CRITICAL AREAS REPORT
JENSEN MARINE TRADES CENTER – PORT OF FRIDAY HARBOR
SAN JUAN ISLAND, WASHINGTON

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Introduction

Background

Essency Environmental prepared this Critical Areas Report for the Port of Friday Harbor's proposed Jensen Boatyard Marine Trades Center project. The project site is located on San Juan County tax parcel number 351341005000 on San Juan Island, Washington. The project site is in Section 13, Township 35N, Range 3W, and the site address is 1293 Turn Point Road, Friday Harbor, Washington. The project location is shown on Figure 1 in Appendix A.

Project contacts are shown in Table 1.

Table 1. Project Contacts.

Organization	Role	Representative	Title	Email\Phone
Essency Environmental LLC	Critical Areas Report	Mary Harenda	Professional Wetland Scientist, Fisheries Biologist	mharenda@cablespeed.com (425) 761-5903
Essency Environmental LLC	Critical Areas Report	Andrew Wones	Ecologist, Marine Biologist	andywones@cablespeed.com (425) 269-3119
Leon Environmental LLC	Project Manager	Gisele Sassen	Planner/ Landscape Architect	sassen@leon-environmental.com (360) 464-9985

Qualifications

This document was prepared by Andrew Wones and Mary Harenda of Essency Environmental, LLC. Essency Environmental, LLC provides environmental consulting services and has conducted many critical areas studies in Washington State.

Andrew Wones has over 30 years of experience in marine and freshwater ecological research and environmental consulting. He has extensive experience with aquatic resources permitting, natural resource inventories, impact assessment, endangered species, mitigation planning and monitoring, and construction monitoring for environmental compliance. Mr. Wones has contributed to numerous environmental impact statements, natural resource studies, provided compliance monitoring services, and written biological assessments for several ports, marinas, housing development underwriters, and utility agencies. He has authored natural resources technical reports and chapters for NEPA/SEPA documents evaluating a variety of projects

including transportation, mining, residential, and recreational developments. Andrew is also a Certified Erosion and Sedimentation Control Lead (CESCL).

Mary Harenda is a Professional Wetland Scientist with over 30 years of diverse experience in biological sciences, project planning and design. She possesses a thorough working knowledge of local, state, and federal permitting and plan requirements, including the Washington SEPA and federal NEPA processes (BAs/BEs/EISs). Mary's extensive technical experience includes wetland inventories, delineations and functional assessments, stream assessments and evaluations, and assessments for wildlife and threatened and endangered species. Her expertise also includes construction oversight on wetland and stream mitigation projects and follow-up monitoring to meet permit requirements. She has completed long-term, multiparameter monitoring on numerous mitigation banks in Washington State. She has worked in both the public and private sectors and has experience across a broad client base including small and large development firms, private home and property owners, small and large businesses, local, state and federal governments and agencies, and public and private utilities. She also mentors students studying wetland science.

Methods

This study was conducted following standard critical areas assessment procedures and additional guidance in the San Juan County Unified Development Code (SJCC Title 18). Background research included review of the following sources:

- Federal Emergency Management Agency National Flood Hazard Maps (FEMA 2018)
- San Juan County Polaris GIS System (San Juan County 2020)
- Washington State Department of Ecology 303d list, interactive map (Ecology 2020a)
- Washington Department of Ecology. Washington State Coastal Atlas Map (Ecology 2020b)
- Washington State Department of Fish and Wildlife Priority Habitats and Species database (WDFW 2020a)
- Washington State Department of Fish and Wildlife Salmonscape database (WDFW 2020b)
- USFWS National Wetlands Inventory Mapper (USFWS 2020a)
- USDA NRCS Web Soil Survey (NRCS 2020)
- Washington State Department of Natural Resources Forest Practices Application Mapping Tool (WDNR 2020)
- Aerial photography of the site (Google Earth 2018)
- Site Survey (San Juan Surveying, 2019)
- Stream Inventory for San Juan County (Wild Fish Conservancy 2020)

Essency Environmental Ecologist, Andrew Wones, and Professional Wetland Scientist, Mary Harenda, completed on-site field work on September 28 and 29, 2020. The study area boundaries on the project parcel are shown on Figure 2 in Appendix A. We evaluated the study area for the presence of critical areas. In addition, we evaluated areas within 300 feet to determine if any critical areas were present whose buffers could extend onto the project site. We were able to access adjacent properties to the east and west. Where access to adjacent areas was not available, presence or absence of critical areas was determined using published information sources including published maps and aerial images, and from what could be seen from the project parcel, public roads, and other publicly accessible areas. Ordinary high water mark (OHWM) delineations were completed using Washington State Department of Ecology approved methods (Ecology 2016). Wetland determinations and delineations following US Army Corps of Engineers wetland delineation guidelines (USACE 2010). Critical area delineation flags and sample plot locations were mapped using a GPS (Juniper Systems Geode GPS with EFFIGIS data collection and post processing software).

Results

Project and Site Description

The Port of Friday Harbor is proposing to redevelop the project site. This critical areas study was prepared in support of the Jensen Marine Trades Center. The boundary for this study is shown on Figure 2 in Appendix A. A survey of the Jensen's Shipyard properties completed by San Juan Surveying is included as Appendix B. Site photos are shown in Appendix C.

