: tidal characteristics. 		cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV)		
SC 2.1. Has the WA Department of Natural Resources updated their website Conservation Value?	Yes - Go to SC 2.2 No - Go	
SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Co	onservation value? Yes = Category I No = Not	a WHCV
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.g	Heritage wetland?	
Yes - Contact WNHP/WDN		
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of their website?	High Conservation Value and liste 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? Us	se the key
below. if you answer YES you will still need to rate the wetland base SC 3.1. Does an area within the wetland unit have organic soil horizons, either the wetland unit have organic soil horizons, either the wetland unit have organic soil horizons.	sea on its junctions. her peats or mucks, that compos	e 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 peat over bedrock, or an impermeable hardpan such as clay or volcanic apond?	s or mucks, that are less than 16 ish, or that are floating on top of Yes – Go to SC 3.3 No = Is n	a lake or
SC 3.3. Does an area with peats or mucks have more than 70% cover of mo cover of plant species listed in Table 4? Yes =	sses at ground level, AND at leas	t a 30% to SC 3.4
NOTE: If you are uncertain about the extent of mosses in the under measuring the pH of the water that seeps into a hole dug at least 10 plant species in Table 4 are present, the wetland is a bog.	story, you may substitute that cr 5 in deep. If the pH is less than 5.	O and the Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spr western hemiock, lodgepole pine, quaking aspen, Engelmann spruc species (or combination of species) listed in Table 4 provide more t	e, or western white pine, AND a han 30% of the cover under the o	ny of the

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

Wetland	name	or n	umbe	er C
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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Olympic Terrace - V	<u>/etland E</u> Date of site visit: 3/1/17
Rated by A. Clark Train	ned by Ecology? \checkmark YesNo Date of training9/29/16
HGM Class used for rating Depressional	Wetland has multiple HGM classes?Y _✓_N
NOTE: Form is not complete without the Source of base aerial photo/map _ Goo	figures requested (figures can be combined). ogle Earth, WDOE
OVERALL WETLAND CATEGORY IV (b	ased on functions <u></u> or special characteristics)
1. Category of wetland based on FUNCTI	ONS
Category I — Total score = 23 -	27
Category II - Total score = 20	- 22 Score for each function based
Category Total score = 16	on three
Category IV - Total score = 9 -	ratings (order of ratings

FUNCTION		mpro ater C	ving Quality	Н	lydrol	ogic		Habit	tat	
		Circle the appropriate ratings					1			
Site Potential	Н	M	L	Н	M	L	Н	М	(L)	
Landscape Potential	Н	М	(Н	М	(L)	H	М	L	ĺ
Value	Н	M	(Н	M	(1)	Н	М	(L)	TOTAL
Score Based on Ratings		4			4			5		13

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	NA

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1 _
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	5

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	\$4.1	
(can be added to figure above)		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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 en	ire unit usually	controlled by	y tides excep	t 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 E

NO – go to 6

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

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

NO – go to 7 YES – The wetland class is Depressional

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

NO – go to 8

YES – The wetland class is Depressional

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

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

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

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

DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to Improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	
points = 3	3
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	3
points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	
and the first the first terminal and the second sec	
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	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	1
Wetland has persistent, ungrazed, plants > ½ of area points = 3	•
Wetland has persistent, ungrazed plants > \frac{1}{10} of area points = 1	
Wetland has persistent, ungrazed plants <1/10 of area points = 0	
D 1.4. Characteristics of seasonal ponding or Inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	2
Area seasonally ponded is > 1/2 total area of wetland points = 4	~
Area seasonally ponded is > 1/2 total area of wetland points = 2	
Area seasonally ponded is < 1/2 total area of wetland points = 0	
Total for D 1 Add the points in the boxes above	6
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page	e
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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
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?	
Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the first	page
D 3.0. Is the water quality improvement provided by the site valuable to society?	
The state of the s	
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 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the	0
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? 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	0
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	
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? D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0 D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES)	0

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradati	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 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)	3
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	3
Total for D 4 Add the points in the boxes above	10
Rating of Site Potential If score is: 12-16 = H	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	0
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	0
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	0
Total for D 5 Add the points in the boxes above	0
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?	- 1 E
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooding occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. Flooding from groundwater is an issue in the sub-basin. The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	0
There are no problems with flooding downstream of the wetland. points = 0	
There are no production with needing devices of the production of	_
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	0
Rating of Value if score is:2-4 = H1 = M0 = L	first page

