WETLAND ANALYSIS REPORT

FOR THE

POINT NO POINT WETLAND

HANSVILLE

Kitsap County, Washington

Prepared For:

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TABLE OF CONTENTS

FIGURES AND ATTACHMENTS

EXECUTIVE SUMMARY

The Point No Point Wetland system is located at the northeastern tip of the Kitsap Peninsula and is positioned south of the Point No Point Lighthouse and Keepers House. It is confined to a closed depression but is considered a coastal lagoon because it is separated from the marine waters of Puget Sound by a wide beach berm to the east. To the north, there is also beach abutting the berm between the wetland and Puget Sound but is fully developed with Point No Point Road, park/lighthouse parking and the lighthouse itself. There is upland forested bluff and residential development to the south that continues in a westerly direction to the western extent of the wetland area. The wetland is composed mostly of an emergent community dominated by a mixture of salt tolerant species in the eastern half and by freshwater species in the west half. The freshwater component is dominated by reed canarygrass for the most part. Forested wetland conditions make up a small portion of the wetland and mainly includes the stream system that enters the wetland in the west half as well as a portion of the western extent of the wetland. A dense scrub/shrub ring runs along the east edge of the wetland but the vegetation is rooted in the upland zone so the wetland generally lacks a well developed scrub/shrub community.

Hydrologically, this wetland appears to be influenced by both freshwater and salt water sources. The freshwater sources include the stream from the south along with winter time runoff from Point No Point Road and residential development in this area and the freshwater community is confined to the west end. The saltwater sources are not as clearly identified because there is no direct surface connection to Puget Sound. Salinity data collected in the eastern half shows high levels of salt in the surface waters, which is confirmed by the dominant salt tolerant plant species in the east half. The source of the salt water appears primarily to be underground intrusion through the two berms with some overland flow in the winter during king tides. Another possible source is overspray during high tides and windy weather but the berms are so wide that this appears unlikely to occur or occurs very rarely. There may also be some salt water entering the wetland via the tide gate during high tides because it is currently in a state of disrepair.

Flooding is the number one issue associated with the Point No Point Wetland system because the storage capacity is frequently exceeded during severe storm events in combination with high tides. Much of Point No Point Road and residential areas north of the road are flooded during these events. Because the area is frequently flooded in winter, future plans include determining how to alleviate flooding of the road and homes in the area while maintaining the integrity of the wetland. The flooding issue is exacerbated by the malfunctioning tide gate that does not allow freshwater outflow quickly enough to avoid flooding developed areas and at some point in the future, the tide gate will be replaced. Another feature associated with the flooding is the frequent blockage of the outfall pipe by sand and debris, which necessitates regular maintenance by public works. The pipe is also broken and currently, the plan is to repair the broken section and extend it to its original length so that

the outfall is lower on the beach and into marine waters. Placing the outfall at a lower elevation is intended to lower the chance of blockage and reduce the man hours necessary to maintain the pipe.

The Point No Point Wetland was rated using the 2004 Wetland Rating System for Western Washington, 2008 updated version, and the rating form indicates the wetland meets the criteria for a Depressional, Category I wetland based on functions. It meets the definition of a coastal lagoon in the Special Characteristics section of the rating form and is a Category I according to the definition. The buffers around the wetland are nearly fully developed particularly on the north side so a buffer width is not designated. The categorization will be used as a guideline that will be utilized to design appropriate restoration for impacts that may occur directly and indirectly to the wetland.

Portions of the wetland that abut existing development (including Point No Point Road) were delineated to identify the extent of wetlands in areas where future upland activity may occur. This report is intended to provide an overview and analysis of existing wetland conditions based on data collected during the delineation and general observations made around the wetland so that impacts of future developmental activities can be determined for this system. It is also intended to assist in determining the restoration potential for this coastal lagoon system that may be required to compensate for developmental impacts to the function of the wetland or to just improve the condition of the system. Current activities proposed on properties around the wetland include upgrading the existing parking lot for the park and lighthouse and improvement to existing sections of the tide gate.

PROPERTY OWNERSHIP AND EXISTING DEVELOPMENT

The Point No Point wetland lies primarily on properties owned by Kitsap County and those owned by Point No Point (see Figure #1) . There are two privately owned properties that encompass the shoreline east of the wetland and one that extends north along Hillview Lane to Point No Point Road. Point No Point Road lies north of the wetland and ends near the lighthouse at the existing parking lot for the park. A small single family home lies just west of the parking lot and the Point No Point Lighthouse, guest house/office and gift shop lie east of the parking lot. A nature trail runs at the top edge of the beach berm around the east edge of the wetland. Hillview Lane is a private, single lane gravel driveway that crosses through the western half of this wetland system and provides access to the residential development south of the wetland. A wooded bluff lies east of the residential development and provides the remainder of the southern buffer of the wetland.

The wetland boundary in four separate sections of the Point No Point Wetland system was delineated to identify the extent of the wetland mostly in areas adjacent to future upland development as well as to assist in characterization and categorization of the system. The undelineated sections of the wetland were examined to determine their extent as well and roughly mapped on Figure #2. The sections include the area along the the tide gate to identify the boundary for future tide gate replacement; the north wetland boundary between

the light house and Point No Point Road; the old road that extends into the wetland from Point No Point Road and the western extent of the county owned property. The delineation was also conducted to identify potential restoration areas for future compensation as well as improvement of storage capacity within this system.

CRITICAL AREAS MAPPING

Kitsap County Soil Survey

Most of the soil map unit within the Point No Wetland is 62 Tacoma silt loam with some areas mapped as 45 Ragnar fine sandy loam, 6-15% slopes at the west end, according to the Natural Resources Conservation Service, Web Soil Survey and the Soil Conservation Service, Soil Survey for the Kitsap County Area, September 1980. Tacoma silt loam is a common soil map unit of wetlands in coastal areas and is classified as hydric. The Ragnar soil unit is not classified as hydric and contains no inclusions of hydric soil types. See Figure #3 for site located on the web soil survey map.

National Wetlands Inventory

The US Fish and Wildlife Service, National Wetlands Inventory (NWI), Hansville Quadrangle, maps the entire area of the Point No Point Wetland as Palustrine, Emergent, Temporarily flooded, ditched (PEMAd) with a portion mapped as Palustrine, Emergent, Seasonally flooded (PEMC) at the west end. See Figure #4 for site located on the NWI map.

Washington Department of Natural Resources, Forest Practices Application Review System

The Washington Department of Natural Resources, Forest Practices Application Review System (FPARS) website was visited to determine the water type of the historic ditch through the Point No Point Wetland.. According to the FPARS map obtained, the historic ditch is a Type F water that is part of a stream that begins at least a mile south of the Point No Point area. It runs northerly in a ravine west of Hillview Lane and enters the west end of the wetland system. The Washington Department of Fish and Wildlife, Priority Habitats and Species maps indicate that the stream has usage by resident cutthroat but no anadromous species on the endangered species list because of the tide gate at the mouth of the stream. See Figure #5 for site located on the FPARS map.

Priority Species

The Washington Department of Fish and Wildlife, Priority Habitats and Species maps indicate the presence of several priority habitats and species. The wetland itself is mapped as a priority habitat (Region 6 Saltwater Wetlands) and is described as a Coastal Saltmarsh, salt meadows, and brackish marshes. The wetland and the adjacent shoreline are priority waterfowl concentration areas that include brants so is an important stop on the migratory route. Nearby, there are mountain quail concentrations in the Eglon area south of Point No Point. Bald eagles are common in this area as well with nests and feeding habitats near and

along the wetland and shoreline communities. The shoreline east of the wetland is priority habitat for Dungeness crab, surf smelt/sand lance, hardshell intertidal clam and subtidal geoduck.

WETLAND DELINEATION METHODOLOGY

The onsite wetland delineation was conducted on February 18, 2013 using the US Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region per the local, state and federal agency requirements. This manual requires the use of the three wetland parameter methodology (wetland hydrology, hydrophytic vegetation, and hydric soils) when making wetland determinations (see Appendix C for criteria used to make wetland determinations) when a site is under normal circumstances. The Routine On-Site Method was used to delineating the on-site wetland boundaries because the site is under normal circumstances. This report includes a discussion of the on-site wetlands with respect to the data collected in the field used in conjunction with information obtained from the web soil survey, National Wetlands Inventory, the Washington DNR FPARS mapping and Washington Department of Fish and Wildlife Priority Habitats and Species maps. This report includes data collected during the field delineation to verify the wetland boundary determination and to document current conditions as well as aerial photo mappings that document existing vegetation, wetland boundary and salinity conditions.

WETLAND ASSESSMENT

The assessment of the Point No Point Wetland system includes a mostly aerial boundary delineation with ground truthing to verify the boundary. On the ground delineations were conducted along future work areas of this system including the parking lot north of the wetland, the tide gate area on the east side of the wetland and along Point No Point Road so that the boundary is physically identified in these areas. The assessment also includes sampling of the ground and surface water to determine salinity throughout the wetland system. This will aid in assessing restoration potential and outcomes as proposed in the future.

The following sections describe the data collected in the wetland and used to verify the boundary field delineations and the salinity readings of ground and surface water areas. The wetland boundary data is presented in the Point No Point Wetland Delineation and Data Description section, which includes a description of the dominant plant species, the soil profile and whether hydric soil indicators are present, and the presence/absence of wetland hydrology and/or wetland hydrology indicators (see Attachment #4 for Methods and Criterion) for each wetland and the adjacent upland. The dominant plant species are identified by common and botanical name along with the indicator status (OBL, FACW, FAC, etc. See Attachment #5 for Definition of Indicator Status) is listed on the front of each data form. The presence of hydric soil conditions is examined in 16 to 24 inch soil holes conducted at each test hole. The hydric soil criterion is met when there is a low soil matrix

hydric soil indicators listed in the manual. The chromas are determined using damp soil samples that are compared to a corresponding color chip in the Munsell Soil Color Charts. The chromas are then recorded on the data forms using Hue (YR) and Value/Chroma. Low Hues and Values with redoximorphic features as described for the appropriate hydric soil indicator is typical of hydric (wetland) soils that have developed over time due to inundation or saturation by water. The presence of hydric soils is determined using the criteria in the Hydric Soil Guidebook developed by the USDA Natural Resources Conservation Service, Version 7.0, 2010 (USDA, 2010). The presence or absence of wetland hydrology and/or wetland hydrology indicators includes the source of hydrology and direction of flow (if evident).

Wetland Delineation and Data Description

The entire boundary of the Point No Point Wetland was identified using Google Earth photos but some sections were flagged in the field to physically identify the boundary where the wetland lies adjacent to existing development, which includes the lighthouse property, the park parking lot and along sections of Point No Point Road. The flagged boundaries are also intended to identify non-wetland areas that could be utilized in future restoration activities. The following sections provide an overview of the data collected in the wetland with regard to the boundary delineation and observations made during multiple site visits. A section is included to describe data collected at test holes conducted in the wetland and adjacent upland areas where the boundary was flagged in the field. A section is included that describes the vegetation community complexes observed throughout the Point No Point wetland. Observations of hydrology are also documented based on aerial photos showing the site flooded with water and frequent visits between January and April 2013. Photos are included of the wetland to visually document conditions within the delineated and non-delineated areas (see Attachment #1).