The project site is located on Parcel 351341005000, which is designated as "Rural Industrial" under the San Juan County Comprehensive Plan (San Juan County 2020). The project site is fronted by the marine shoreline of Friday Harbor/Shipyard Cove. Shipbuilding activities occurred on the site from the early 20th century through the late 1970s. Maintenance activities are ongoing to present day west of the study area. An aerial image of the site taken in 1932 available on the San Juan County GIS site shows that a portion of the intertidal zone within Shipyard Cove was filled associated with gravel mining and export from the hillside south of Turn Point Road. A conveyor belt system, visible on the aerial image from 1932, was used to move material down gradient. Some of the westernmost portion of the project site in the area of the boat building may have been filled as part of this effort.

Over the years, a variety of shipbuilding debris was disposed of in the upper intertidal zone within Shipyard Cove and buried in the shoreline bank. Rusted metal, tires, pieces of boats, and other miscellaneous debris are visible along the shore, both in the water and embedded in the shoreline bluff within the project boundaries. The former boat building located in the southwestern portion of the project site is also filled with old equipment and boat building materials. According to information provided by Leon Environmental, LLC, areas of both marine and upland sediment contamination are present within the study area, on the Port of Friday Harbor lands to the west, and in adjacent marine areas within Friday Harbor/Shipyard Cove.

In addition to the former boat building, other existing development with the project site includes a concrete slab boat ramp, a pump house and water tank, an approximately 230-square foot shed, another collapsed shed, a gravel pad along the base of the Turn Point Road prism, and a dirt/gravel driveway. A review of timeline aerial images on Google Earth show that between approximately 1990 and 2009, upland areas away from the shoreline were farmed. Several additional buildings/greenhouses were present near the road, as well as a constructed farm pond that may have been used for irrigation. The aerial image from 1932 shows the site largely dominated by herbaceous vegetation which would also indicate agricultural use. A grove of trees is visible on the image in the southeast portion of the project area and a row of trees is visible along the marine shoreline east of the boat building.

A row of trees, including some mature conifers, is currently present on the low bluff along the marine shoreline between the existing shed and east project boundary. Trees inventoried included western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), and Scouler's willow (*Salix scouleriana*). Individual tree species and diameters are shown on a table on Figure 2. The shoreline bluff is slightly undercut causing some of the trees to hang out over the high

tide line. Two of the cedar trees (T7 and T9 on Figure 2) are horizontal at the base and seem likely to fall into the cove in the near future.

Remaining upland habitat is currently dominated by grasses and forbs including: meadow fescue (*Schedonorus pratensis*), tall fescue (*Schedonorus arundinaceus*), velvet grass (*Holcus lanatus)*, orchard grass (*Dactylis glomerata*), English plantain (*Plantago lanceolata*), cat's ear (*Hypochaeris radicata*), field horsetail (*Equisetum arvense*), bentgrass (*Agrostis gigantea*), reed canarygrass (*Phalaris arundinacea*), Queen Anne's lace (*Daucus carota*), soft rush (*Juncus effusus*), Kentucky bluegrass (*Poa pratensis)*, white clover (*Trifolium repens*), red clover (*Trifolium pratense*), Canada thistle *(Cirsium arvense*), and bull thistle (*Cirsium vulgare*). A few patches of non-native shrubs, blackberry (*Rubus armeniacus*) and Scotch broom (*Cytisus scoparius*), are also present.

Site soils are shown on NRCS maps as "beaches" in marine areas, and Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes in the remainder of the site. The latter is not considered a hydric soil unit, although can be seasonally wet due to the shallow depth to either a dense restrictive soil layer or bedrock (NRCS 2020). Both Mitchellbay and Killebrew soils formed in glacial drift over dense glaciomarine deposits and typically have a soil texture of gravelly sandy loam or sandy loam in the top 17-20 inches. Observed soil characteristics on the project site match texture, color, and other general characteristics of the mapped soils, although past disturbance is evident (see Soils section of Wetland Determination Forms in Appendix D).

Shoreline Jurisdiction

The entire project area is within Shoreline jurisdiction, i.e. within 200 feet of the marine OHWM of Friday Harbor/Shipyard Cove (San Juan County 2020). Parcel 351341005000 has a Shoreline designation of Port, Marina, and Transportation (PMT) and Rural Industrial land use (San Juan County 2020).

Critical Areas

San Juan County Code adopted critical areas overlay districts to "protect the functions and values in critical areas in conformance with the requirements of the Washington Growth Management Act and the policies of the San Juan County Comprehensive Plan" (SJCC 18.35.020). Per SJCC 18.35.025, "These overlay districts provide regulations for land use, and development and vegetation removal in critical areas and areas adjacent to critical areas as established in SJCC 18.35.055 through 18.35.140." In addition, SJCC Chapter 18.50 – Shoreline Master Program, regulates critical areas present within Shoreline jurisdiction. SJCC 18.50.130 pertains to critical areas in Shoreline jurisdiction and states that provisions of the critical areas regulations in SJCC 18.35 that are not consistent with the RCW 90.58, the State Shoreline Management Act, and its supporting WACS do not apply in Shoreline jurisdiction.

There are five categories of critical areas defined and regulated under San Juan County Code:

- Geologically Hazardous Areas
- Frequently Flooded Areas

- Critical Aquifer Recharge Areas
- Wetlands
- Fish and Wildlife Habitat Conservation Areas

This study focused on identifying the presence of any regulated wetlands, regulated surface waters, and their buffers. General information is also provided in this report on the occurrence of other critical areas as defined in the San Juan County Code.

Geologically Hazard Areas

The San Juan County Polaris site does not map any Geologically Hazardous Areas within the project boundaries (San Juan County 2020). The Turn Point Road prism is mapped as "Soils With Subclass 'e' ". Subclass 'e' soils are susceptible to erosion. The project area is mapped as having a low to very low susceptibility to liquefaction (Palmer et. al 2004). Essency Environmental is not qualified to further evaluate the project site for potential geologic hazards.