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

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number — Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not ye where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas the permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H strata)	least 3.3 ft (1 m) (> 30 degree t weathered nat are 1.1 for list of	1
Total for H 1 Add the points in t		6
Rating of Site Potential If score is:15-18 = H7-14 = M	cord the rating on t	he first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat 25 + [(% moderate and low intensity land uses)/2]. If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon <10% of 1 km Polygon + 1.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: % undisturbed habitat 40 + [(% moderate and low intensity land uses)/2]. Undisturbed habitat > 50% of Polygon	points = 3 points = 2 points = 1 points = 0 18	2
Undisturbed habitat 10-50% and in 1-3 patches Undisturbed habitat 10-50% and > 3 patches Undisturbed habitat < 10% of 1 km Polygon H 2.3. Land use intensity in 1 km Polygon: If	points = 2 points = 1 points = 0	
> 50% of 1 km Polygon is high intensity land use < 50% of 1 km Polygon is high intensity	points = (- 2)	
Total for H 2 Add the points in		5
100010110	cord the rating on th	ne first page
H 3.0. Is the habitat provided by the site valuable to society?		 -
	the highest score	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only to that applies to the wetland being rated. Site meets ANY of the following criteria: — It has 3 or more priority habitats within 100 m (see next page)	points = 2	
 It provides habitat for Threatened or Endangered species (any plant or animal on the stat 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 R It has been categorized as an important habitat site in a local or regional comprehensive Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m 	desources plan, in a points = 1	0
Site does not meet any of the criteria above Rating of Value if score is: 2 = H1 = M0 = L	points = 0 ecord the rating on	the first paae
Kating of value it score is:t = Mt = Mt = L	ecord the ruthing on	me lust bade

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
theck 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	
— AAIGH & Sallintry Breater chair or but	
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 No - Go to SC 1.2	? Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25) — At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category I	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCN	
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 WHCN	,
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 WHC	/
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the keeplow. If you answer YES you will still need to rate the wetland based on its functions. SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in a more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.5 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	or 2
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake α pand? Yes – Go to SC 3.3 No = is not a bo	or g
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. NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion 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.	4 by
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog.	'

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the wetland based on its functions. — Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered			
canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).			
Yes = Category I No = Not a forested wetland for this section	Cat. I		
SC 5.0. Wetlands in Coastal Lagoons			
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks			
The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) Yes Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I		
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).			
 At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than ¹/₁₀ ac (4350 ft²) 			
Yes = Category I No = Category II			
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:			
 Long Beach Peninsula: Lands west of SR 103 Grayland-Westport: Lands west of SR 105 Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to SC 6.1 No = not an interdunal wetland for rating 	Cat I		
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2	Cat. II		
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 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?	Cat. III		
Yes = Category III No = Category IV	Cat. IV		
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	NA		
in your answered indition an types, enter indit Applicable on Summary Form	14/7		

Wetland	name	or	number	Е

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Olympic Terrace - Wetland F/X Date Rated by A. Clark Trained by Ecology? ✓ Yes	e of site visit: <u>3/1/1</u> 7 No Date of training <u>9/29/1</u> 6
HGM Class used for rating Depressional Wetland has multiple H	HGM classes? <u>√</u> YN
NOTE: Form is not complete without the figures requested (figure Source of base aerial photo/map <u>Google Earth, WDOE</u>	res can be combined).
OVERALL WETLAND CATEGORY (based on functions $\sqrt{}$ or	special characteristics)
1. Category of wetland based on FUNCTIONS	
Category I - Total score = 23 - 27	
Category II - Total score = 20 - 22	Score for each function based
Category III – Total score = 16 - 19	on three
Category IV − Total score = 9 - 15	(order of ratings is not
FUNCTION Improving Hydrologic Habitat	important)

FUNCTION	Improving Water Quality		Hydrologic			Habitat				
					Circle	the ap	propr	iate ra	tings	
Site Potential	H	M	L	Н	М	①	Н	M	L	
Landscape Potential	Н	М	(L)	Н	М	(1)	H	М	L	
Value	Н	M	(Н	М	(L)	(H)	М	L	TOTAL
Score Based on Ratings		4			3			8		15

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	NA

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	11
Map of the contributing basin	D 4.3, D 5.3	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	5

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	S 4.1	
(can be added to figure above)	<u> </u>	
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat	<u> </u>	
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.