Aerial Wetland Boundary Delineation and Description

The aerial delineation depicts the limits of the Point No Point Wetland including the coastal lagoon section and the freshwater emergent and forested components that occupy the western extent (see Figure #6). The coastal lagoon is bounded to the east by the wide beach berm that lies between the wetland and Puget Sound. There is currently no natural opening and the release of water from the wetland currently occurs via a tide gate. It appears that some saltwater is able to enter the lagoon through the beach berm and via the tide gate. There appears to be little overspray from the sea because of the wide berm but may occur during king tides, which cause water to flood across most of the wetland. The lagoon is bounded to the south by a wooded bluff and upland forest that is currently undeveloped. The area north of the wetland is developed with the lighthouse at the point and guest house, gift shop and parking lot. A small single family home lies adjacent to the northern wetland boundary just west of the parking lot. A portion of the northern extent is bordered by Point No Point Road.

The freshwater component of the Point No Point Wetland system begins where the salt marsh community gives way to the reed canarygrass dominated community as roughly indicated on Figure #6. The figure shows that the freshwater component begins near the western extent of the forested community that lies south of the lagoon portion. The reed canarygrass area contains patches of hardstem bulrush and cattails that can be seen through openings in the brush along Point No Point Road. It also includes the forested component that is associated with the Type F stream as it flows from the south and the forested area west of the emergent areas. This section of wetland includes the ditch that conveys freshwater runoff from the road and homes into the wetland system.

Point No Point Wetland Vegetation Communities-Salt Marsh/Coastal Lagoon
Most of the Point No Point Coastal Lagoon community is dominated by salt grass (*Distichlis spicata*) and Pacific silverweed (*Argentina anserina*); saltmarsh bulrush (*Schoenoplectus maritimus*); saltmarsh rush (*Juncus gerardii*); and Lyngby's sedge (*Carex lyngbyeii*) occurring as subdominants within some areas of the wetland (see Attachment #1, Photos 4-11). There is a somewhat large area of cattail growing in the northeast corner just north of the historic farm fence but it is unclear which species it is because the surface water had a salinity of 3 ppt. It is possible the species is *Typha latifolia* if the salinity of the water changes over the spring and summer to less than 0.5 ppt. It also could be *Typha angustifolia* if the salinity remains unchanged over the spring and summer. The area of cattails is growing in an area that is predominantly dominated by salt grass with some saltmarsh bulrush growing amongst the cattails. Small areas contain freshwater species including water parsley (*Oenanthe sarmentosa*); crabapple (*Malus fusca*); curly dock (*Rumex crispus*) and reed canarygrass (*Phalaris arundinacea*), which are growing on slightly raised areas of the marsh. There is a small patch of hardstem bulrush (*Schoenoplectus acutus*) growing at the junction of two ditches at the west end. There are also areas of Himalayan blackberry (*Rubus armeniacus*) growing along the perimeter, along the historic fence across the northeast corner and along portions of the main ditch.

Point No Point Wetland Vegetation Communities-Freshwater Emergent and Forested
Much of the freshwater community is dominated by reed canarygrass (*P. arundinacea*) with small patches of cattail (*T. latifolia*) and hardstem bulrush (*S. acutus*) present in portions of the wetland. The perimeter of the wetland is dominated by a mixture of Himalayan blackberry (*R. armeniacus*) and Nootka rose (*Rosa nutkana*) along with small percentages of salmonberry (*Rubus spectabilis*). The freshwater emergent community is roughly divided in half by Hillview Lane, which is a single lane dirt road that provides access to homes on upland south of the wetland system. See Attachment #1, Photos 38-50 for visual documentation of the freshwater wetland community.

The Type F stream flows northerly across the west side of the Hillview Lane residential community and enters the west end of the wetland system. This stream eventually becomes the ditch that extends to the existing tide gate. Forested wetland is associated with the stream as revealed during a delineation of properties along Hillview Lane through which the stream

flows. The forested conditions extend westerly behind along Point No Point Road and behind several homes along the road. In general, the western extent of the forested wetland appears to be dominated by a deciduous community and the southern extent is largely composed of a mixed deciduous/coniferous community. The deciduous community is dominated by a red alder (*Alnus rubra*) canopy that appears to generally lack a shrub community and the herbaceous layer is dominated by slough sedge (*Carex obnupta*). The The dominant species in the mixed forest include western red cedar (*Thuja plicata*) FAC and red alder (*A. rubra*) with salmonberry (*Rubus spectabilis*) dominating the shrub layer and a mixture of lady fern (*Athyrium filix-femina*), skunk cabbage (*Lysichiton americanum*) OBL and reed canarygrass (*Phalaris arundinacea*) FACW.

Wetland Boundary Delineation-Flagged Areas

Four areas of the wetland boundary have been physically flagged to document the limits of the wetland particularly in areas that are adjacent to developed areas and/or where future development or improvements are likely to occur. The four flagged areas include 1) the wetland immediately along the tide gate at the outlet; 2) along the north boundary between the lightkeepers house to Point No Point Road where it runs southwest to northeast; 3) the old road access at the curve in Point No Point Road and 4) the wetland area west of Hillview Lane. The wetland boundary between the tide gate and the northern wetland boundary was not formally delineated because it lies along the base of the beach berm with dense Nootka rose thickets lining the boundary. Two portions along the road were not physically flagged because there was nothing to hang flags on and the boundary lies right along the edge of the roadside ditch. The boundary delineated between the lightkeepers house is referred to as the North Wetland Boundary while the short boundary delineated at the tide gate is referred to as the Tide Gate Wetland Boundary. Areas were sampled in several locations along each section of field flagged wetland boundary to verify the boundary and to characterize conditions in these areas. See Figures 2a and 2b for delineated sections of wetland boundary and test hole locations.

Tide Gate Delineation

A short section of the wetland is delineated along the boundary where the ditched stream enters the tide gate, which extends under the wide beach berm lying east of the Point No Point Wetland (see Attachment #1, Photos 1-5 and 28-30). This section extends about 50 feet south of the gate and about 25 feet north of the tide gate. The flags in this section are labeled TG WB 1-3, which is short for Tide Gate Wetland Boundary and begin with flag 1 north of the tide gate and end with flag 3 at the south end of this section. Test Holes 1 and 2 are marked with flags that are similarly labeled TG TH 1 and 2 with Test Hole #1 in the wetland and Test Hole #2 on the upland berm north of the tide gate.

<u>Wetland Data Description</u>

Test Hole #1 is located in the salt marsh community that typifies the vegetation across the east half of the Point No Point Wetland system. The dominant species in this area include salt grass (*Distichlis spicata*) FACW and silverweed (*Argentina anserina*) OBL with lower

percentages of curly dock (*Rumex cripus*) FACW and tall fescue (*Schedonorus phoenix*) FAC also present. The soil test hole emitted a strong sulfidic odor as the hole was dug and once the hole was completed, revealed a two layer profile consisting of an 8 inch peat layer that has a matrix chroma of 10 YR 2/2 over a black coarse sand layer that has a matrix chroma of 10 YR 2/1. Hydrology was not present in the hole when it was dug but the soil was saturated to the surface indicating that water is present or was recently present in this area. During early spring visits to the site, standing water was observed in this area indicating that hydrology is present at least for a portion of the growing season.

Upland Data Description

Test Hole #2 is located on the west facing side of the beach berm and is just downslope of the trail that borders the north and east side of the wetland. The vegetation in this area is composed of emergent species with the dense shrub community beginning near the north edge of the sample area. The vegetation in the sample area is dominated by a low growing grass that appears to resemble Kentucky bluegrass (*Poa pratensis*) FAC with beach grass (*Ammophila arenaria*) FACU also dominating. Lower percentages of Queen Anne's lace (*Daucus carota*) FACU; common vetch (*Vicia sativa*) UPL and pacific silverweed (*Argentina anserina*) OBL also present. The soil test hole revealed a two layer coarse sand profile that is differentiated by color with a matrix chroma of 10 YR 2/1 from 0 to 8 inches and a chroma of 10 YR 3/2 below 8 inches. Hydrology was not present in this area during the field visit and there was no evidence of wetland hydrology. The wetland is frequently flooded in winter and when there are high tides in conjunction with heavy rain events, this area could be flooded but does not remain long enough to create wetland conditions.

North Wetland Boundary-Flags 1-24

The north wetland boundary represents the section of the delineated wetland that begins south of the light keepers residence and extends across the north edge of the wetland to Point No Point Road where it runs southwest to northeast (see Figures 2a and 2b). This delineation was conducted initially to identify the boundary for the proposed parking lot upgrades but was extended to the west to identify its boundary for other potential development proposals that might include road upgrades at some time in the future. The flags that delineate this portion of the wetland are labeled WB 1-24 but are referred to as the North Wetland Boundary to differentiate it from the other flagged sections of the wetland. Test Holes 1-4 are conducted in and around the wetland to verify the boundary delineation with Test Holes 2 and 4 located in the wetland and Test Holes 1 and 3 in slightly raised upland areas. See Attachment #1, Photos 8-11, 22-27 and 32-35 for visual documentation conditions across the north half of the wetland.

Wetland Data Description

This section of the delineated wetland is comprised of emergent vegetation dominated by saltmarsh species with freshwater species growing along the perimeter or in small patches within the salt marsh. Test Hole #2 is located in the wetland along the parking lot section and Test Hole #4 is in the wetland just beyond the small residence west of the parking lot.

The vegetation in Test Hole #2 is mostly dominated by salt grass (*Distichlis spicata*) FACW and Pacific silverweed (*Argentina anserina*) OBL with low percentages of reed canarygrass (*Phalaris arundinacea*) FACW occurring along the edge and patches of saltmarsh bulrush (*Schoenoplectus maritimus*) OBL occurring within the saltmarsh community (see Attachment #1, Photo #32). The soil hole emitted a strong sulfidic odor as it was being dug indicating the presence of reducing conditions. The profile consists of a 12 inch coarse sand surface layer that has a matrix chroma of 10 YR 2/1 and lies over a peat layer that extends at least to a depth of 16 inches having a chroma of 10 YR 2/2. Hydrology was present during the field visit as soil saturation within 10 inches of the surface with an area of standing water nearby to a depth of 6 inches. Debris was present across the top of the vegetation indicating that this area was underwater for a portion of the winter and spring seasons, which was observed during several visits to the site.

Test Hole #4 was placed at the transition from dominant freshwater vegetation to saltmarsh vegetation so there is 50% cover in the sample area by reed canarygrass (*Phalaris arundinacea*) FACW with 25% cover by saltmarsh rush (*Juncus gerardii*) FACW and 25% cover Pacific silverweed (*Argentina anserina*) OBL (see Attachment #1, Photo #35). There is lower cover by saltgrass (*D. spicata*) FACW in the saltmarsh area and low percentage of trailing blackberry (*Rubus ursinus*) FACU in the reed canarygrass area. The soil test hole in this area revealed a two layer profile that consists of a 6 inch peat surface layer that has a matrix chroma of 10 YR 2/1 over a clay loam that has a matrix chroma of 10 YR 4/1 with no visible redoximorphic features. This profile meets hydric soil indicator A11 because of the low matrix chroma conditions in the lower soil layer. Hydrology was present in the soil test hole at a depth of 10 inches with saturation of the soils to the surface. Surface water is present during the winter and early spring rain events that flood the entire Point No Point Wetland.