Frequently Flooded Areas

A portion of the project site is mapped as within the marine 100-year floodplain (Zone AE) by the Federal Emergency Management Agency (2018) and San Juan County (2020) (Figure 2 in Appendix A).

Critical Aquifer Recharge Areas

The entire project area and surrounding parcels are mapped as an Aquifer Recharge Area (San Juan County 2020). A pump house and water tank are present on site (Figure 2 in Appendix A; Survey Drawing in Appendix B). The Washington Department of Ecology's interactive well map does not have a record of a water well on the project site (Ecology 2020c). A domestic water well south of Turn Point Road upslope from the project area is shown on the Ecology map. Ecology's map does not show exempt wells.

Wetlands

We completed field work on September 28-29, 2020. An unseasonably heavy precipitation period occurred over the four days prior to our site visit. Friday Harbor Airport recorded 1.59 inches of rainfall from September 23-27, which is more than the average total rainfall of 1.41 inches for the entire month of September (Source: NOAA Regional Climate Center at http://agacis.rcc-acis.org/). The total rainfall recorded for September 2020 at Friday Harbor Airport was 1.87 inches.

We sampled six locations, P1-P6 shown on Figure 2, that appeared most likely to support wetland conditions. Wetland Determination Forms are in Appendix D. No jurisdictional wetlands are present on the project site. None of the sample plots exhibited hydric soil or wetland hydrology indicators. Four of the six plots did not meet criteria for hydrophytic vegetation. We were able to access adjacent areas to the east and west and determined that no wetlands are present within the maximum regulated buffer widths.

An excavated ditch is present on the adjacent parcel to the east. The ditch carries water downslope from roadside ditches via a culvert under Turn Point Road. A vertical cut slope is present on the upslope side of Turn Point Road and there is no channel or other upslope source of water that would indicate a wetland or a stream was historically present in this area. This ditch is not readily visible on 1932 aerial image, although the quality of the image is not clear enough to see this level of detail. The oldest aerial on which the ditch is clearly visible is from 2008. Water from this culvert under the road sheet flows down the slope into the excavated ditch.

The ditch is trapezoidal, ranges from 3-6 feet wide, and is about 1-foot deep. It ends abruptly at both the upslope and downslope ends. A perched, 6-in corrugated plastic pipe (CPP) discharges into the ditch near the upslope end that appears to carry water from a drain system (French drain?) on the adjacent parcel to the east. There was a steady trickle coming out of the pipe on 9/28/20. The water immediately infiltrated into the bottom of the ditch. There was no surface flow further downslope. There is a triangular shaped area dominated by reed canarygrass (*Phalaris arundinacea* – FACW), soft rush (*Juncus effusus* – FACW), and field horsetail (*Equisetum arvense* – FAC), downslope of the ditch. A shallow swale is present in this area that appears to carry surface flows to the edge of bluff during wet periods when surface water overflows from the downslope end of the ditch. The soils on either side of the ditch are upland soils and did not have hydric soil indicators. The soils in the triangular area are also upland and did not have hydric soil indicators. No indicators of either hydric soil or wetland hydrology were present in the sample plots in this area (P4 and P6). Observed soil characteristics match those of the mapped series, Mitchellbay-Rock Outcrop-Killebrew Complex, 3 to 15 percent slopes. This ditch is not a regulated feature under San Juan County Code.

What appears to be a remnant portion of a farm pond, perhaps an irrigation pond, is present in the southcentral portion of site (Figure 2). This pond is visible on a 2008 aerial but was largely filled in by 2011. Aerials from 2008 and prior show several buildings in the vicinity, and active agricultural activities including greenhouses, tilled beds, and partitioned growing structures. A pump house and water tank are still present on the property to the southwest of the old pond (Figure 2 and Survey Drawing in Appendix B). This pond may have been lined to hold water which explains why cattails (*Typha sp*.) are present in an area of surrounding upland soils and no obvious natural water source. This artificial water feature is not regulated by San Juan County code per the definition of "Wetland" in the code which clearly excludes irrigation and drainage ditches, and farm ponds. From SJCC 18.20.230 - *"Wetland" means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.*

Fish and Wildlife Habitat Conservation Areas

SJCC 18.35.115 denotes the types of regulated Fish and Wildlife Habitat Conservation Areas (FWHCAs):

- Areas with which Endangered, Threatened and Sensitive Species have a primary association
- Shellfish area
- Kelp and eelgrass beds
- Herring, smelt, sand lance and other forage fish spawning areas
- Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat
- Lakes
- Streams
- State natural area preserves, natural resource conservation areas and state wildlife areas
- Habitats of Local Importance: critical saltwater habitats, west side prairie, herbaceous balds and bluffs, Garry oak woodlands and savannas, pocket beaches, and bluff backed beaches. Critical saltwater habitats include: kelp beds, eelgrass beds, spawning and holding areas for forage fish, shellfish beds, mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association.
- Areas with which the following Species of Local Importance have a primary association: black oystercatcher, golden eagle, great blue heron, island marble butterfly, pigeon guillemot, Townsend's big-eared bat, flying squirrel, sharp-tailed snake, western toad, Taylor's checkerspot butterfly, valley silverspot butterfly, sand verbena moth, areas with roosting concentrations of bats, active nests of any of the birds listed in SJCC 18.35.115 (I)(15), brittle prickly pear cactus, and Alaska alkaligrass.

San Juan County maps do not show any Fish and Wildlife Conservation Areas on or in the vicinity of the project site (San Juan County 2020).