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 F/X

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.

DESDEGGIONAL AND ELASO METALONO.	
DEPRESSIONAL AND FLATS WETLANDS	
Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1	2
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 laver) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	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 Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area points = 1 points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is < ½ total area of wetland points = 2 points = 0	2
Total for D 1 Add the points in the boxes above	7
Rating of Site Potential If score is: 12-16 = H	ge
D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
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? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the firs	t 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 ml) 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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	0
Rating of Value If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page	

	-
<u>DEPRESSIONAL AND FLATS WETLANDS</u> Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradations.	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	ЩП
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet 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	0
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 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	3
Total for D 4 Add the points in the boxes above	5
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	0
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	0
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	0
Total for D 5 Add the points in the boxes above	0
Rating of Landscape Potential If score is:3 = H1 or 2 = M0 = L	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooding occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin.	0
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?	0
Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	
Rating of Value If score is:2-4 = H1 = M0 = L Record the rating on the	jirst page

HABITAT FUNCTIONS - Indicators that site functions to pr	rovide 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 of Cowardin plant classes in the wetland. Up to 10 patches may be of % ac or more than 10% of the unit if it is smaller than 2.5 ac. A Aquatic bed Emergent Scrub-shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canop that each cover 20% within the Forested polygon	Add the number of structures checked. 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	2
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within more than 10% of the wetland or ¼ ac to count (see text for descondered for the wetland or ¼ ac to count (see text for descondered for the wetland for inundated for inund	4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 type present: points = 0	2
1.3. Richness of plant species Count the number of plant species in the wetland that cover at least the species. Different patches of the same species can be combined to meet to the species. Do not include Eurasian milifoli, reed canarygrass, if you counted: > 19 species 5 - 19 species < 5 species	he size threshold and you do not have to name	1
Decide from the diagrams below whether interspersion among C the classes and unvegetated areas (can include open water or muchave four or more plant classes or three classes and open water, to None = 0 points Low = 1 point If three diagrams this row re HIGH = 3points	owardin plants classes (described in H 1.1), or udflats) is high, moderate, low, or none. If you	2

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. The number of checks is the number of points.	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	1
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m)	
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	_
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	3
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered	- 1
where wood is exposed)	- 1
At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are	- 1
permanently or seasonally inundated (structures for egg-laying by amphibians)	
Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	10
Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	-
Calculate: % undisturbed habitat $\frac{25}{5}$ + [(% moderate and low intensity land uses)/2] $\frac{5}{5}$ = $\frac{30}{5}$ %	
If total accessible habitat is:	2
> 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	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate: % undisturbed habitat 40 + [(% moderate and low intensity land uses)/2] 18 = 58 %	
Oliginating lighter pays at 1 align.	3
Oligisting a manage as a service of the service of	
Olidiated Habitet 29 3070 and 7 5 persons	
Olidistal bed Habitat 1 20% of 2 kin 1 oligan	
H 2.3. Land use intensity in 1 km Polygon: If	0
> 50% of 1 km Polygon is high intensity land use points = (-2)	
≤ 50% of 1 km Polygon is high intensity points = 0	
Total for H 2 Add the points in the boxes above	5
Rating of Landscape Potential If score is: 4-6 = H1-3 = M<1 = L Record the rating on t	he first page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score	
that applies to the wetland being rated. Site meets ANY of the following criteria: points = 2	
Side filed as file following enterior	
It has 3 or more priority habitats within 100 m (see next page)	2
— 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 instance instance instance page, warming	1
Site does not meet any of the criteria above points = 0	Alle - Post
Rating of Value If score is: \(\sum_2 = H \)1 = M0 = L Record the rating on	tne jirst page

14

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	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	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (if non-native species are Spartina, see page 25) — At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	Cat. I
mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to Include the list of Wetlands of High Conservation Value? SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV	Cat. I
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below. If you answer YES you will still need to rate the wetland based on its functions.	
SC 3.1. Does an area within the wetland unit have organic soll 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.	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemiock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	

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

Wetland name or number F/X

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RATING SUMMARY – Western Washington