Upland Data Description

The upland areas sampled for the field delineation are slightly higher in elevation than the wetland and appear to have in some cases been created by historic deposition of rocks and gravel naturally and/or mechanical deposition during construction of the roadway and nearby developed areas. The upland area sampled at Test Hole #1 lies just south of the parking lot for the Point No Point Lighthouse and Kitsap County Park and Test Hole #3 lies south of Point No Point Road just west of the small home outside the park (see Attachment #1, Photos 33 and 34). The vegetation in these areas is dominated by reed canarygrass (*Phalaris arundinacea*) FACW and Himalayan blackberry (*Rubus armeniacus*) FACU. Dominant percentages of stinging nettle (*Urtica diocia*) FAC are present in the area sampled at Test Hole #1 and dominant percentages of trailing blackberry (*Rubus ursinus*) FACU are present at Test Hole #3. The soil hole at Test Hole #1 revealed a medium coarse sand that extends to a depth of at least 24 inches and has a matrix chroma of 10 YR 2/1. The soil hole at Test Hole #3 is composed of a very gravelly soil that has mostly small rocks with some sand components and has a matrix chroma of 10 YR 2/2, with no visible redoximorphic features. These profiles meet none of the hydric soil indicators because they are either composed of

sandy material that has none of the sandy hydric characteristics or the matrix chroma is too high without redoximorphic features present. In addition, neither of these areas emitted a sulfidic odor and/or did not have a peat component as found in the adjacent wetland test holes, which indicates the soils are not in a constantly flooded or saturated condition.

Hydrology was not present in either of these areas during the field delineation and there was no evidence of wetland hydrology. It is highly likely that both areas are flooded when the flood waters of the wetland extend beyond the boundaries during periods of significant winter rain events in combination with high tides. Flooding does not occur in these areas for at least 12.5% of the growing season to create indicators of wetland hydrology. Therefore, the wetland hydrology criterion is not met in these areas.

North Wetland Boundary-Flags 25-27
Wetland conditions are located right along the base of the Point No Point Road fill so the boundary runs along the road (see Attachment #1, Photos 36 and 40 for views of ditch wetland conditions). Flags were not hung in this area because the vegetation along the road is emergent and there is nothing to hang the flags on and they could easily be lost or removed by people before any survey work were to occur. In addition, the boundary is very easily identified in this section because wetland boundary is right along the north side of the roadside ditch. These sections of wetland were surveyed many years ago and because there have been no changes to the wetland or road profile, the previous survey can be used to mark the wetland boundary along Point No Point Road.

North Wetland Boundary-Flags 28-32
This section was delineated because it consists of an old roadway that extends easterly into the wetland from Point No Point Road so currently functions as a narrow upland peninsula. This area was identified as non-wetland during previous delineations conducted in this section of the Point No Point wetland. There are old bollards and a chain-gate at the west end and it ends abruptly about 75 feet from the road (see Attachment #1, Photos 37-39). Data was not collected in this area because the old road conditions did not permit digging a soil hole and because there are clearly wet conditions around this area. See Figure #2b for location of this old roadway area as delineated between Flags 28 and 32, which begin and end at the bollards that mark the west end of this area.

North Wetland Boundary-Flags 33 and 42
This section of wetland was not physically flagged because the boundary is easily identified at the north edge of the roadside ditch. Wetland conditions are contiguous with the ditch and the ditch itself is dominated by native vegetation with water present for a significant duration of the growing season. This area is bisected by Hillview Lane, which provides access to homes from Point No Point Road. It extends to the western extent of the ditch, which is located near the start of the upland area identified between flags 43 and 47. The previous surveys of this section can be used for future mapping purposes because there has been no change to the wetland conditions or road profile.

North Wetland Boundary-Flags 43-47

This section of the wetland boundary was delineated along the south edge of the upland component that lies north of the wetland at the western extent. This upland forest is dominated by red alder with dense blackberry thickets throughout and portions are used by local residents for disposal of yard waste. Short boards lie across narrow low sections from the road to allow use of wheelbarrows to dump yard debris from the homes north of the road. The upland begins at the abrupt end of the roadside ditch, which lies about 35 feet south of Flag 43 as shown on Figure #2b. This section of the delineation is flagged between WB 43 and 47 and is comprised of a freshwater community that is dominated by emergent vegetation, which mostly includes reed canarygrass with dense slough sedge along the edge. Data was collected in this area to verify the boundary and characterize both the wetland and upland. Test Hole #5 is located just inside the wetland boundary and Test Hole #6 is in the upland area. See Attachment #1, Photos 47-54 for visual documentation of the upland and wetland areas at the western extent of this system.

Wetland Data Description

The wetland in this section begins abruptly at the edge of the upland forest and there are many large red alder trees overhanging the wetland boundary. Standing water is present to the edge of the wetland with depths of 6 inches in some locations. The vegetation in this area is dominated by dense slough sedge (*Carex obnupta*) OBL with lower percentages of lady fern (*Athyrium filix-femina*) FAC. Both red alder (*Alnus rubra*) FAC and Himalayan blackberry (*Rubus armeniacus*) FACU overhang the wetland but neither are rooted in the wetland. Because of the depth of standing water, a 16 inch test hole was not dug in the soil but a shovel full of soil was removed to determine its characteristics. A strong sulfidic odor was emitted when the hole was dug indicating that the soil is anaerobic due to the long term presence of standing water and/or soil saturation. The small amount of soil removed has a sandy silt loam texture. The soil profile meets hydric soil indicator A4 due to the sulfidic odor emitted when the hole was dug. Hydrology was present as standing water to depths of 6 inches along the boundary. Water levels are higher during the winter and early spring due to flooding conditions and water likely rises to the level of the upland during heavy rain events that occur in conjunction with high tides.

Upland Data Description

Test Hole #6 is located near the west end of the upland forest where there is less yard waste but the area is dominated by invasive species that are growing beneath native dominated tree and shrub layers. The species dominant in this area include red alder (*A. rubra*) FAC in the tree layer; red elderberry (*Sambucus racemosa*) FACU and Himalayan blackberry (*R. armeniacus*) FACU in the shrub layer and slough sedge (*C. obnupta*) OBL in the herbaceous layer. Lower percentages of horsetail (*Equisetum arvense*) FAC are also present in the herbaceous layer. Despite the dominance by slough sedge, the hydrophytic vegetation criterion is not met because there is less than 50% dominance by FAC and OBL species and the prevalence index is greater than 3.0. The dominance by slough sedge can be attributed to distribution of seed during flood events and by bird deposition. The soil test hole in this area

revealed a three layer profile that consists of a 4 inch duff/silt loam surface layer that has a matrix chroma of 10 YR 2/2, over a coarse sand that has a matrix chroma of 10 YR 2/2 from 4 to 10 inches and a matrix chroma of 10 YR 3/2 below 10 inches. This profile meets none of the hydric soil indicators because it lacks characteristics of hydric sandy soils. Hydrology was not present in this area and there was no evidence of wetland hydrology.

Hydrology

Coastal Lagoon-Hydrologic Conditions

The Point No Point Wetland is a coastal lagoon system that is bounded on two sides by marine waters within Puget Sound. Beach and berm lies to the east with a trail along the interior of the berm and the lighthouse, lightkeepers house and gift shope with parking are located north of the wetland. The wetland outlets via an existing tide gate on the east side that represents the end of the Type F stream system (see Figures 5 and 7). The tide gate allows freshwater to exit the wetland but prevents salt water from entering, however, the east half of the wetland is affected by salt water through subsurface intrusion (beneath the beach berms) and by overspray during high tides. The beach and berms between the wetland and Puget Sound are so wide that overspray appears to occur during winter king tides. It appears that the berms rarely overtop during the higher tides.

Salinity

Salinity readings were taken in several locations of the Point No Point Wetland to roughly determine whether any portion is currently affected by salt water that may enter the wetland through the tide gate or during very high tides. Winter readings indicate that the water in the main ditch was composed of entirely of freshwater was not even slightly saline. Another reading in the winter was taken at the north edge when the wetland was flooded and this reading also indicates the absence of salt within the wetland. Salinity data was collected in the surface waters in late March 2013 with a groundwater salinity data collected in several locations where surface water absent. The results of the salinity readings are shown on Figure #8 and in general, the salinity of the surface waters ranges from 2 ppt to 18 ppt with the waters of the main ditch/Type F stream right around 5 ppt. The high 18 ppt reading was taken from a small ponded area just north of the stream but this reading was not typical of the other ponded areas, which generally have salinity of 2 to 3 ppt.

The salinity data was collected mostly in the vegetation community dominated by salt marsh species but a few were taken near or in areas that appear to be vegetated with freshwater species. This includes an area of cattail near the northeast corner and because the cattail was not actively growing when data was collected, it was difficult to identify whether it is *Typha latifolia*, which is not salt tolerant or *Typha angustifolium* which is salt tolerant. The salinity in this area is 3 ppt with a salinity of 5 ppt at the very northeast corner of the wetland.

Freshwater Inputs

The Point No Point Wetland receives freshwater from the Type F stream as it enters the west end of the system along with freshwater runoff from Point No Point Road and homes that lie west and north of the wetland system (see Figure #9). The freshwater component of this wetland system begins abruptly about 400 feet east of Hillview Lane and is evident in the field as the change from dominant salt tolerant species to freshwater species, which predominantly includes reed canarygrass (*Phalaris arundinacea*). The freshwater component appears to have a permanently flooded hydroperiod due to the continual influence by the year round stream. The freshwater component is divided by Hillview Lane but there is a culvert under the road that at the stream crossing. The water levels on both sides of the road are the same so the road does not represent a break so the wetland on both sides function as part of the same system.

Stream Conditions

The Type F stream originates south of the Point No Point area and flows through a shallow ravine before entering the freshwater component of the Point No Point Wetland system. It eventually forms the main channel and exits the system via the existing tide gate. The stream through the wetland is a low gradient system and is currently a wide, mud bottom channel that conveys water through the system from a series of small channels that fill with water during high tides (see Attachment #1, Photos 1-7 and 22-27). There is always water within the main channel with no flow visible except during tidal fluctuations with water flow in a somewhat backwards during high tides. Outflow is controlled by the tide gate, which remains open during low tides, to allow as much drainage from the wetland as possible.

Flooding

Heavy winter rains in combination with high winter tides cause flooding throughout the Point No Point Wetland with water extending into ditches beyond the western extent of the wetland (see Attachment #1, Photos 12-21). Flooding seems to be somewhat exacerbated by the tide gate, which does not allow regular flow of water from the wetland but because it basically keeps tidal saltwater out of the system during high tides, it helps to control flooding caused by the high tides. Water backs up as the wetland fills and causes flooding along Point No Point Road and at some of the homes north of the road.

Wetland Category

This wetland was categorized to determine future potential mitigation ratios should impacts to the wetland be necessary to accomplish roadside or park activities and to determine the overall function of the wetland for water quality, hydrologic and habitat functions. The Point No Point Wetland was rated using the revised 2004 Washington State Wetlands Rating System for Western Washington (Publication # 04-06-025) as revised in October 2008. This system utilizes hydrogeomorphic characteristics to determine the potential and opportunity for a particular wetland to perform water quality, hydrologic and habitat functions. It differentiates wetlands into four categories ranging from Category I systems that typically have high potential and opportunity to perform these functions to Category IV systems that

have low potential and opportunity to perform the functions. A rating form that asks a series of questions is used to identify the wetland's position in the landscape (sloping, depressional, Riverine, etc.) and its specific characteristics that would indicate the potential to perform the water quality, hydrologic and habitat functions. When the wetland has opportunity to perform the functions, it receives a multiplier of 2. The scores are then added up and a category is assigned based on the number of points received as follows: Category I wetlands score 70 points or greater, Category II systems score between 51-69 points, Category III systems score 30-50 points and Category IV wetlands score less than 30 points. The table below provides an overview of the points that each wetland received for each function, the total number of points and the resulting category.