The Washington Department of Fish and Wildlife Priority Species and Habitats (PHS) database (WDFW 2020) lists golden eagle (*Aquila chrysaetos*) and pinto abalone (*Haliotis kamtschatkana*) as present in Township 35N, Range 3W, and the island marble butterfly (*Euchloe ausonides insulanus*) [federally listed Endangered] as present in Section 13 of Township 35N, Range 3W. None of these species are known to have a primary association with the project site. The project site is at the northern edge of area mapped as the historic range of the island marble butterfly (USFWS 2020b). The mapped current range is limited to Cattle Point approximately 4 miles southwest of Parcel 351341005000 (USFWS 2020b). This species depends on a host plant, the common field mustard (*Brassica rapa*) in upland habitat. No *Brassica rapa* was observed during our September 2020 site visit.

As previously described in detail in the **Wetlands** section, above, an excavated ditch is present on the adjacent parcel to the east. The ditch carries water downslope from roadside ditches via the culvert under Turn Point Road. A vertical cut slope is present on the upslope side of Turn Point Road and there is no channel or other upslope source of water that would indicate a wetland or a stream was historically present in this area. In addition, none of the resource maps including maps published by WDFW, WDNR, Ecology, Wild Fish Conservancy, and San Juan County, identify any streams on the project site or adjacent properties. This ditch is excluded from regulation as a FHWCA under SJCC 18.35.115: *Fish and wildlife habitat conservation areas do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.*

The intertidal portion of the project site is critical saltwater habitat regulated as an Aquatic FWHCA. The mapped OHWM of this area is shown on Figure 2. The upper intertidal area north of the boat building is dominated by vascular plant species including: pickleweed (*Salicornia virginica*), seaside plantain (*Plantago maritima*), spear oracle (*Atriplex patula*), salt grass (*Distichlis spicata*), tufted hairgrass (*Deschampsia cespitosa*), seaside arrow-grass (*Triglochin maritima*), and silver beachweed (*Ambrosia chamissonis*). North of the boat building, we observed a single eelgrass plant growing at approximately the 1 to 2-ft elevation (relative to mean lower low water). The Washington Coastal Zone Atlas (Ecology 2020b) maps patchy eelgrass throughout Shipyard Cove of Friday Harbor. Aerial images (Ecology 2020, Google Earth 2018, 2016, 2014, 2011) show patches of green that likely indicate the presence of patchy eelgrass and/or benthic macroalgae (e.g. *Ulva sp*.) at < 2-ft elevation north of the project site.

The intertidal area on the project parcel waterward of the bluff between the existing shed to the east project boundary is cobble-dominated beach habitat. Sparse macroalgae (*Fucus sp*.) grows attached to cobbles in this area. Several large logs are present on the beach. Over the years, a variety of shipbuilding debris was disposed of in the upper intertidal zone within Shipyard Cove and buried in the shoreline bank. Rusted metal, tires, pieces of boats, and other miscellaneous debris are visible along the shore, both in the water and embedded in the banks within the project boundaries. The former boat building located in southwestern portion of the project site is also filled with old equipment and shipbuilding materials. According to information provided by Leon Environmental, LLC, known areas of both marine and upland sediment contamination are present within the study area boundaries, on the Port of Friday Harbor lands to the west, and in adjacent marine areas within Friday Harbor/Shipyard Cove. Gravel and sand areas north of the bluff within the 5 to 7-ft elevation range could provide substrate for surf smelt spawning. However, Washington State maps of forage fish spawning areas do not show forage fish spawning sites in the project vicinity (Washington State 2020). Vessel debris may make this substrate suboptimal for forage fish spawning.

A line of trees, including some conifers, is present on the low bluff along the shoreline between the existing shed and east project boundary. We mapped all trees on the project site. Individual tree species, drip lines, and diameters are shown on Figure 2. Trees inventoried included western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), and Scouler's willow (*Salix scouleriana*). The shoreline bluff is slightly undercut causing some of the trees to hang out over the high tide line. Shrubs are also present on the shoreline bluff. Species noted include ocean spray (*Holodiscus discolor*), salal (*Gaultheria shallon*), Nootka rose (*Rosa nutkana*),

peafruit rose (*Rosa pisocarpa*), snowberry (*Symphoricarpos albus*), and Himalayan blackberry (*Rubus armeniacus*).

Regulatory Considerations

The entire project area is within Shoreline jurisdiction, i.e. within 200 feet of the marine OHWM of Friday Harbor/Shipyard Cove. The State Shoreline Management Act (RCW 90.58) governs activities within Shoreline jurisdiction. Chapter 18.50 of the San Juan County Code addresses implementation of the Shoreline Management Act in San Juan County. Either a Shorelines Exemption or Shorelines Substantial Development Permit will be required for development within Shoreline jurisdiction.

Critical areas and buffers, including water quality buffers and tree protection zones, located in Shoreline jurisdiction are regulated by both SJCC 18.50 – Shoreline Master Program, and SJCC 18.35 – Critical Areas Overlay District. SJCC 18.50.130 states that provisions of the critical areas regulations in SJCC 18.35 that are not consistent with the RCW 90.58, the State Shoreline Management Act, and its supporting WACS do not apply in Shoreline jurisdiction. SJCC 18.50.140 (A) directs that: "*Shoreline development, land uses, structures and activities must meet the no net loss requirement of WAC 173-26-186(8)(b). If project proposals do not comply with the critical area protections in SJCC 18.50.130, applicants must submit a mitigation sequence analysis to the department.*"

Any specific project proposal for the site will be reviewed for consistency with Shoreline and Critical Areas regulations in the San Juan County Code, and consistency with the Shoreline Management Plan and Comprehensive Plan.