Name of wetland (or ID #): Olympic Terrace - Wetland Y Date	of site visit: <u>3/1/1</u> 7
Rated by <u>A. Clark</u> Trained by Ecology? ✓ Yes	_No Date of training <u>9/29/16</u>
HGM Class used for rating Depressional Wetland has multiple H	GM classes? <u>√</u> YN
NOTE: Form is not complete without the figures requested (figure Source of base aerial photo/map Google Earth, WDOE	es can be combined).
OVERALL WETLAND CATEGORY (based on functions $\sqrt{\ }$ or	special characteristics)
1. Category of wetland based on FUNCTIONS	
Category I — Total score = 23 - 27	Coore Coorest
Category II — Total score = 20 - 22	Score for each function based
Category III – Total score = 16 - 19	on three
Category IV - Total score = 9 - 15	(order of ratings

FUNCTION		mpro Iter Q	ving uality	Н	ydrol	ogic		Habita	at	
					Circle	the ap	propr	iate ra	tings	1
Site Potential	Н	M	L	Н	M	L	Н	(M)	L	1
Landscape Potential	Н	М	(L)	Н	М	(1)	H	М	L	1
Value	Н	М	0	Н	M	(1)	H	М	L	TOTAL
Score Based on Ratings		4			4			8		16

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	II 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	NA

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	5

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	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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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

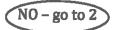
Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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?



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 Y

NO - go to 6

YES - The wetland class is Riverine

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

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

NO - go to 7

YES - The wetland class is Depressional

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

NO - go to 8

YES - The wetland class is Depressional

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

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

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

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

DEPRESSIONAL AND FLATS WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet).	
points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2	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 laver) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	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	
Wetland has persistent, ungrazed, plants > ½ of area points = 3	5
Wetland has persistent, ungrazed plants $> \frac{1}{10}$ of area points = 1	
Wetland has persistent, ungrazed plants $< \frac{1}{10}$ of area points = 0	
D 1.4. Characteristics of seasonal ponding or Inundation:	
This is the area that is ponded for at least 2 months. See description in manual.	•
Area seasonally ponded is > 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 Add the points in the boxes above	9
Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page	je
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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
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? Source	0
Total for D 2 Add the points in the boxes above	0
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the firs	t page
D 3.0. Is the water quality improvement provided by the site valuable to society?	=70
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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	0
Rating of Value If score is:2-4 = H1 = M0 = L Record the rating on the first page	

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet 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 Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	3
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	3
Total for D 4 Add the points in the boxes above	8
Rating of Site Potential If score is: 12-16 = H	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	0
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	0
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	0
Total for D 5 Add the points in the boxes above	0
Rating of Landscape Potential If score s:3 = H1 or 2 = M0 = L	first page
D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): Flooding occurs in a sub-basin that is immediately down-gradient of unit. Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin.	0
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?	0
Yes = 2 No = 0	
Total for D 6 Add the points in the boxes above	0
Rating of Value If score is:2-4 = H1 = M0 = L Record the rating on the	first page

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

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree	3
slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphiblans) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	- 10
Total for H 1 Add the points in the boxes above	10
Rating of Site Potential If score is:15-18 = H	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat $\frac{25}{5}$ + [(% moderate and low intensity land uses)/2] $\frac{5}{5}$ = $\frac{30}{5}$ %	
If total accessible habitat is:	2
> 1/3 (33.3%) of 1 km Polygon points = 3	
20-3370 01 2 kill 1 0198011	
10-13/601 1 (1)11 1-01/8011	
H 2.2 Undisturbed babitat in 1 km Polygon around the wetland.	
Calculate: % undisturbed habitat 40 + [(% moderate and low intensity land uses)/2] 18 = 58 %	
Undisturbed habitat > 50% of Polygon points = 3	3
Undisturbed habitat 10-50% and in 1-3 patches points = 2	3
Undisturbed habitat 10-50% and > 3 patches points = 1	
Undisturbed habitat < 10% of 1 km Polygon points = 0	<u> </u>
H 2.3. Land use intensity in 1 km Polygon: If	0
> 50% of 1 km Polygon is high intensity land use points = (-2) < 50% of 1 km Polygon is high intensity points = 0	
2 30% of 1 kill tolybor is tage intensity	5
Rating of Landscape Potential If score is: V 4-6 = H1-3 = M<1 = L Record the rating on t	no just page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score	
that applies to the wetland being rated. Site meets ANV of the following criteria: points = 2	
Size meets ANY of the following criteria: It has 3 or more priority habitats within 100 m (see next page)	
It has 3 or more priority habitats within 100 in (see next page) It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)	2
— 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 Pian, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1	
Site illas 2 of 2 priority habitod (illated of riority page) when 200 ill	
Site does not meet any of the criteria above points = 0 Peting of Value if score is: 2 = H 1 = M 0 = L Record the rating or	the first name
Rating of Value if score is: $\sqrt{2} = H$ 1 = M0 = L Record the rating of	are luar bage