The Point No Point Wetland system was rated for functions because it is a depressional system but was also rated using the special characteristics section of the rating system because it meets the criteria for a Wetland In Coastal Lagoon (see Attachment #2 for wetland rating form). For functions, this depressional wetland is rated as a Category I because it scores a total of 71 points on the rating form. It scores 11 points for potential to perform water quality functions because it has an intermittently flowing or highly constricted permanently flowing outlet, the soil 2 inches below the surface is clay or organic, there is persistent, ungrazed vegetation over ½ of the wetland area and it is seasonally ponded over ¼ of the wetland (it is flooded during periods of high tide and severe rain events but does not remain for at least 2 months). The wetland has opportunity to perform water quality functions because it unfiltered runoff from development drains into the wetland so it receives the multiplier of 2 and scores 22 points for water quality functions. This depressional wetland scores 12 points for potential to perform hydrologic functions because it has a permanently flowing outlet, marks of ponding are 3 feet or more above the outlet, and the basin is 10 to 100 times the size of the wetland. It has opportunity to perform hydrologic functions even though it is low in the watershed because if the wetland was not present, there would be significant flooding in this area so it receives the multiplier of 2 and scores a total of 24 points for this function.

This wetland system scores 15 points for potential to perform habitat functions because there are three vegetation communities, three hydroperiods, there are greater than 19 plant species in the wetland, it has high interspersion of habitats and there are at least three special habitat features present (downed woody debris, undercut banks and ¼ acre of thin stemmed persistent vegetation in seasonally flooded areas). It has opportunity to perform habitat functions scoring 12 points because there are undisturbed buffers of 330 feet around 50% of the circumference, there is a corridor to habitat areas, there are two priority habitat within 330 feet (nearshore and cliffs) and there are at least 3 other wetlands within ½ mile but the connections are disturbed by roads and residential development. This wetland scores a total of 27 points for habitat functions.

The wetland is in a coastal lagoon and meets the Category I criteria because it lies in a depression adjacent to marine waters and is wholly separated from the marine waters by wide beach berms. The salinity data indicates the wetland has brackish conditions with salinity ranging from 2 to 18 ppt. It is relatively undisturbed at this time in that there is no recent diking, ditching, filling, cultivation and the brackish portion has less than 20% cover by invasive plant species (the area dominated by reed canarygrass is not included in this equation because it lies outside the brackish component of this lagoon system). There is a 100 foot wide buffer of shrub, forest or ungrazed/unmowed grassland around ¾ of the wetland (includes the beach berm to the east and forest to the south) and the wetland is larger than ¼ acre in size.

Wildlife Habitat

This wetland system is surrounded by residential development but provides high quality wildlife habitat because it is adjacent to deepwater marine habitats, so is available to species utilizing both habitat areas. The Point No Point Wetland system seems to be utilized by a variety of species for feeding and resting but because of the lack of significant forest or shrub communities, it is not utilized by as many species for nesting. Species observed during frequent winter and spring visits to the site include many great blue herons, red winged blackbirds, small raptors, ducks (mostly mallards and some widgeons), marsh wren, sparrows, and once, a coyote was observed running across the wetland. No other significant observations were made however, bald eagles are frequently observed flying over the site. Fish species were not observed in any of the channels or areas of standing water around the wetland. Most species were observed in the eastern, saltmarsh portion of this wetland with little use by many species along the edges.

RESTORATION AND FLOOD ATTENUATION POTENTIAL

This report was prepared to document conditions of the existing wetland to determine future restoration and/or flood attenuation potential available within the wetland. The delineation revealed that most of the area is composed of emergent saltmarsh, freshwater emergent and freshwater forested vegetation communities with small areas of upland in some areas. Restoration potential lies primarily in the western half of the system where much of the vegetation is dominated by reed canarygrass and restoration could involve removal of this species to the extent possible and replacement with native plants that could provide increased value for habitat and other wetland functions. This portion appears to be at least semipermanently flooded, which along with the dense reed canarygrass cover, makes it difficult to encourage development of shrub or forested communities judging by the lack of shrub or tree species (some areas have hardstem bulrush and cattail which indicates possible deeper water components). It will be difficult to eliminate reed canarygrass in this area because of its extensive cover and the current hydrologic regime. The saltmarsh community that dominates the eastern half functions as habitat but the lack of direct connection to tidal saltwater reduces its function as salmonid habitat and limits the exchange of nutrients/sediments that is important for estuarine wetland systems.

Currently, there is little potential to improve the hydrologic function of this wetland to facilitate storage of additional water to reduce flooding along Point No Point Road. Removal of the small areas of upland observed during the delineation could aid in the improvement of water storage function but would not result in significant increases in storage potential within the wetland. These areas could also be included in future restoration activities that would both aid in additional wetland habitat and storage functions, which could include removal of fill to allow wetland to establish and/or planting of native trees and shrubs that will screen the wetland from upland activities. The restoration activities could be conducted in conjunction with upland activities that would reduce flooding impacts to the adjacent homes and roadway and could result in increase potential for habitat and flood attenuation.

Future plans include replacement of the poorly functioning tide gate with a newer tide gate that could potentially improve the nutrient/sediment exchange between the wetland and tidal saltwater. It could also improve the flood attenuation function of the wetland by allowing outflow of water during high tides rather than backing water up during the high tide and heavy rain events. Analysis of the potential effects of tide gate replacement or removal will be undertaken by wildlife agencies, tribal entities and the county to determine the best option for the Point No Point Wetland system and additional decisions can be made at that time concerning restoration and flood attenuation potential.

LIMITATIONS

This report has been prepared for Kitsap County Department of Public Works, Surface and Storm Water Management Division. It is important to acknowledge that definition of plant community boundaries is not an exact science. Different agencies and individuals may often disagree on exact boundaries and/or plant community classifications. It is the responsibility of the various resource agencies that regulate development activities in wetlands to make the final determination of wetland boundaries. Therefore, the information presented in this report should be reviewed by the appropriate regulatory agencies prior to detailed site planning and/or construction activities.

Given the constraints of schedules and scope of work, Wiltermood Associates, Inc. warrants that the work performed is in accordance with the technical guidelines and criteria in effect at the time this report was prepared. The results and recommendations of this report represent professional opinion based upon the information provided by the client, the client's consultants, and that gathered through the course of this wetland study. No other warranty, expressed or implied, is made.

Signed

Joanne Bartlett

Joanne Bartlett, PWS
Wetland Biologist

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FIGURE #1

NORTH

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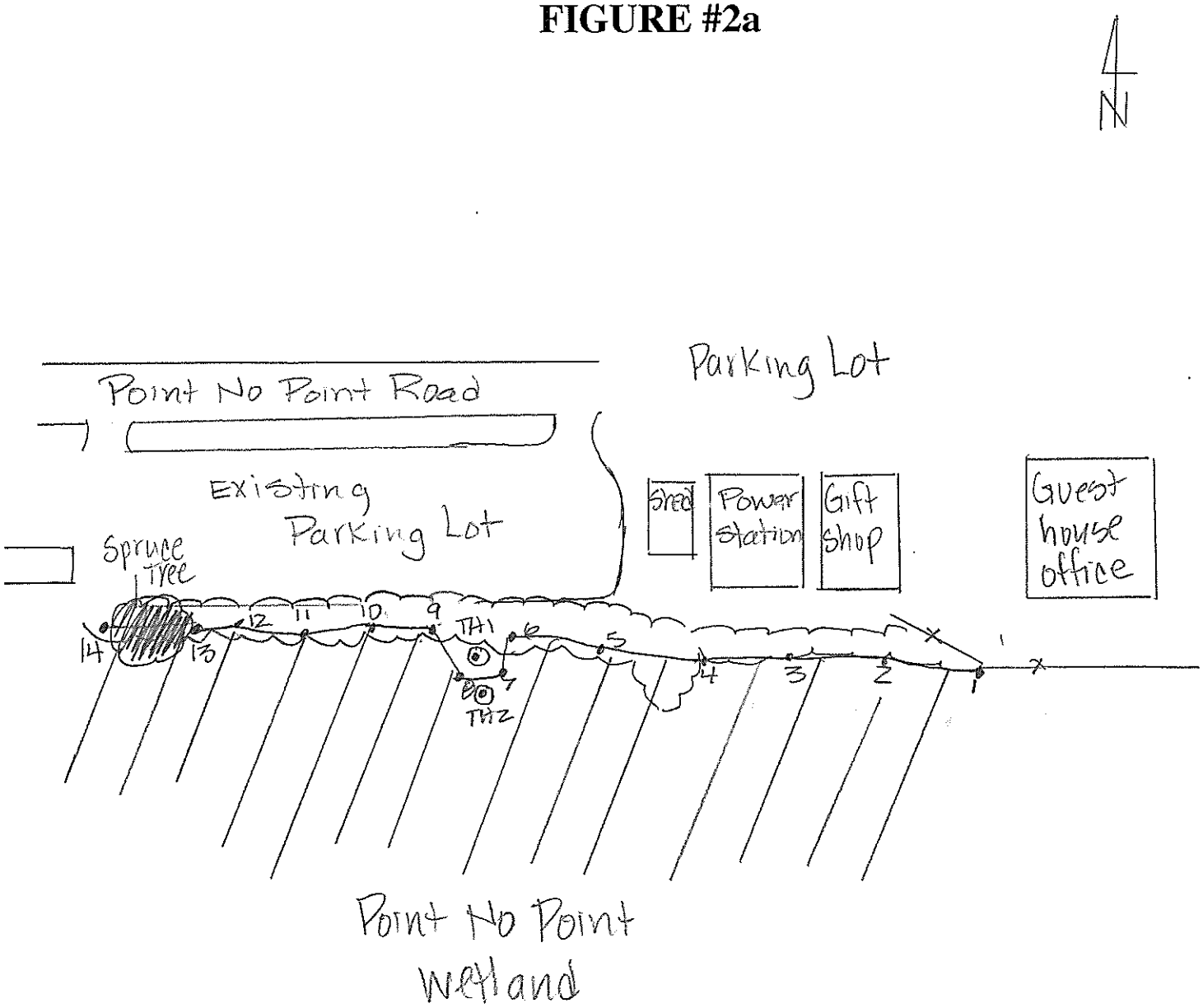
FIGURE #2a