Other permits that may be required for any activities occurring below the OHWM and MHHW of Friday Harbor/Shipyard Cove include: Section 10/Section 404 permit from the US Army Corps of Engineers, Section 401 Water Quality Certification from the Washington State Department of Ecology, Coastal Zone Management Certification from the Washington State Department of Ecology, a Hydraulic Project Approval from the Washington State Department of Fish and Wildlife, and an Aquatic Lands Use Permit from the Washington State Department of Natural Resources.

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Appendix A: Figures

Figure 1. Vicinity Map.

Image Source: USGS The National Map (https://viewer.nationalmap.gov/

Jensen Marine Trades Center
Parcel 351341005000
Critical Areas Report

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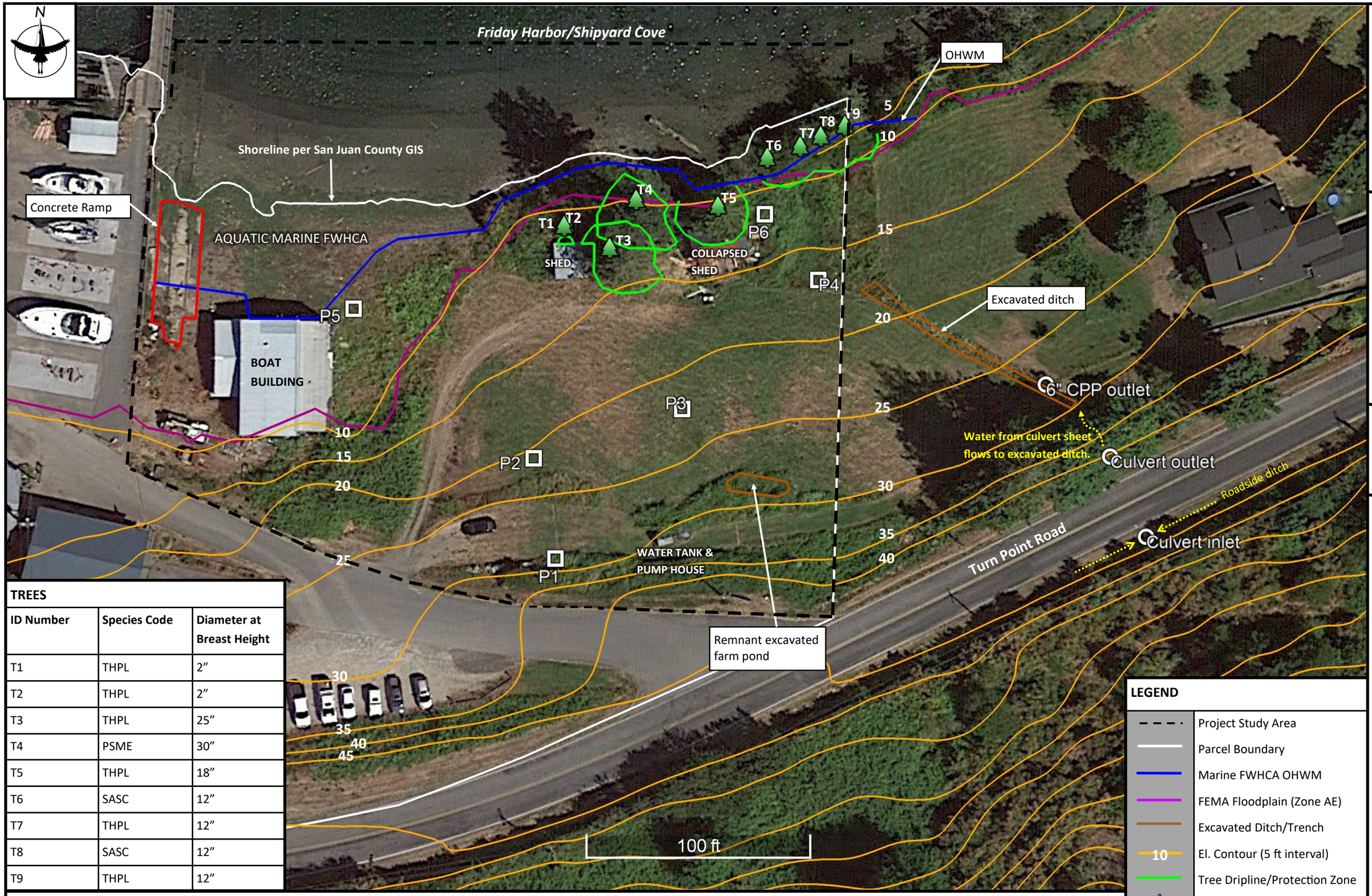

TREES		
ID Number	**Species Code**	**Diameter at Breast Height**
T1	THPL	2”
T2	THPL	2”
T3	THPL	25”
T4	PSME	30”
T5	THPL	18”
T6	SASC	12”
T7	THPL	12”
T8	SASC	12”
T9	THPL	12”

LEGEND

- Project Study Area
- Parcel Boundary
- Marine FWHCA OHWM
- FEMA Floodplain (Zone AE)
- Excavated Ditch/Trench
- 10 El. Contour (5 ft interval)
- Tree Dripline/Protection Zone
- T1 Individual Tree
- Sample Plot

Tree Species Codes: THPL= *Thuja plicata* (western red cedar), PSME= *Pseudotsuga menziesii* (Douglas fir), SASC= *Salix scouleriana* (Scouler’s willow).

Notes: Image Source: Google Earth Pro 7/16/2018. FEMA Floodzone AE boundary and elevation contours from San Juan County GIS (5-ft contour in NW corner of project boundary missing from county GIS).