Wetland	name	or	num	her	Υ
wettand	name	or	num	ber	

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).
- Riparlan: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 see web link above).
- Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).
- Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetlan	d Type	Category
	any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
D	istuarine wetlands oes 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 	
C 1.1. Is	s the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area reserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category 1 No - Go to SC 1.2	Cat. I
	the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (if non-native species are Spartina, see page 25) — At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-	Cat. I
	mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category ! No = Category !	Cat. II
C 2.1. H	Wetlands of High Conservation Value (WHCV) las the WA Department of Natural Resources updated their website to include the list of Wetlands of High conservation Value? The Wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category No = Not a WHCV	Cat. I
<u>h</u>	s 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	
	las WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on heir website? Yes = Category I No = Not a WHCV	
5C 3.1. D	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key</i> below. If you answer YES you will still need to rate the wetland based on its functions. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or	
sc 3.2. D	more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to 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 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? 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.	Cat. I
SC 3.4. I	s an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	

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

Wetland	name	or	number	Υ

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RATING SUMMARY – Western Washington

Marile of Wetland (or ID #): Olympic Tem	race - Wetland Z Date of site visit: 3/1/1/	
Rated by A. Clark	Trained by Ecology? ✓ YesNo Date of training 9/29/1	6
HGM Class used for rating Depressional	Wetland has multiple HGM classes? Y ✓ N	
NOTE: Form is not complete with a Source of base aerial photo/ma	out the figures requested (figures can be combined). ap Google Earth, WDOE	
OVERALL WETLAND CATEGORY	☐ (based on functions ✓ or special characteristics)	
1. Category of wetland based on F	UNCTIONS	
Category I – Total score	e = 23 - 27	
Category II - Total scor	re = 20 - 22 Score for each function based	

FUNCTION		mpro	ving	Н	ydrol	ogic		Habita	at	
					Circle	the ap	propr	iate ra	tings	1
Site Potential	Н	M	L	Н	M	L	Н	(M)	L	1
Landscape Potential	Н	M	L	Н	M	L	(H)	М	L	
Value	Н	М	(L)	Н	М	(L)	H	М	L	TOTAL
Score Based on Ratings		5			5			8		18

Category III - Total score = 16 - 19

Category IV - Total score = 9 - 15

function based on three ratings (order of ratings is not important) 9 = H,H,H8 = H.H.M7 = H,H,L7 = H,M,M6 = H,M,L6 = M,M,M5 = H,L,L5 = M,M,L4 = M,L,L3 = 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	NA

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	11
Hydroperiods	D 1.4, H 1.2	11
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	3
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	4
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	5

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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
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	<u> </u>

Slope Wetlands

Map of:	To answer quastions:	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	S 4.1	
(can be added to figure above)		
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	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat	<u> </u>	
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.



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 Z

NO – go to 6

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

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

NO - go to 7

YES - The wetland class is Depressional

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

NO - go to 8

YES - The wetland class is Depressional

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

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

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

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

DEPRESSIONAL AND FLATS WETLANDS Water Quality Functions - Indicators that the site functions to improve water quality	
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland:	T -
Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet.	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 laver) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0	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 Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > ½ of area Wetland has persistent, ungrazed plants > ½ of area points = 1 Wetland has persistent, ungrazed plants < ½ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is < ½ total area of wetland points = 2 points = 0	2
Total for D 1 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	je
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	0
D 2.2. Is > 10% of the area within 150 ft of the wetland In land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 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? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	1
Rating of Landscape Potential If score is:3 or 4 = H1 or 2 = M0 = L Record the rating on the first	t 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 ml) 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	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	0
Rating of Value if score is: 2-4 = H 1 = M 1 = M Record the rating on the first page	-