Rough Drawing
Not To Scale
Not A Survey

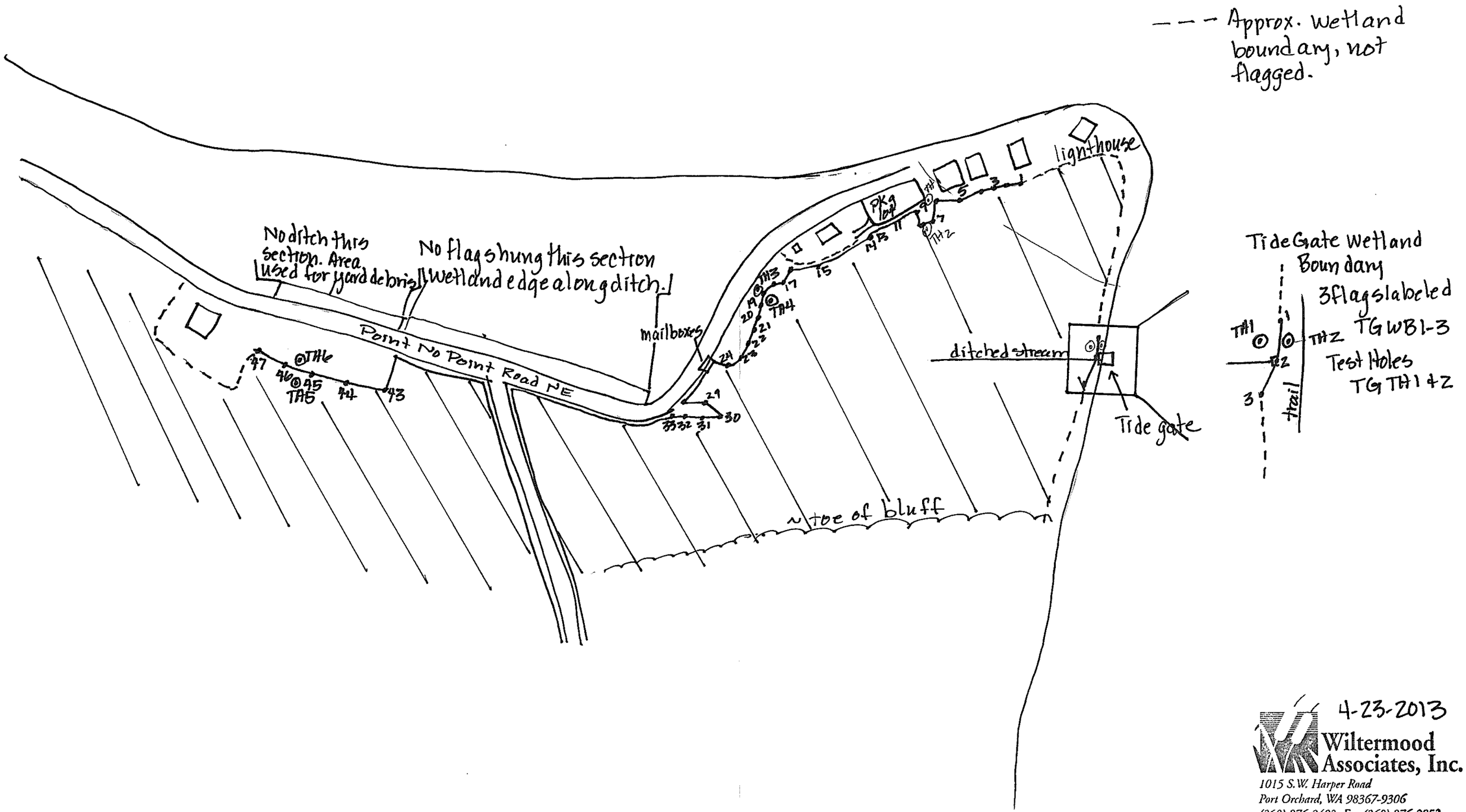
14 WB flags
labeled
WBA-1 to WBA-14

Blackberry thicket

3-19-2013

Wiltermood Associates, In
1015 S.W. Harper Road
Port Orchard, WA 98367-9306
(360) 876-2403 Fax (360) 876-2053

Figure #2b



4-23-2013

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Soil Map—Kitsap County Area, Washington

FIGURE #3

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,430 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kitsap County Area, Washington
Survey Area Data: Version 7, Jul 2, 2012

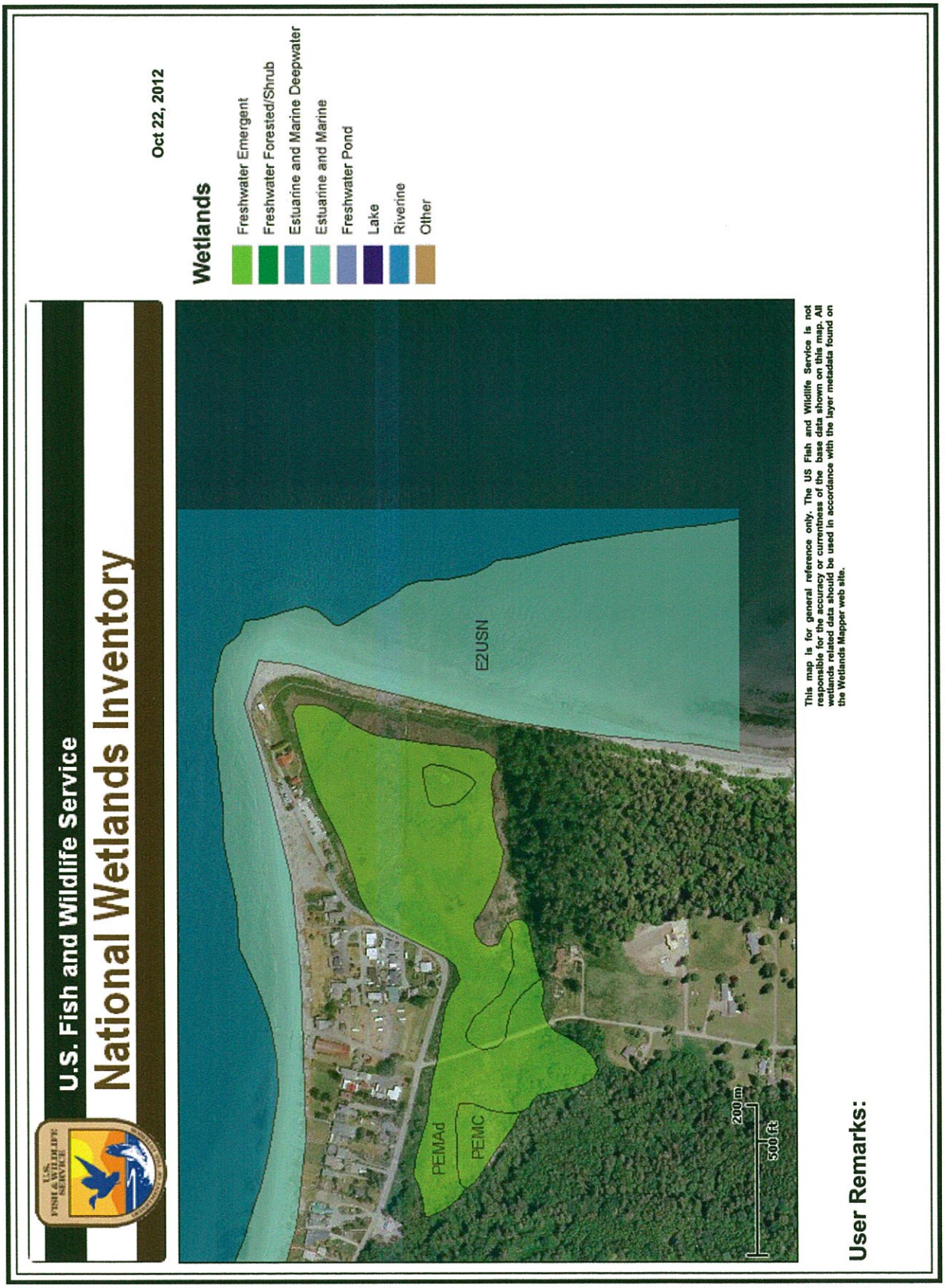
Date(s) aerial images were photographed: 7/21/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Kitsap County Area, Washington (WA635)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
4	Beaches	30.3	17.1%
10	Dystric Xerorthents, 45 to 70 percent slopes	25.2	14.2%
23	Kapowsin gravelly loam, 6 to 15 percent slopes	0.9	0.5%
35	Neilton gravelly loamy sand, 3 to 15 percent slopes	11.3	6.4%
39	Poulsbo gravelly sandy loam, 0 to 6 percent slopes	7.9	4.4%
40	Poulsbo gravelly sandy loam, 6 to 15 percent slopes	7.2	4.1%
45	Ragnar fine sandy loam, 6 to 15 percent slopes	11.1	6.3%
46	Ragnar fine sandy loam, 15 to 30 percent slopes	4.7	2.7%
61	Sinclair very gravelly sandy loam, 15 to 30 percent slopes	8.0	4.5%
62	Tacoma silt loam	30.3	17.1%
Subtotals for Soil Survey Area		**136.9**	**77.3%**
Totals for Area of Interest		**177.0**	**100.0%**

FIGURE #4


U.S. Fish and Wildlife Service
National Wetlands Inventory
Oct 22, 2012
Wetlands
Freshwater Emergent
Freshwater Forested/Shrub
Estuarine and Marine Deepwater
Estuarine and Marine
Freshwater Pond
Lake
Riverine
Other
E2USN
PEMAd
PEMC
200 m
500 ft
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
User Remarks:

FOREST PRACTICE ACTIVITY MAP

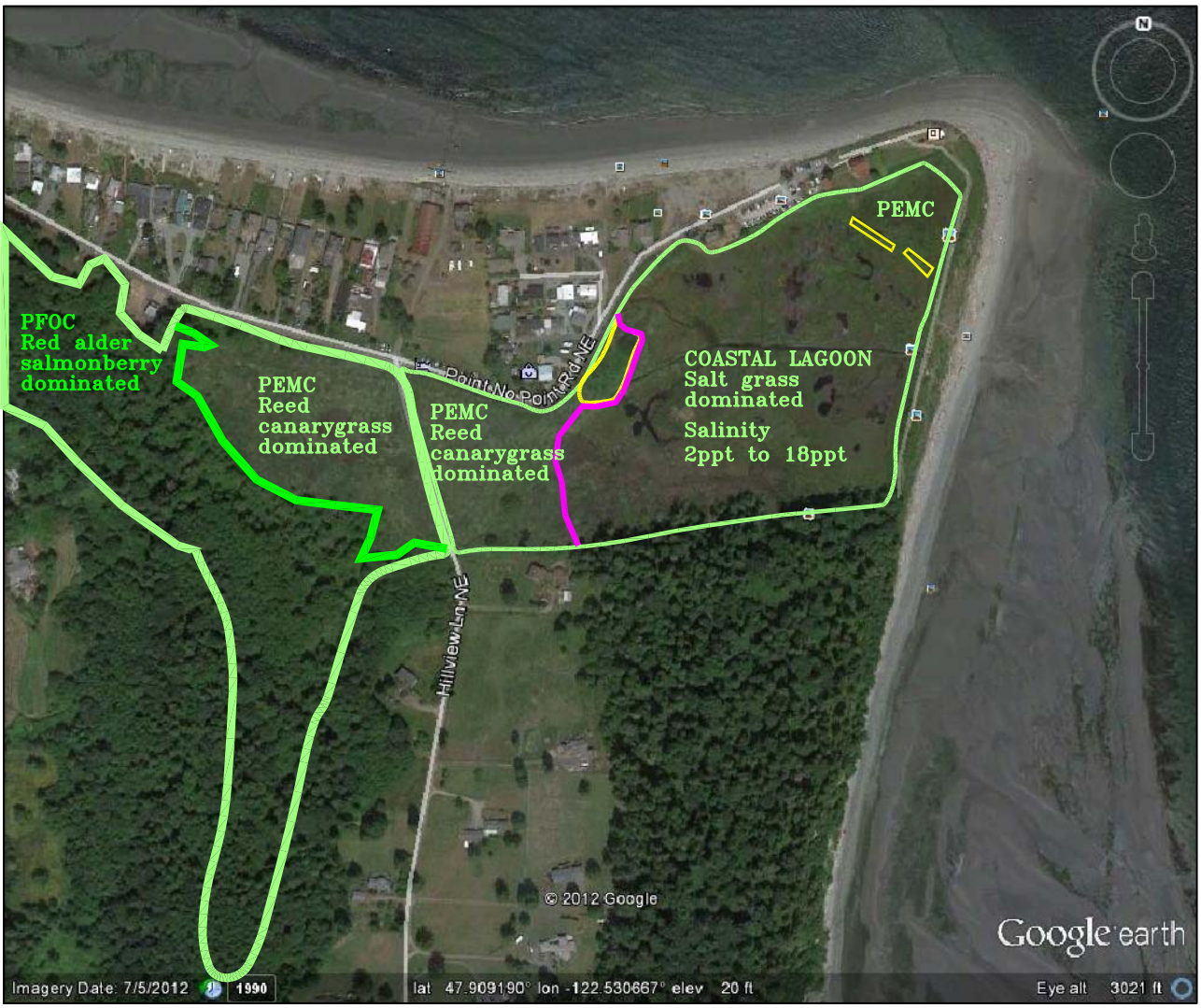
TOWNSHIP 28 NORTH HALF 0, RANGE 2 EAST (W.M.) HALF 0, SECTION 15

Application #: **FIGURE #5**

Please use the legend from the FPA Instruction or provide a list of symbols used.