Date: 11/07/2020

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Figure 2. Critical Areas

Jensen Marine Trades Center
Critical Areas Report
Parcel 351341005000. San Juan Island, WA

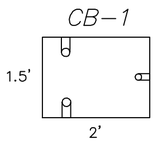
Appendix B: Site Survey

LEGEND

- SURVEY MONUMENT
- PILING
- SEPTIC LID
- SEPTIC CLEANOUT
- HYDRANT
- WATER VALVE
- WATER METER
- TELEPHONE PEDESTAL
- POWER POLE
- MONITORING WELL
- CATCH BASIN
- 10' CONTOURS BELOW 10' ELEV.
- 2' CONTOURS BELOW 10' ELEV.
- 10' CONTOURS ABOVE 10' ELEV.
- 2' CONTOURS ABOVE 10' ELEV.
- EDGE OF PAVEMENT
- FENCE LINE

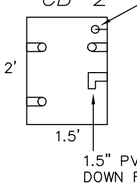
CATCH BASIN DETAIL

CB–1



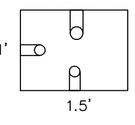
RIM = 10.93'
1" PVC (E)
IE = 10.02'
2" PVC (N)
IE = 9.55'
1.5" PVC (S)
IE = 9.59'

CB–2



FLOAT SWITCH
RIM = 11.10'
2" PVC w/ BALL VALVE (W)(x2)
IE = 9.57'
2" PVC (E)
IE = 9.40'
1.5" PVC w/ 90° DOWN FOR PUMP

CB–3



RIM = 14.63'
4" CPP (W)
IE = 10.83'
6" CPP (N)
IE = 10.83'
4" CPP (S)
IE = 11.53'

FRIDAY HARBOR

EXISTING DNR LEASE #10492
1.76 ACRES UPLANDS
1.45 ACRES TIDELANDS
4.19 ACRES BEDLANDS
7.40 ACRES TOTAL

EXTENSION OF GOVERNMENT LOT LINE
BALANCED MEANDER LINE
S25°23'17"E 128.30'
THEORETICAL BOUNDARY PER BLA AFN 56001
INTERSECTION OF BALANCED MEANDER LINE AND GOVERNMENT LOT LINE
N1°47'05"E 252.46'
247.24'
EXISTING CENTERLINE
CALCULATED RIGHT OF WAY PER AFN 54942
TURN POINT ROAD
BARNHILL CONSTRUCTION COMPANY AFN 8117261B TPN 351341006000
UPLAND BOUNDARY PER DEED PARCEL (MEANDER LINE) AREA = 1.46 ACRES
S25°23'17"E 466.34'
N84°13'38"W 179.81'
R=470.00'
A=153.03'
D=18°39'20"
77.08'
EXISTING DRIVE
N61°30'24"E 238.80' (PIPE TO PIPE)
226.37'
4.58' MEANDER LINE TO 2" OPEN IRON PIPE
7.85' CALCULATED RIGHT-OF-WAY TO PIPE
1–1/2" IRON PIPE W/ 3/4" IRON ROD INSIDE
CONC. PAD
CARPORT
OFFICE & RESTROOMS
TENT
POLE BUILDING
PIER
RAMP
CONCRETE RETAINING WALL
RIPRAP WALL
BOAT LAUNCH RAMP
ORDINARY HIGH WATER MARK
MEAN HIGHER HIGH WATER
TIED UP FLOATS
EXTREME LOW WATER (-4.0')
JETTY ON FILL
6" PVC IE OUT = 8.0'
N58°20'50"W 264.35'
N58°20'50"W 187.27'
SHORELINE PER SAN JUAN COUNTY GIS
FALLEN PIER
CB1
CB2
SHED
CONC. PAD
CHANNEL DRAIN
ECO BLOCK RETAINING WALL
CONC. RAMP
BOAT YARD
PORT OF FRIDAY HARBOR AFN 2018-0518019 TPN 351341005000
DETENTION POND
BARN
2" FIRE STANDPIPE, VALVE AND VAULT
CB3
CHANNEL DRAIN
GARAGE
GARAGE
OFFICE
SEPTIC FIELD
WATER TANK & PUMP HOUSE
PAVED DRIVE
WATER LINE LOCATE PAINT
N 65°49'22" E
135.77'
GRAVEL PARKING
R=470.00'
A=712.26'
D= 86°49'42"
OVERHEAD POWER
TURN POINT ROAD
FLOAT
PIER
COVERED SLIP
COVERED SLIPS
ROOFLINE (TYP.)
DOCK
RAMP
TIED UP FLOATS
BALANCED MEANDER LINE
S73°12'40"W 401.00'
ORDINARY HIGH WATER MARK
FALLEN DOWN SHED
S1°42'40"W 282.91'
NO FOUND MONUMENTS, CALCULATED PER DEED
JERI JENSEN & MICHAEL S AHRENIUS AFN 2012-1228031 TPN 351341004000
*APPROXIMATE STRUCTURES PER AERIAL PHOTOGRAPHY

SURVEYOR'S NOTES

1. THIS TOPOGRAPHIC SURVEY MEETS OR EXCEEDS THE REQUIREMENTS OF WAC 332–130–090.

2. THIS MAP REPRESENTS A TOPOGRAPHIC SURVEY WHICH LOCATED EXISTING MONUMENTS, STAKES AND PHYSICAL FEATURES. NO BOUNDARY MARKERS OR STAKES WERE SET. ALL PARTIES ARE HEREBY ADVISED THAT THIS MAP DOES NOT CONSTITUTE A BOUNDARY SURVEY, AND IS EXEMPT FROM THE REQUIREMENTS FOR FILING UNDER THE PROVISIONS OF THE WASHINGTON STATE SURVEY RECORDING ACT PER RCW 58.09.090(1)(D)

3. THE BASIS OF BEARINGS FOR THIS SURVEY IS THE WASHINGTON STATE PLANE COORDINATE SYSTEM – NORTH ZONE. ON–SITE STATIC OBSERVATIONS WERE POST PROCESSED USING THE LEICA PROPRIETARY SPIDERNET WITH THE BASE STATION BEING AT THE SAN JUAN SURVEYING, LLC OFFICE LOCATED IN FRIDAY HARBOR, WASHINGTON.