DEPRESSIONAL AND FLATS WETLANDS	
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation	on
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland:	
Wetland is a depression or flat depression with no surface water leaving it (no outlet) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outletpoints = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D.4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands	
with no outlet, measure from the surface of permanent water or if dry, the deepest part.	
Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 3 ft to < 3 ft from surface or bottom of outlet points = 5	
Malks of boliging between 5 if to 2 st trought strategy of passess.	3
Marks are at least 0.5 It to < 2 It moin surface of bottom of outlet	_
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)	
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	5
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 V 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	0
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 Add the points in the boxes above	1
Total for B 5	•
Rating of Landscape Potential if score is: 3 = H 1 or 2 = M 0 = L Record the rating on the	Just bade
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):	0
Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2	0
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?	0
Yes = 2 No = 0	0
Total for D 6 Add the points In the boxes above	
Rating of Value If score is:2-4 = H1 = M0 = L Record the rating on the	jirst page

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

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). Standing snags (dbh > 4 in) within the wetland Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) At least ½ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	2
Total for H 1 Add the points in the boxes above	2
Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L Record the rating on a	the first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit). Calculate: % undisturbed habitat $\underline{25}$ + [(% moderate and low intensity land uses)/2] $\underline{5}$ = $\underline{30}$ % If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon 20-33% of 1 km Polygon 10-19% of 1 km Polygon < 10% of 1 km Polygon > 10 f 1 km Polygon 10 f 1 km Polygon 20 f 1 km Polygon 30 f 1 km Polygon 40 f 1 km Polygon 50 f 1 km Polygon 61 f 1 km Polygon 70 f 1 km Polygon 70 f 1 km Polygon	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. **Calculate:** % undisturbed habitat \frac{40}{40} + [(% moderate and low intensity land uses)/2] \frac{18}{2} = \frac{58}{9} \times \frac{9}{2} = \frac{100}{2} = \frac{100}{	3
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	5
Rating of Landscape Potential If score is: 4-6 = H1-3 = M<1 = L Record the rating on the state of the	he first page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated. Size meets ANY of the following criteria: It has 3 or more priority habitats within 100 m (see next page) It provides habitat for Threatened or Endangered species (any plant or animal on the 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	2
Site has 1 or 2 priority habitats (listed on next page) within 100 m	
Site does not meet any of the criteria above points = 0 Record the rating of Value if score is:	the first page
Record the rating of) h 8

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
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 wetlands? No= Not an estuarine wetlands?	land
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-Yes = Category I No - Go to SC	151? Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has les than 10% cover of non-native plant species. (If non-native species are Spartina, see page 25) — At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-gr	9961
rnowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, contiguous freshwater wetlands. Yes = Catagory I No = Category I	or Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of Hi Conservation Value? SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Catagory I No = Not a W	¢ 2.3
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 W SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it their website? Yes = Category I No = Not a W	on .
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the below, if you answer YES you will still need to rate the wetland based on its functions.	ne key
SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in do over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lappond? Yes – Go to SC 3.3 No = is not as	C 3.2 leep ike or
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 3 cover of plant species listed in Table 4? Yes = Is a Category 1 bog No - Go to S NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criter 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 are plant species in Table 4 are present, the wetland is a bog.	30% C 3.4 Ion by and the
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 species (or combination of species) listed in Table 4 provide more than 30% of the cover under the cand Yes = Is a Category I bog No = Is not a	of the opy?

SC 4.0. Forested Wetlands	1
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i>	
 Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). 	
Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
 Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks 	
— The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon	Cat. I
SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
 At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland is larger than ¹/₁₀ ac (4350 ft²) 	
Yes = Category I No = Category II	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? If you answer yes you will still need to rate the wetland based on its habitat functions. In practical terms that means the following geographic areas:	
Long Beach Peninsula: Lands west of SR 103 Grayland-Westport: Lands west of SR 105 Ocean Shores-Copalis: Lands west of SR 115 and SR 109	Cat I
Yes – Go to SC 6.1 No = not an Interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	Cat. II
Yes = Category II No - Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat. III
	Cat. IV
Category of wetland based on Special Characteristics	NA
If you answered No for all types, enter "Not Applicable" on Summary Form	INA

Wetland name or number Z

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