Thursday, March 14, 2013 10:58:38 AM
NAD 83
Contour Interval: 40 Feet

FIGURE #6



~ WETLAND BOUNDARY

Coastal Lagoon–Brackish Emergent, Saturated/Permanently Flooded

Palustrine, Emergent & Forested, Saturated/Semipermanently Flooded

EXISTING DIRT ROADS

~ WEST LIMITS OF BRACKISH/COASTAL LAGOON COMMUNITY

~ SCRUB/SHRUB AREAS

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FIGURE #7

~ 16' EXTENSION TO EXISTING PIPE

~ WETLAND BOUNDARY

Coastal lagoon/Rated as Depressional
Forested, Scrub/Shrub and Emergent

~ Scrub/Shrub Community Limits

~ Scrub/Shrub Community Limits

~ Historic Tidal Channels?

~ Main Channel to Tide Gate

EXISTING CONCRETE VAULT HOUSING TIDE GATE

EXISTING PIPE AND TIDE GATE

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FIGURE #8

NORTH

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FIGURE #9

~ WETLAND BOUNDARY
Entire Wetland is Forested w/saturated soil regime
Separated from wetlands to south by driveway w/culvert

~ MAPPED TYPE F STREAM

~ NON-STREAM FRESHWATER INPUTS (Residential along Point No Point Road to north and west)

~ TRANSITION FROM SALTWATER TO FRESHWATER

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ATTACHMENT #1
POINT NO POINT
WETLAND PHOTOS

These photos were taken during the November 15, 2012 site visit to document conditions at low tide. Photo #1 looks west from the tide gate vault (pictured in Photo #3) and shows the ditch through the Point No Point Wetland that conveys water to the tide gate and pipe. Photo #2 shows the end of the ditch where water enters the pipe through the tide gate.

Photo #1

Photo #2

Photo #3

POINT NO POINT
WETLAND PHOTOS

These photos were taken of the ditch near the middle of the Point No Point Wetland during the November 15, 2012 site visit and picture the ditches in the wetland about ½ hour prior to the low tide at 11:31 am. Photos 4 and 5 show the main ditch leading to the tide gate outlet, which runs west (Photo #5) to east (Photo #4) through the wetland. The ditch in Photos 6 and 7 is a north south ditch that intersects with the main ditch-Photo #6 looks north from the intersection and Photo #7 looks south from the interior of the wetland. Both areas retain water year round as indicated in the Google Earth satellite photos.

Photo #4

Photo #5

Photo #6

Photo #7

POINT NO POINT
WETLAND PHOTOS

These photos are taken from the north end of the Point No Point Wetland and look from southeast (Photo #8) to southwest (Photo #11) to show the extent of the wetland system. The wetland is primarily emergent with regularly flooded and permanently flooded regimes present. The vegetation in these photos is primarily dominated by salt grass (*Distichlis spicata*) with areas of Pacific silverweed (*Argentina anserina*) and American threesquare (*Schoenoplectus maritimus*) also present alongside the small ponded areas and perimeter of the wetland. Areas of cattail are also present as visible in Photos 10 and 11 and this area of cattails is growing north of the old fence in the northeastern section of the wetland. The salinity in the northeast corner is 3 to 5 ppt.

Photo #8

Photo #9

Photo #10

Photo #11

POINT NO POINT
WETLAND PHOTOS

These photos are taken from the north edge of the wetland on November 27, 2012 about ½ hour before the high tide at 3:01 pm. The wetland was completely flooded prior to the high tide and the main ditch could not be accessed but was clearly under at least 3 feet of water at that time. The area sampled at NWB Test Hole #1 is to the right of the area shown in Photo #12 and NWB Test Hole #2 was conducted at the edge of the reed canarygrass visible across the left half of Photo #12.

Photo #12

Photo #13

Photo #14

Photo #15

POINT NO POINT
WETLAND PHOTOS

These photos are taken during a combination high tide and high surface water runoff that commonly occurs after a heavy rain event. They are located just east of the wetland with Photo #16 taken from the beach berm where it crosses the tide gate vault and Photo #17 is taken looking down at where water enters the upstream end of the culvert that leads to the tide gate. Photos 18-20 are taken from the constructed viewing platform along the eastern trail and looks from southwest to northwest across the flooded Point No Point Wetland.

Photo #16

Photo #17

Photo #18

Photo #19

Photo #20

Photo #21

POINT NO POINT
WETLAND PHOTOS

These photos provide additional views of the wetland and main stream channel through the wetland during low tides as taken during collection of salinity data on March 25, 2013. Photo #22 shows the main stream channel through the Point No Point Wetland that leads to the tide gate and out to marine waters. Photo #23 shows one of the historic tidal channels that currently functions to convey water to and from the north half of the wetland. Photos 24-27 show the historic channels at the west end that currently convey storm water from homes along Point No Point Road. Salinity data was collected in the channel in Photo #26, which is at 2 ppt, and this ditch leads to the hardstem bulrush community in Photos 24 and 25.

Photo #22

Photo #23

Photo #24

Photo #25

Photo #26

Photo #27

POINT NO POINT
WETLAND PHOTOS

These photos document the delineation conducted along the wetland boundary at the tide gate. Photo #28 looks easterly toward the beach berm from within the wetland to document the areas sampled at TG (Tide Gate) Test Hole #1 and #2, which are in the foreground and background respectively. The trail that runs along the top of the beach berm is across the background of this photo. Photo #29 looks northeasterly toward TG WB 1, which was hung on the shrub clump visible in the left half. Photos 30 and 31 look southeasterly and southerly, respectively, to document current wetland conditions in this section of the delineation with TG WB flag 2 on the shrub cover in the upper middle. Tide Gate WB flag 3 is beyond the shrubs visible in the left side of Photo #31 so is not visible from this vantage point.

Photo #28

Photo #29

Photo #30

Photo #31

POINT NO POINT
WETLAND PHOTOS

These photos document portions of the north wetland boundary NWB delineated between the lighthouse keepers house and Point No Point Road. Photos 32 and 33 show the wetland boundary where it was delineated just south of the parking lot. The delineation was conducted around a the raised area dominated by reed canarygrass that is visible across both photos with delineation markers visible in the blackberry on the right half of Photo #33 and in the reed canarygrass in the right half of Photo #32. Photos 34 and 35 show the areas sampled at Test Holes 3 and 4, which are located west of the small home that lies just outside and west of the park property. Photo #34 looks north from the wetland boundary back toward the area upland sampled at Test Hole #3, which is dominated by reed canary grass, while Photo #35 looks south into the wetland community sampled at Test Hole #4. The upland sampled at Test Hole #3 is typical of upland conditions observed around the delineated wetland where historic activities appear to have created upland communities dominated by invasive plant species.

Photo #32

Photo #33

Photo #34

Photo #35

POINT NO POINT
WETLAND PHOTOS

These photos are taken of the emergent component of the Point No Point Wetland from Point No Point Road where it curves north toward the lighthouse. They basically show the area east of Hillview Lane, which is dominated by reed canarygrass with patches of cattail. The wetland boundary follows the road side ditch as documented in Photos 36 and 40 with an old road that extends into the wetland documented in Photo #37. Photos 38 and 39 look south into the reed canarygrass dominated wetland that occupies the western extent of the Point No Point system.

Photo #36

Photo #37

Photo #38

Photo #39

Photo #40

POINT NO POINT
WETLAND PHOTOS

These photos are included to document the reed canarygrass wetland that dominates the western half of the Point No Point Wetland system as viewed from Hillview Lane, which cuts across this portion of the wetland. Photos 41-44 show the reed canarygrass dominated area west of Hillview Lane. Photos 45 and 46 show the two sides of the culvert that provides drainage across the road.

Photo #41

Photo #42

Photo #43

Photo #44

Photo #45

Photo #46

POINT NO POINT
WETLAND PHOTOS

These photos look from southeasterly (Photo #47) to westerly (Photo #50) to document the wetland area at the western extent of the Point No Point Wetland system. This area has dense cover of slough sedge beneath a mostly overhanging forest canopy and extends to the very west end of this system.

Photo #47

Photo #48

Photo #49

Photo #50

POINT NO POINT
WETLAND PHOTOS

These photos are taken from the upland area that lies between Point No Point Road and the wetland boundary at the west end of the wetland system. The area closer to the road is used to dispose of yard waste by residents north of Point No Point Road with at least 5 bridges composed of boards that allow for easy wheelbarrow access from the road. This area is mostly dense blackberry thickets that have been cut back in some areas to allow access and dumping of yard waste.

Photo #51

Photo #52

Photo #53

Photo #54

ATTACHMENT #2-TG TH #1

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 4-23-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: TG TH #1

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): coastal lagoon Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.910485 Long: -122.526967 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam NWI classification: Coastal lagoon

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Three flags were hung within 50 feet north and south of the tide gate and main ditch of the Point No Point wetland. Emergent wetland area north of the ditch and tide gate

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 30')			
1. Distichlis spicata	85%	Yes	FACW
2. Argentina anserina	25%	Yes	OBL
3. Schedonorus phoenix	15%	No	FAC
4. Rumex cripsus	5%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Emergent vegetation dominates the wetland and data indicates greater than 50% dominance by OBL species.

SOIL

Sampling Point: TG TH #1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10 YR 2/2	100%					peat	
8-16"	10 YR 2/1	100%					coarse sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soil profile consists of dark matrix color with peat in the surface layer but does not meet the histosol or histic epipedon criteria. Strong sulfidic odor emitted as the hole was dug so profile meets hydric soil indicator A4.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☒ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: observation of inundation during high tides.

Remarks: Hydrology not present in the hole but soil is damp and there are water lines to indicate high water levels during early growing season and after heavy rain events. Observation of flooded conditions earlier in the growing season and during winter months.

ATTACHMENT #2-TG TH #2

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 4-23-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: TG TH #2

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): beach berm Local relief (concave, convex, none): convex Slope (%): 0

Subregion (LRR): LRR A Lat: 47.910486 Long: -122.526888 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam 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 ☐

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 ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Beach berm forms east edge of the wetland and Test Hole #2 is on the berm where the vegetation is dominated by grasses including low growing and beach grass.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 30')			
1. Poa pratensis	75%	Yes	FAC
2. Ammophila arenaria	25%	Yes	FACU
3. Daucus carota	15%	No	FACU
4. Vicia sativa	15%	No	UPL
5. Argentina anserina	10%	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	140% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	10%	x 1 = 10
FACW species		x 2 =
FAC species	75%	x 3 = 225
FACU species	40%	x 4 = 160
UPL species	15%	x 5 = 75
Column Totals:	140% (A)	470 (B)

Prevalence Index = B/A = 3.36

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: Less than 50% dominance by FAC and OBL species and prevalence index greater than 3.0 so hydrophytic vegetation criterion not met.

SOIL

Sampling Point: TG TH #2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10 YR 2/1	100%					coarse sand	
8-16"	10 YR 3/2	100%					coarse sand	no redox visible

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soil profile composed entirely of coarse beach sand that has low matrix chromas but meets none of the hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: Area sampled is about 1 foot above wetland boundary so there is no hydrology present and no evidence of flooding at this elevation. Flooding likely extends into the sample area during winter rain events that coincide with king tides.

ATTACHMENT #2-NWB TH #1

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 3-19-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: NWB TH #1

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.911514 Long: -122.528567 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam 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 ☐

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 ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Test Hole #1 is located at the north edge of the low upland area that forms north of the coastal lagoon and just south of the parking lot. This area is slightly raised above the wetland and may have been formed during historic work around the lighthouse.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	20%	Yes	FACU
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 30')			
1. Phalaris arundinacea	90%	Yes	FACW
2. Urtica diocia	20%	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: The dominance test is positive due to the dominance by FACW species.

SOIL

Sampling Point: NWB TH #1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10 YR 2/2	100%					medium sa	with sandy silt loam component

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☒

Remarks: This medium sand profile meets none of the hydric soil indicators due to lack of redoximorphic features.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: Hydrology was not present during the field visit and there is no evidence of wetland hydrology. This area may be flooded during high tides that coincide with heavy rain events but during frequent winter visits to the site, the wetland was flooded to the edge of this area but it was not flooded itself. It likely was saturated during these events but saturation does not appear to occur for a significant duration of the growing season.

ATTACHMENT #2-NWB TH #2

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 3-19-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: NWB TH #2

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.911514 Long: -122.528567 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam 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 ☐

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 ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Test Hole #2 is located just south of the raised upland area sampled at Test Hole #1. Dominant wetland vegetation occurs to the edge of the upland area with salt marsh species dominant in the wetland area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10')			
1. Distichlis spicata	50%	Yes	FACW
2. Argentina anserina	25%	Yes	OBL
3. Schoenoplectus maritimus	15%	No	OBL
4. Phalaris arundinacea	10%	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: The dominance test is positive due to the dominance by FACW and OBL species.

SOIL

Sampling Point: NWB TH #2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10 YR 2/1	100%					medium sa	
12-16"	10 YR 3/2	100%					peat	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soil is saturated for much of the year so a strong sulfidic odor was emitted indicating the presence of reducing conditions.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 11"

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

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: Hydrology present as soil saturation with a shallow water table. Flooding was observed in this area during the early growing season and drift deposits on the dominance vegetation indicate flooded conditions as well.

ATTACHMENT #2-NWB TH #3

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 4-23-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: NWB TH #3

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): coastal lagoon Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.911060 Long: -122.530116 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam 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 ☐

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 ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Test Hole #3 is located in the upland north of the wetland area west of the small house and parking lot. This upland area appears to have been created by historic activities as the soil is composed of very gravelly soil with a small amount of sand with dominant invasive vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	20%	Yes	FACU
2.			
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 30')			
1. Phalaris arundinacea	100%	Yes	FACW
2. Rubus ursinus	25%	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	100%	x 2 = 200
FAC species	45%	x 3 = 135
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	145% (A)	335 (B)

Prevalence Index = B/A = 2.31

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Even though reed canarygrass dominates, dominance test revealed less than 50% dominance by FACW species but leads to a prevalence index of less than 3.0 because the cover by FACU species is significantly lower than the FACW coverage.

SOIL

Sampling Point: NWB TH #3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10 YR 2/2	100%					gravel	small amount of sand present

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Soil profile composed entirely of gravel with small amount of sand that has low matrix chroma but meets none of the hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: observation of inundation during high tides.

Remarks: Area sampled is about 1 foot above wetland boundary so there is no hydrology present and no evidence of flooding at this elevation. Flooding likely extends into the sample area during winter rain events that coincide with king tides.

ATTACHMENT #2-NWB TH #4

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 4-23-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: NWB TH #4

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): coastal lagoon Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.911027 Long: -122.530063 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam NWI classification: coastal lagoon

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Test Hole #4 located near north edge of wetland where the vegetation transitions from reed canarygrass dominant to saltmarsh dominated area dominated by baltic rush and common silverweed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 30')			
1. Phalaris arundinacea	50%	Yes	FACW
2. Juncus gerardii	25%	Yes	FACW
3. Argentina anserina	25%	Yes	OBL
4. Distichlis spicata	15%	No	FACW
5. Rubus ursinus	5%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	120%	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = 135
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Dominant by FACW and OBL plants so rapid test for hydrophytic vegetation is positive with 100% dominance by these same species.

SOIL

Sampling Point: NWB TH #4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6"	10 YR 2/1	100%					peat	small amount of sand present
6-16"	10 YR 4/1	100%					clay loam	no visible redox

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Profile meets criteria for hydric soil indicator A11 due to low depleted matrix below a dark organic surface layer. Does not meet criteria for histosol or histic epipedon because peat layer is only 6 inches thick.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (inches): _____
Water Table Present?	Yes ☒	No ☐	Depth (inches): 10"
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (inches): surface

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: observation of inundation during high tides.

Remarks: Hydrology present as soil saturation and shallow water table with evidence of standing water also present.

ATTACHMENT #2-NWB TH #5

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 4-23-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: NWB TH #5

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.910392 Long: -122.535746 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam NWI classification: PEMF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Test Hole #5 located near the north edge of the western half of the Point No Point wetland that lies south of the upland area currently used by the neighborhood for disposal of yard waste. Trees rooted at edge of the wetland but it is emergent in this area standing water to edge of the upland so no soil data collected.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	20%	Yes	FAC
2.			
3.			
4.			
	20%	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	35%	Yes	FACU
2.			
3.			
4.			
5.			
	35%	= Total Cover	
Herb Stratum (Plot size: 30')			
1. Carex obnupta	75%	Yes	OBL
2. Athyrium filix-femina	5%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80%	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 20%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Dominated by FACW and OBL plants so rapid test for hydrophytic vegetation is positive with 67% dominance by these same species.

SOIL

Sampling Point: NWB TH #5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16"	No color						sa silt loam	strong sulfidic odor emitted from hole

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Soil profile not examined due to standing water but when shovel stuck into the soil, strong sulfidic odor emitted so the profile meets hydric soil indicator A4.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 3"

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

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

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: Hydrology present as inundation to a depth of 3 inches. Water was observed deeper during earlier visits to this area.

ATTACHMENT #2-NWB TH #6

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

Project/Site: Point No Point Wetland City/County: Hansville, Kitsap Sampling Date: 4-23-2013

Applicant/Owner: Kitsap County State: WA Sampling Point: NWB TH #6

Investigator(s): J. Bartlett Section, Township, Range: S 22 T 28 N R 2 EWM

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR A Lat: 47.910453 Long: -122.535706 Datum: Google

Soil Map Unit Name: 62 Tacoma silt loam 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 ☐

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 ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Test Hole #6 located just north of Test Hole #5 in portion of the upland that is not currently used for yard waste disposal. This area is forested with a dense understory of blackberry and occasional native shrub cover.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	15%	Yes	FAC
2.			
3.			
4.			
	15%	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	50%	Yes	FACU
2. Sambucus racemosa	35%	Yes	FACU
3.			
4.			
5.			
	85%	= Total Cover	
Herb Stratum (Plot size: 30')			
1. Carex obnupta	35%	Yes	OBL
2. Equisetum arvense	10%	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45%	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 55%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	35%	x 1 = 35
FACW species		x 2 =
FAC species	25%	x 3 = 75
FACU species	85%	x 4 = 340
UPL species		x 5 =
Column Totals:	145 (A)	450 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: There is less than 50% dominance by OBL and FAC species so neither the dominance test nor the prevalence index indicates the dominance by FAC and OBL species.

SOIL

Sampling Point: NWB TH #6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4"	10 YR 2/2	100%					duff/si lo	
4-10"	10 YR 2/2	100%					coarse sa	
10-16"	10 YR 3/2	100%					coarse sa	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes ☐ No ☒

Remarks: This profile is composed mostly of coarse sand that meets none of the hydric soil indicators because there are no redoximorphic features visible in the low matrix chroma sand.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: Hydrology not present and there is no evidence of wetland hydrology.

ATTACHMENT #3

Wetland name or number _____

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

Name of wetland (if known): Point No Point Date of site visit: 3-19-2013

Rated by J. Barthett Trained by Ecology? Yes X No___ Date of training 4-2012

SEC: 22 TWNSHP: 28N RNGE: 2E Is S/T/R in Appendix D? Yes X No___

Map of wetland unit: Figure #6 Estimated size 25 acres

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I X II___ III___ IV___

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

Score for Water Quality Functions	22
Score for Hydrologic Functions	24
Score for Habitat Functions	25
TOTAL score for Functions	71

Category based on SPECIAL CHARACTERISTICS of wetland

I X II___ Does not Apply___

Final Category (choose the "highest" category from above) I

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		**Depressional**	X
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	
Mature Forest		**Slope**	X
Old Growth Forest		**Flats**	
Coastal Lagoon	X	**Freshwater Tidal**	
Interdunal			
None of the above		Check if unit has multiple HGM classes present	X

Wetland name or number _____

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

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

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

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

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

Wetland name or number _____

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
NO – go to 2 **YES** – the wetland class is **Tidal Fringe**

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

If your wetland can be classified as a Freshwater Tidal Fringe use the forms for ***Riverine*** *wetlands. If it is Saltwater Tidal Fringe it is rated as an* ***Estuarine*** *wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO – go to 3 **YES** – The wetland class is **Flats**

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

3. Does the entire wetland unit **meet both** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m)?
NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?
_X_ The wetland is on a slope (*slope can be very gradual*),
_X_ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
____The water leaves the wetland **without being impounded**?
NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*
NO – go to 5 **YES** – The wetland class is **Slope**

5. Does the entire wetland unit **meet all** of the following criteria?

____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

____ The overbank flooding occurs at least once every two years.

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

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

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

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

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

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

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

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

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

Wetland name or number _____

D	**Depressional and Flats Wetlands** **WATER QUALITY FUNCTIONS** - Indicators that the wetland unit functions to improve water quality	**Points** (only 1 score per box)
D	**D 1. Does the wetland unit have the potential to improve water quality?**	*(see p.38)*
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing"*) Provide photo or drawing	Figure ~~#~~ 7 2
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES points = 4 NO points = 0	4
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ~~#~~ 6 3
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0 Map of Hydroperiods	Figure ~~#~~ 6 ~~#~~ 7 2
D	**Total for D 1** *Add the points in the boxes above*	11
D	**D 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft X Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other _____ YES multiplier is 2 NO multiplier is 1	*(see p. 44)* multiplier 2
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	22

Wetland name or number _____

D	**Depressional and Flats Wetlands** HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	*(see p.46)*
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* Unit has an unconstricted, or slightly constricted, surface outlet *(permanently flowing)* points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	7
D	D 3.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	12
D	**D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following indicators of opportunity apply.* — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems X Other helps to alleviate more significant flooding of road + development **YES** multiplier is **2** **NO** multiplier is **1**	*(see p. 49)* multiplier 2
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	24

Wetland name or number _____

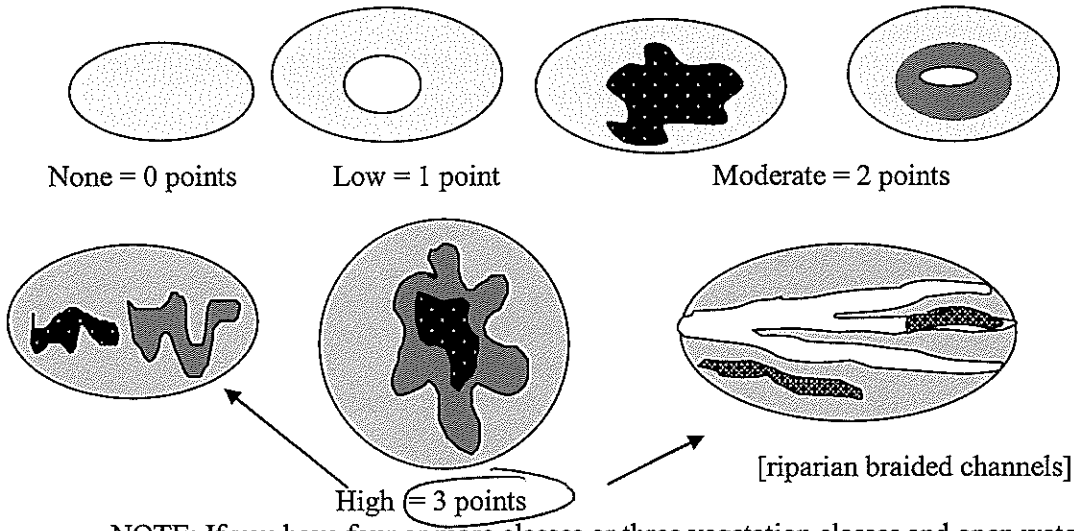
These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Vegetation structure *(see p. 72)* *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.* ____Aquatic bed _X_Emergent plants _X_Scrub/shrub (areas where shrubs have >30% cover) _X_Forested (areas where trees have >30% cover) *If the unit has a forested class check if:* _X_The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon *Add the number of vegetation structures that qualify. If you have:* 4 structures or more — points = 4 3 structures — points = 2 2 structures — points = 1 1 structure — points = 0 Map of Cowardin vegetation classes	Figure #6 4
H 1.2. Hydroperiods *(see p. 73)* *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* _X_Permanently flooded or inundated — 4 or more types present — points = 3 ____Seasonally flooded or inundated — 3 types present — points = 2 ____Occasionally flooded or inundated — 2 types present — point = 1 _X_Saturated only — 1 type present — points = 0 _X_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** Map of hydroperiods	Figure #6 3
H 1.3. Richness of Plant Species *(see p. 75)* Count the number of plant species in the wetland that cover at least 10 ft^2. *(different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0 *List species below if you want to:*	2

Total for page 9

Wetland name or number _____

H 1.4. Interspersion of habitats *(see p. 76)* — Figure #10

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



NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

3

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

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

X Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

____ Standing snags (diameter at the bottom > 4 inches) in the wetland

X Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

X At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

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

3

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

15

Comments

Wetland name or number _____

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5** — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** — Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	Figure #6 4
H 2.2 Corridors and Connections *(see p. 81)* H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*). YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? YES = **2 points** (*go to H 2.3*) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = **1 point** NO = **0 points**	2

Total for page 6

Wetland name or number _____

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.* ____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre). ____**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*). ____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock. ____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. ____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*). ____**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*). ____**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. _X_ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).* ____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. _X_ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has **3 or more** priority habitats = **4 points** If wetland has **2** priority habitats = **3 points** If wetland has **1** priority habitat = **1 point** No habitats = 0 points *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	3

Wetland name or number _____

H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 84)*** There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat *Add the scores from H2.1,H2.2, H2.3, H2.4*	12
TOTAL for H 1 from page 14	15
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	27

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	**Category**
SC 1.0 Estuarine wetlands *(see p. 86)* Does the wetland unit meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ___	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

SC 2.0 Natural Heritage Wetlands *(see p. 87)* Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___ YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO _X_ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO _X_ not a Heritage Wetland	**Cat. I** Natural Heritage Plan 2011 Wetland Search TRS- 8-24-12
SC 3.0 Bogs *(see p. 87)* Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2 2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 No - Is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. *1.* Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* 2. YES = Category I No___ Is not a bog for purpose of rating	**Cat. I**

SC 4.0 Forested Wetlands *(see p. 90)* Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.* — **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. — **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. YES = Category I NO ___not a forested wetland with special characteristics	**Cat. I**
SC 5.0 Wetlands in Coastal Lagoons *(see p. 91)* Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? X 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 X The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* YES = Go to SC 5.1 NO___ not a wetland in a coastal lagoon SC 5.1 Does the wetland meets all of the following three conditions? X The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). X 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. X The wetland is larger than 1/10 acre (4350 square feet) YES = Category I NO = Category II	**Cat. I** **Cat. II**

Lagoon designation ended @ Hill view Lane, west of which is 100% freshwater.

No current or ongoing ditching & no cultivation or grazing old ditches remain in place-

SC 6.0 Interdunal Wetlands *(see p. 93)* Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO __ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula- lands west of SR 103 • Grayland-Westport- lands west of SR 105 • Ocean Shores-Copalis- lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2 SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	**Cat. II** **Cat. III**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered NO for all types enter "Not Applicable" on p.1	

ATTACHMENT #4: WETLAND DETERMINATION/DELINEATION METHODOLOGY

The definition for wetland established by the U.S. Army Corps of Engineers (COE) was used to determine the presence and extent of wetlands on this parcel. Section 404 of the Clean Water Act (1972) states that wetlands are:

> "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

This criteria is based on the Department of Ecology Washington State Wetland Identification and Delineation Manual, the 1987 Corps of Engineers (COE) Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region. These manuals are prepared to establish technical procedures and guidelines for wetland determination and delineation. These guidelines as set forth in these delineation manuals requires that three technical criterion: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology must all be met for an area under normal circumstances to be identified as wetland. A general summary of these criterion or parameters as defined within the COE and Department of Ecology manuals include:

> Hydrophytic Vegetation Criterion: This criterion is met when, under normal circumstances 50 percent or more of the composition of the dominant species from all strata are obligate wetland (OBL), facultative wetland (FACW), and/or facultative (FAC).
>
> Hydric Soil Criterion: This criterion is met for any area having soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (USDA Natural Resources Conservation Service, 2010).
>
> Wetland Hydrology Criterion: This criterion is met for any area having permanent or periodic inundation, or soil saturation to the surface, at least seasonally.

These three criterion are the basis for all field work and wetland delineation performed on this parcel. The specific methodology used is outlined in the next section.

WETLAND DELINEATION METHODOLOGY

The wetland delineation followed the Routine On-site and Intermediate Determination Methods as outlined in each manual. A summary of this method includes:

> **Plant Community Assessment.** The entire project site was initially walked to identify the plant community types present. This provided a rough picture of the type and extent of wetland(s) which exist on site. Also observed and noted were topographical features, hydrologic flow patterns, and any significantly disturbed areas. It was then determined whether normal environmental conditions were present, or human modifications had occurred to the wetland.
> **Selection of Sample Area(s).** A series of sample areas or points is selected and flagged to best characterize the plant communities of suspected wetland and non-wetland areas. The

approximate location of these flagged sample points are noted on a map of the project site for subsequent survey.

Characterization of Plant Communities. At each sample point the dominant plant species within the tree, shrub, and herb stratum were identified and noted on a data form. Species were identified and noted according to Flora of the Pacific Northwest (Hitchcock & Cronquist, 1973) and handbooks for native plants in the Pacific Northwest. The estimated percent areal cover and the indicator status (as listed in the National List of Plant Species that Occur in Wetlands: 1993, Washington) were also noted on the data form. It was then determined whether the hydrophytic vegetation criteria was met. When 50% or more of the dominant species have an indicator status of OBL, FACW or FAC, or there is a prevalence index less than 3, the vegetation is considered hydrophytic.

Characterization of Soils. At each sample point, a hole 16 to 18 inches in depth was dug using a spade (an existing soil perk hole was used if available). Soil characteristics (matrix color, mottles, etc.) were examined and noted. It was then determined whether the hydric soil criterion was met. Hydric soil criterion is determined using the latest version of the Natural Resources Conservation Service Hydric Soil Guidebook as outlined in the Army Corps Regional Supplement to the delineation manual.

Determination of Hydrology Criterion. At each sample point the presence of inundation by water, soil saturation by water, or other hydrologic field indicators was noted. It was then determined whether the wetland hydrology criterion was met.

Wetland Determination. The completed data forms were then examined for each selected sample point within the plant communities. Each plant community meeting the hydrophytic vegetation, hydric soil, and wetland hydrology criteria was considered wetland. Data forms are numbered correspondingly to the sample points located on the final survey drawing.

DETERMINATION OF WETLAND-NONWETLAND BOUNDARY

After completing the determination method summarized above, the actual boundary between wetland and non-wetland was delineated. This delineation was completed by:
1. recognizing obvious wetland and non-wetland areas,
2. identification of transitional areas between the two areas,
3. final determination of the boundary by further sampling of vegetation, soils, and hydrology.

The wetland Boundary was then flagged with numbered orange flags with WB (Wetland Boundary) written on them. The approximate location of these flags is then noted on a map, if available, for subsequent survey.
* Important Note: The exact location of the boundary between wetland and non-wetland areas may be difficult to determine, especially if transition areas are more gradual. In cases such as this the wetland boundary is determined, after further sampling, by using the best possible professional judgment.

ATTACHMENT #5

DEFINITION OF PLANT INDICATOR STATUS

The following plant indicator status categories and their symbols are derived from the Wetland Plant List, Northwest Region, USFWS, Washington, D.C. (Reed, 1988)

Symbol	Definition of Plant Indicator Status
OBL	Obligate wetland plants are nearly always found in wetlands (estimated probability 99% or more)
FACW	Facultative wetland plants usually found in wetlands (estimated probability 67-99%)
FAC	Facultative plants are equally likely in wetlands and uplands (estimated probability 34-66%)
FACU	Facultative upland plants usually in uplands (estimated probability 67-99%)
UPL	Upland plants are nearly always in uplands (estimated probability 99% or more)
NI	Not indicated plant species are not determined due to lack of sufficient information
NL	Not listed in the "National List of Plant Species that Occur in Wetlands" indicating the lack of information for this species.

Note: The "National List of Plant species that Occur in Wetlands" uses a plus (+) or minus (-) sign to specify a higher or lower portion of a particular wetland indicator frequency for the three facultative-type indicators...). (from section 2.5, page 6, Federal Manual for Identifying and Delineating Jurisdictional Wetlands)