4. UPLAND CONTOURS (10'+) ARE PER PUGET SOUND LIDAR CONSORTIUM DATA (2009) AND HAVE A VERTICAL DATUM OF NAVD88 (GEOID 2012B). TIDAL CONTOURS (8'–) ARE PER THIS SURVEY AND HAVE A VERTICAL DATUM OF MLLW = 0' WITH THE REFERENCE STATION BEING FRIDAY HARBOR TIDAL BENCHMARK 10.

EQUIPMENT AND PROCEDURES

EQUIPMENT: TOPCON ROBOTIC TOTAL STATION (PS103A)
HIPER V GPS DUAL FREQUENCY GNSS RECEIVER W/ BASE STATION

PROCEDURE: FIELD TRAVERSE

SCALE IN FEET
1" = 60'

0 60 120 180

HORIZONTAL DATUM: WSPCS NAD83 (SEE NOTE 3)
VERTICAL DATUM: MLLW/NAVD88 (SEE NOTE 4)

PROPERTY INFORMATION

SITE ADDRESS: 1293 TURN POINT ROAD	TAX PARCEL NUMBER: 351341005
DESCRIPTION: JENSEN'S SHIPYARD PLANNING MAP	MISC:

ROBERT J. WILSON — STATE OF WASHINGTON — 16118 — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

SAN JUAN SURVEYING
P.O. BOX 611
FRIDAY HARBOR, WA 98250
360.378.2300
WWW.SANJUANSURVEYING.COM

SECTION INDEXING DATA

QUARTER / QUARTER	SECTION	TOWNSHIP	RANGE
GL 6	13	35 NORTH	3 WEST

TOPOGRAPHIC SURVEY
FOR
PORT OF FRIDAY HARBOR
IN
FRIDAY HARBOR

DRAWN BY:	COMP REF:	JOB NO:
RJW	18–067 (TOPO)	18–067
CHECKED BY: NSR	DATE: 11/14/19	SHEET 1 OF 1

PORT OF FRIDAY HARBOR
PO BOX 889
FRIDAY HARBOR, WA 98250

Appendix C: Site Photos

Photo 1. Concrete boat ramp at northwest portion of study area, facing north.

Photo 2. Shoreline at northwest portion of study area, facing west.

Photo 3. Shoreline at the northeast portion of study area, facing northeast.

Photo 4. Harbor view from shoreline, facing north.

Photo 5. Boat building and upper intertidal area, facing south.

Photo 6. Boat building, facing west-southwest.

Photo 7. From southeast corner of Parcel 351341005000, facing west. An excavated trench or remains of a former farm pond is located under the blackberries at the center of photo.

Photo 8. From southeast of Parcel 351341005000, facing northwest. Recently mown portion is on the adjacent parcel to the east of the project site.

Photo 9. Excavated ditch on adjacent parcel to the east, facing southeast.

Photo 10. A corrugated plastic pipe drains to the upper end of the ditch on the adjacent property. The pipe may drain from the base of the retaining wall upslope of the residence on that property.

Photo 11. Trees mapped along the shoreline of Parcel 351341005000, facing northwest.

Photo 12. Vessel debris in the upper intertidal zone along the shoreline.

Appendix D: Wetland Determination Data Forms

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

Project Site: Jensen's Shipyard City/County: /San Juan Sampling Date: 9/28/2020
Applicant/Owner: Port of Friday Harbor State: WA Sampling Point: P1
Investigator(s): M. Harenda, A. Wones Section, Township, Range: S13, 35N, 3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): <1
Subregion (LRR): MLRA2 Lat: 48.525363° N Long: 122.998375° W Datum: WGS
Soil Map Unit Name: Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes NWI classification: NA
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: **At slope break below road prism.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft dm)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10ft dm)			
1. *Photinia*	50	yes	UPL
2. *Rubus ursinus*	5	no	FACU
3.			
4.			
5.			
50% = 27.5, 20% = 11	55	= Total Cover	
Herb Stratum (Plot size: 6ft dm)			
1. *Phalaris arundinacea*	100	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= 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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: Jensen's Shipyard - Port of Friday Harbor

SOIL Sampling Point: P1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					loam	
4-14	10YR 3/2	100					gr sa lm	concrete pieces

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks:

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 Stresses 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:

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

Project Site: Jensen's Shipyard City/County: /San Juan Sampling Date: 9/28/2020
Applicant/Owner: Port of Friday Harbor State: WA Sampling Point: P2
Investigator(s): M. Harenda, A. Wones Section, Township, Range: S13, 35N, 3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 10
Subregion (LRR): MLRA2 Lat: 48.525485° N Long: 122.998415° W Datum: WGS
Soil Map Unit Name: Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes NWI classification: NA
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:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft dm)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10ft dm)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 6ft dm)			
1. *Schedonorus pratensis*	65	yes	FACU
2. *Holcus lanatus*	20	yes	FAC
3. *Plantago lanceolata*	10	no	FACU
4. *Equisetum arvense*	3	no	FAC
5. *Daucus carota*	2	no	FACU
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= 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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: Jensen's Shipyard - Port of Friday Harbor

SOIL Sampling Point: P2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					sa gr lm	
6-14	10YR 3/2	20					gr sa lm	mixed/disturbed
6-14	10YR 3/4	80					gr sa lm	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks:

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 Stresses 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:

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

Project Site: Jensen's Shipyard City/County: /San Juan Sampling Date: 9/28/2020
Applicant/Owner: Port of Friday Harbor State: WA Sampling Point: P3
Investigator(s): M. Harenda, A. Wones Section, Township, Range: S13, 35N, 3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
Subregion (LRR): MLRA2 Lat: 48.525545° N Long: 122.998142° W Datum: WGS
Soil Map Unit Name: Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes NWI classification: NA
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:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft dm)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10ft dm)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 6ft dm)			
1. *Schedonorus pratensis*	25	yes	FACU
2. *Holcus lanatus*	15	no	FAC
3. *Poa pratensis*	30	yes	FAC
4. *Equisetum arvense*	10	no	FAC
5. *Trifolium repens*	10	no	FAC
6. *Bromus sp.*	10	no	FACU
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= 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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: Jensen's Shipyard - Port of Friday Harbor

SOIL

Sampling Point: P3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					gr sa lm	some cobbles
9-14	10YR 3/4	100					sa lm	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks:

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 Stresses 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:

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

Project Site: Jensen's Shipyard City/County: /San Juan Sampling Date: 9/28/2020
Applicant/Owner: Port of Friday Harbor State: WA Sampling Point: P4
Investigator(s): M. Harenda, A. Wones Section, Township, Range: S13, 35N, 3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
Subregion (LRR): MLRA2 Lat: 48.525702° N Long: 122.997892° W Datum: WGS
Soil Map Unit Name: Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes NWI classification: NA
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: **Flat spot where water from the upslope ditch discharges. Ditch carries road runoff from Turn Point Rd and water from an 6" CPP drain from the adjacent property to the east.**

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft dm)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10ft dm)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 6ft dm)			
1. *Phalaris arundinacea*	60	yes	FACW
2. *Equisetum arvense*	20	yes	FAC
3. *Juncus effusus*	20	yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= 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		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: Jensen's Shipyard - Port of Friday Harbor

SOIL

Sampling Point: P4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					loam	
4-12	10YR 3/2	100					gr sa lm	
12-16	10YR 3/2	80					gr sa lm	
12-16	10YR 5/2	20	7.5R 4/6	3	C	M	gr sa lm	

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks: This is a flat spot where water from the upslope ditch disperses.

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 Stresses 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: Flat spot where water from the upslope ditch discharges. Ditch carries road runoff from Turn Point Rd and water from an 6" CPP drain from the adjacent property to the east. Soils were moist at 12-16" depth. An unseasonably heavy precipitation period occurred over the three days prior to our site visit. Friday Harbor Airport recorded 1.59 inches of rainfall from September 25-27.

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

Project Site: Jensen's Shipyard City/County: /San Juan Sampling Date: 9/28/2020
Applicant/Owner: Port of Friday Harbor State: WA Sampling Point: P5
Investigator(s): M. Harenda, A. Wones Section, Township, Range: S13, 35N, 3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
Subregion (LRR): MLRA2 Lat: 48.525667° N Long: 122.998746° W Datum: WGS
Soil Map Unit Name: Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes NWI classification: NA
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:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft dm)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10ft dm)			
1. *Cytisus scoparius*	2	yes	UPL
2.			
3.			
4.			
5.			
50% = 1, 20% = 0.4	2	= Total Cover	
Herb Stratum (Plot size: 6ft dm)			
1. *Schedonorus pratensis*	91	yes	FACU
2. *Trifolium pratense*	2	no	FACU
3. *Trifolium repens*	3	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 48, 20% = 19.2	96	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= Total Cover	
% Bare Ground in Herb Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: Jensen's Shipyard - Port of Friday Harbor

SOIL

Sampling Point: P5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					gr sa lm	Compacted with wood and metal pieces.
								Oily odor

[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 Soils Present? **Yes** ☐ **No** ☒

Remarks:

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 Stresses 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: Soils include some wood and metal fragments. Chemical odor. Highly disturbed.

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

Project Site: Jensen's Shipyard City/County: /San Juan Sampling Date: 9/28/2020
Applicant/Owner: Port of Friday Harbor State: WA Sampling Point: P6
Investigator(s): M. Harenda, A. Wones Section, Township, Range: S13, 35N, 3W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15
Subregion (LRR): MLRA2 Lat: 48.525782° N Long: 122.997990° W Datum: WGS
Soil Map Unit Name: Mitchellbay-Rock Outcrop-Killebrew complex, 3 to 15 percent slopes NWI classification: NA
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:

VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 20ft dm)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
50% = , 20% =		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10ft dm)			
1.			
2.			
3.			
4.			
5.			
50% = , 20% =		= Total Cover	
Herb Stratum (Plot size: 6ft dm)			
1. *Phalaris arundinacae*	95	yes	FACW
2. *Equisetum arvense*	5	no	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50, 20% = 20	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
50% = , 20% =		= 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:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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:

Project Site: Jensen's Shipyard - Port of Friday Harbor

SOIL

Sampling Point: P6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/2	100					sa lm	
7-12	10YR 3/2	100					sa lm	Compacted
12-14	10YR 3/2	100					gr lmy 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 Soils Present? **Yes** ☐ **No** ☒

Remarks:

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 Stresses 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: