



Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance

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## **CRITICAL AREA STUDY AND BUFFER AVERAGING PLAN**

**FOR**

**ICOM – HARBOUR POINTE BLVD**

*MUKILTEO, WA*

*Wetland Resources, Inc. Project #14060*

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**RECEIVED**  
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**CITY OF MUKILTEO**

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### ATTACHMENTS:

2014 DOE WETLAND RATING FORM

FIELD DATA FORMS

CRITICAL AREA STUDY MAP WITH BUFFER AVERAGING PLAN (SHEET 1/1)

## INTRODUCTION

*Wetland Resources, Inc.* (WRI) conducted a site investigation in July 2012 for the 0.8-acre property located southwest of Harbour Pointe Boulevard SW and Mukilteo Speedway in the city of Mukilteo, WA (portion of Section 27, Township 27N, Range 4E, W.M. The purpose of the investigation was to identify jurisdictional wetlands and/or streams in the vicinity of the subject parcel. WRI performed a second site visit on April 11, 2016 to verify that conditions have not changed within the wetland on this site. The development proposal for the property will include construction of a mosque with associated parking and an access driveway. To achieve the development goals for the property, the applicant will propose a buffer averaging plan to gain access into the southern part of the site.

The entire site is forested and relatively level with minor undulations throughout. Access is from the north via Harbour Pointe Boulevard. Surrounding land use consists of commercial use to the north, east, and south, and undeveloped and residential use to the west. Dominant plant species found throughout the site consist of red alder and big-leaf maple in the canopy, with salmonberry, Oso-berry, Himalayan blackberry, red elderberry, and sword fern in the understory.



WRI identified one wetland in the northern portion of the site. The wetland is depressional with an intermittent outlet into a pipe that crosses under Harbour Pointe Blvd. The wetland appears to receive hydrology from roadside runoff and a high seasonal groundwater table. It is vegetated with red alder, Scouler's willow, salmonberry, Himalayan blackberry, stinging nettle, and reed canary grass. The wetland receives a total score of 14 points for functions on the 2014 DOE Wetland Rating Form. The wetland is therefore classified as a Category IV wetland. In the city of Mukilteo, Category IV wetlands receive maximum 40-foot buffers. No other critical areas were identified within 300 feet of the site.

#### **WETLAND CLASSIFICATION—COWARDIN SYSTEM**

According to the Cowardin System, as described in Classification of Wetlands and Deepwater Habitats of the United States, the classifications for the on-site wetland is as follows:

**Wetland A:** Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded.

#### **WETLAND CLASSIFICATION—CITY OF MUKILTEO**

Under the Mukilteo Municipal Code (MMC) for Wetland Regulations, Chapter 17B.52B, the on-site wetland is classified using the 2014 Washington State Department of Ecology's (DOE) Wetland Rating System for Western Washington (MMC 17B.52B.060; Hrubby 2014). Completed rating forms are provided in Appendix B of this report. Buffer widths were determined according to Table I within MMC17B.52B.070(E).

#### **Wetland A - Category IV**

Wetland A is a depressional wetland that receives a total score of 14 points for functions on the 2014 DOE Wetland Rating Form. Wetlands with a score between 9-15 points are classified as Category IV wetlands. This Category IV wetland shall be dedicated a 40-foot protective buffer according MMC17B.52B.

In the city of Mukilteo, regulated streams, wetlands and their buffers are designated collectively as Native Growth Protection Areas (NGPAs). All Native Growth Protection Areas shall be shown on the development site plans or final plat maps, and shall be noted as follows, per MMC 17.52.035:

*There shall be no clearing, excavation, or fill within the native growth protection area shown on the face of this site plan/plat, with the exception of required utility station, removal of dangerous trees, thinning of woodlands for the benefit of the woodlands as determined by a certified landscape architect or arborist, and removal of obstructions on drainage courses, or as allowed under Section 17.52A.070, Vegetation management on steep slopes.*

## **NATIVE GROWTH PROTECTION AREA SIGNS**

Signs designating the presence of the NGPA shall be posted along the NGPA boundary. Signs shall be placed at approximately 50-foot intervals around the perimeter of the NGPA. An example of Type 1 sign language is as follows:

**NATIVE GROWTH PROTECTION AREA**  
THIS WETLAND AND UPLAND BUFFER ARE PROTECTED TO  
PROVIDE WILDLIFE HABITAT AND MAINTAIN WATER QUALITY.  
PLEASE DO NOT DISTURB THIS VALUABLE RESOURCE.

\*SEE RECORDED PLAT FOR RESTRICTIONS

The signs shall be constructed of aluminum or similar durable material. They shall be secured to 4" x 4" x 7' (min.) pressure treated posts buried a minimum of two feet in quick setting concrete.

## **WETLAND DETERMINATION REPORT**

### **Methodology**

Wetland conditions were evaluated using the on-site, routine methodology described in the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), (referred as 2010 Regional Supplement). In general, wetland delineation consisted of two tasks: (1) assessing vegetation, soil, and hydrologic characteristics to identify areas meeting the wetland identification criteria, and (2) mapping wetland boundaries using aerial photography and existing survey information.

The following criteria descriptions were used in the boundary determination:

### **Vegetation Criteria**

#### *Wetland Vegetation Criteria*

The 2010 Regional Supplement defines hydrophytic vegetation as "the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence of the plant species present." Field indicators were used to determine whether the vegetation meets the definition for hydrophytic vegetation.

### **Soils Criteria and Mapped Description**

The National Technical Committee for Hydric Soils, as described in the 2010 Regional Supplement, defines hydric soils as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." Field indicators were used to determine whether a given soil meets the definition for hydric soils.

According to the Soil Survey of Snohomish County Area Washington, the underlying soils on the subject property consist of Alderwood Urban Land Complex 8 to 15 percent slopes.



Alderwood- Urban land complex, 8 to 15 percent slopes: This map unit is on till plains. This unit is about 60 percent Alderwood gravelly sandy loam and about 25 percent urban land. Included in this unit are small areas of Everett and Indianola soils on terraces and outwash plains, Kitsap soils on terraces and terrace escarpments, and Ragnar soils on outwash plains. Included areas make up about 15 percent of the total acreage.

The Alderwood soil is moderately deep over a hardpan and is moderately well drained. It formed in glacial till. Typically the surface layer is very dark grayish brown gravelly sandy loam about 7 inches thick. The upper part of the subsoil is dark yellowish brown and dark brown very gravelly sandy loam about 23 inches thick. A weakly cemented hardpan is at a depth of about 35 inches. Depth to the hardpan ranges from 20 to 40 inches. Permeability of this soil is moderately rapid above the hardpan and very slow through it. Available water capacity is low. Urban land consists of areas that are covered by streets, buildings, parking lots, and other structures that obscure or alter the soils so that identification is not possible.

### **Hydrology Criteria**

The 2010 Regional Supplement states that criteria for designation as a wetland based on hydrology is met when “areas are seasonally inundated and/or saturated to the surface for a consecutive number of days  $\geq 12.5$  percent of the growing season, provided that soil and vegetation parameters are met. Areas inundated or saturated between 5 and 12.5 percent of the growing season in most years may or may not be wetland. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands.” Field indicators are employed in the determination that wetland hydrology parameters are met.

## **BOUNDARY DETERMINATION FINDINGS**

### **Wetland A**

WRI conducted a site visit on April 11, 2016 to verify that conditions have not changed. The following is based on field data collected in 2012, but is similar to current conditions.

The on-site wetland is located in the northern portion of the property. Dominant vegetation within the wetland is represented by: red alder (*Alnus rubra*, Fac), Scouler’s willow (*Salix scouleriana*, FacW), salmonberry (*Rubus spectabilis*, Fac), Himalayan blackberry (*Rubus armeniacus*, Fac), lady fern (*Athyrium filix-femina*, Fac), reed canary grass (*Phalaris arundinacea*, FacW), and stinging nettle (*Urtica dioica*, Fac).

The underlying soils were very dark gray (10YR 3/1) sandy loam about 18 inches thick. The soils were saturated during our July 2012 and April 2016 site visits.

The dominance of species rated “Facultative” or wetter meets the criteria for hydrophytic vegetation in the areas mapped as wetland. Based on field indicators of hydric soils, it appears that the areas mapped as wetland are saturated to the surface for more than 12.5 percent of the growing season, thereby fulfilling wetland hydrology criteria.

## **Non-Wetland**

Typical vegetation found throughout the non-wetland areas of the site consists of red alder, big-leaf maple (*Acer macrophyllum*, FacU), black cottonwood (*Populus balsamifera*, Fac), salmonberry, Oso-berry (*Oemleria cerasiformis*, FacU), red elderberry (*Sambucus racemosa*, FacU), and western sword fern (*Polystichum munitum*, FacU).

The color of the soils sampled in the non-wetland areas are is very dark grayish brown (10YR 2/2) in the upper four to six inches with a dark yellowish brown (10YR 4/4, 10YR 3/4) in the sublayer. Soil texture throughout the profile is a sandy loam. The soils were slightly moist at the time of the site investigation.

Based on the lack of field indicators, it appears that areas of the site mapped as non-wetland are not saturated to the surface for more than 12.5 percent of the growing season, thereby not fulfilling wetland hydrology criteria.

## **FUNCTIONS AND VALUES ASSESSMENT**

### **Methodology**

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the on-site wetland and stream system, but is typical for assessments of similar systems common to Western Washington.

### **Value Assessment**

The on-site wetland is a depressional wetland with an intermittently flowing outlet. Wetlands with limited outflow retain water longer and allow for higher potential to perform hydrologic functions. This wetland appears to receive its hydrology from stormwater runoff and a seasonal high groundwater table. It appears to have some potential to provide valuable stormwater control functions for the surrounding areas.

The dense vegetation cover within this wetland combined with its highly depressional characteristic in an urban area result in moderately high water quality improvement functions within this wetland.

Habitat functions are limited within this wetland and the surround areas, due to the low connectivity to other diverse habitats. The subject wetland and its vegetated buffer to the south do provide some nesting and foraging opportunities. Based on the existing vegetation structure and plant diversity, it is highly likely that the site is used by a variety of small birds and mammals. However, the on-site wetland is unprotected to the north, and the overall level of habitat functions is relatively low.

## PROPOSED BUFFER AVERAGING PLAN

The applicant is proposing to construct a mosque with associated parking and an access driveway on the subject site. This is an allowed use for this property. The majority of the development will occur in the southern part of the site, away from the on-site wetland and buffer area. In order to gain access to the development area, the applicant will propose a buffer averaging plan pursuant to MMC17.52B.100.G.2(a-e). The total area of buffer to be reduced will amount to 2,172 square feet along the northeastern side of the property, while the total buffer area to be added will amount to 2,236 square feet.

Due to the location of the on-site wetland near the entrance to the site, permanent buffer reductions are unavoidable. The proposed driveway will be 20-feet wide and will parallel the eastern property line. There is no feasible alternative for access into the site that would result in less impact and that would achieve the same safety requirements. Placing the driveway as far as possible away from the wetland will minimize impacts to the greatest extent. The result is a minimum 20-foot wide buffer between a portion of the on-site wetland and the driveway, which is 50% of the standard 40-foot buffer. The applicant will construct the driveway out of suitable materials that are accepted or preferred by the City.

The vegetation to be impacted will include several red alder trees, a big leaf maple, and salmonberry, Oso berry, and sword fern in the understory. The buffer reduction will result in loss of potential habitat for a variety of small birds and mammals that may use the site. It will also result in reduced shade and protection for the wetland.

No impacts to hydrologic control functions within the on-site wetland are expected since no filling or direct discharge are proposed. Likewise, no long-term effects to water quality functions are expected if the driveway runoff is designed to sheet flow.

Short-term water quality improvement functions will be mitigated through installation of erosion control fencing along the boundaries of the proposed clearing areas.

While mostly vegetated with native understory species, the additional buffer area will benefit from enhancement with native tree species to increase the tree canopy cover in the southern buffer area. Therefore, the applicant will plant the list of trees recommended in this plan.

Enhancement plantings will be interspersed throughout the additional buffer to improve habitat complexity and diversity. The new tree plantings will improve screening and protection around the perimeter of the wetland, which ultimately benefit the habitat functions within the wetland. These assumptions are consistent with the guidelines provided in *Wetlands in Washington State - Volume 2: Guidance for Protecting and Managing Wetlands*. (Washington State Department of Ecology, 2005).

To summarize: no feasible alternative site design could be accomplished without buffer averaging; buffer averaging will not result in degradation of wetland functions and values; no net loss of buffer will result from buffer averaging; no more than fifty percent of the buffer will be reduced; and enhancement will ensure improvement to buffer functions in the long term. Based



on these anticipated conditions, the proposed buffer averaging plan complies with all requirements under MMC17.52B.100.G.2(a-e).

### **BUFFER ENHANCEMENT PLAN**

The applicant proposes to enhance the 2,236 square foot additional buffer area. Because the understory vegetation is currently intact, the designated areas will be enhanced with trees only on approximate 15-foot centers. The plantings will be shade tolerant and will be marked with brightly colored ribbon for easy identification during maintenance and monitoring. The following list of tree plantings is recommended for this site.

#### **Buffer Enhancement Planting Plan (2,236 SF)**

Common Name	Latin Name	Size	Spacing	Quantity
Western red cedar	<i>Thuja plicata</i>	1 gal	15'	4
Douglas fir	<i>Pseudotsuga menziesii</i>	1 gal	15'	3
Big-leaf maple	<i>Acer macrophyllum</i>	1 gal	15'	3

### **PROJECT GOALS AND OBJECTIVES**

The goals of this enhancement plan is to improve buffer functions by establishing a native tree canopy within the additional buffer areas. To achieve this, specific goals have been established and are listed below.

#### **Goal 1. Improve wetland buffer functions through vegetation enhancement.**

- **Objective 1.** Enhance 2,236 square feet of the on-site buffer.

#### **Goal 2. Permanently protect the on-site NGPA areas.**

- **Objective 1.** Install permanent signs to clearly mark the boundaries of the protected areas.

### **PLANTING NOTES**

Plant in the early spring or late fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some limited species substitution may be allowed, only with the agreement of the landscape designer, wetland biologist, and/or City staff.

**Handling:** Plants shall be handled to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect

plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species' horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 1 and March 1, and only with the permission of the landscape designer, wetland biologist, and City staff. Bare root plants must have enough fibrous root to insure plant survival. Roots must be covered at all times with mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

**Weeding:** Existing and exotic vegetation in the planting areas will be hand-weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation shall be used on this site.

**Planting Pits:** Planting pits shall be circular or square with vertical sides, and shall be 6" deeper and 12" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting down soils.

**Water:** Plants shall be watered midway through backfilling, and again upon completion of backfilling. For spring plantings (if approved), a rim of earth shall be mounded around the base of the tree or shrub no closer than the drip line, or no less than 30 inches in diameter, except on steep slopes or in hollows. Plants shall be watered a second time within 24-48 hours after installation. The earthen rim / dam should be leveled prior to the second growing season.

**Plant Location:** Three-foot by two-inch by one quarter-inch (3' x 2" x 1/4") lath stakes or suitable flagging material shall be placed next to or on each planting to assist in locating the plants while removing the competing non-native vegetation and to assist in locating the plants during the monitoring period.

**Arrangement and Spacing:** The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the landscape designer, wetland biologist, and/or City staff.

**Inspection(s):** A wetland biologist shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

**Mulch:** All landscaped areas denuded of vegetation and soil surface surrounding all planting pit areas shall receive no less than two to four inches of organic compost or certified weed free straw

after planting. Compost or certified weed free straw shall be kept well away (at least two inches) from the trunks and stems of woody plants.

### **Temporary Erosion and Sedimentation Control**

Prior to beginning any development or mitigation activities, erosion control fencing shall be installed as described in the grading plan construction drawings. A pre-construction meeting between the City, the consulting wetland professional, contractor and equipment operator(s) will be held prior to any construction activities to inspect the location of siltation fencing.

All sedimentation control facilities shall be kept in place and functioning until vegetation is firmly established. Refer to site engineer's TESC plan for all erosion and sedimentation control details.

## **PROJECT MONITORING PROGRAM**

### **Purpose for Monitoring**

A monitoring program shall be included as a part of the approved mitigation plan. To insure that the performance standards of the approved mitigation plan have been met, the mitigation and/or buffer enhancement site(s) shall be monitored for a minimum of five years. The monitoring period required by the city may be extended an additional two years if the wetland or buffer is not performing as expected by the mitigation or enhancement plan. The monitoring reports shall be submitted on August 1st of each year during the monitoring period.

For this project, the applicant may perform the annual monitoring under the guidance of an experience professional. The reports need to clearly document plant survival and presence of invasive vegetation. Photos should be included in the annual reports submitted to the City.

Monitoring and reports shall be submitted in accordance with the following schedule:

- (1) At the time of construction;
- (2) Thirty days after planting;
- (3) Early in the growing season of the first year;
- (4) End of the growing season of the first year;
- (5) Twice the second year (at the beginning and end of the growing season); and
- (6) Annually thereafter, to cover a total monitoring period of at least five growing seasons.

### **Performance Standards**

#### ***Year 1 Monitoring***

Success Standard: 100 percent survival of planted species  
No greater than 10 percent coverage of invasive species. Zero tolerance of noxious weeds.

#### ***Year 2 Monitoring***

Success Standard: 90 percent survival of planted species  
No greater than 10 percent coverage of invasive species. Zero tolerance of noxious weeds.

### **Year 3 Monitoring**

Success Standard: 80 percent survival of planted species  
No greater than 10 percent coverage of invasive species. Zero tolerance of Noxious weeds.

### **Year 5 Monitoring**

Success Standard: 80 percent survival of planted species  
No greater than 10 percent coverage of invasive species. Zero tolerance of noxious weeds.

### **Vegetation Monitoring**

Vegetation monitoring includes tallying live and dead enhancement plantings to measure survival rate, as well as estimations of invasive vegetation coverage. Qualitative reporting may include, but will not be limited to, a description of the health and appearance of the plantings.

### **Photo points**

Permanent photo points will be established within the enhancement areas. Photographs will be taken from these points to visually record condition of the enhancement area. Photos shall be taken annually between May 15 and November 1 (prior to leaf drop), unless otherwise specified.

### **Monitoring Reports**

Monitoring reports shall be submitted by November 1 of each year during the monitoring period. As applicable, monitoring reports include descriptions / data for:

- 1) Site plan and vicinity map.
- 2) Historic description of project, including date of installation, current year of monitoring, restatement of planting / restoration goals, and performance standards.
- 3) General appearance, health, mortality, colonization rates, percent survival, volunteer plant species, invasive weeds, and/or other components deemed appropriate by the Department and a qualified consultant.
- 4) Slope condition, site stability, any structures or special features.
- 5) Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures.
- 6) Wildlife Monitoring Methods shall include visual sightings, aural observations, nests, scat, tracks, and/or other means deemed appropriate by the Department and a qualified consultant. Wildlife monitoring components shall include species counts, species diversity, breeding activity, habitat type, nesting activity, location, usage, and/or other components deemed appropriate by the Department and a qualified consultant.
- 7) Assessment of nuisance / exotic biota and recommendations for management.
- 8) Color photographs (4" x 6" in size) taken from permanent photo-points that shall be depicted on the monitoring report map.

## **MAINTENANCE**

The planting areas will require periodic maintenance to remove undesirable species and replace vegetation mortality. Maintenance may include, but will not be limited to, removal of competing

grasses (by hand if necessary), irrigation, fertilization (if necessary), replacement of plant mortality, and the replacement of mulch for each maintenance period. Mulch should be replenished during the maintenance visits, every second year, or as needed.

### **CONTINGENCY PLAN**

If 20 percent of the plants are severely stressed during any of the inspections, or it appears 20 percent may not survive, additional plantings of the same species may be added to the planting area. Elements of a contingency plan may include, but will not be limited to: more aggressive weed control, pest control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

### **PROJECT COSTS**

The applicant shall enter into an agreement with the City to complete the mitigation plan approved by the City and shall post a mitigation surety to ensure mitigation is fully functional. The surety shall be in the amount of 150 percent of the estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the critical area that are at risk, whichever is greater. The surety shall be based on a cost estimate of installing the project with mitigation plant materials, and any other related costs. Following successful determination of the mitigation plan, the bond shall be released.

#### **Estimated Costs:**

*Estimated Cost of Plants (at \$10.50/plant)	\$105
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<b>Estimated Bond Amount (150% of Estimated Cost)</b>	<b>\$157.50</b>
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\*Estimate includes: cost of plant materials and labor per each one-gallon plant



## USE OF THIS REPORT

This Critical Area Study and Buffer Averaging Plan is supplied to Mohammed Khan as a means of determining on-site critical area conditions. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to critical areas are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect. The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.

*Wetland Resources, Inc.*



Andrea Bachman, PWS  
*Senior Ecologist*

## REFERENCES

City of Mukilteo Zoning Code, Title 17, (Ordinance 1305) March 21, 2016.

Cowardin, et al., 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior. FWS/OBS-79/31. December 1979.

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<http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

Lichvar, Tobert W. and J.T. Kartesz. 2012. National Wetland Plant List, Version 3.0. U.S. Army Corps of Engineers. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover NH and BONAP, Chapel Hill, NC.  
[http://wetland\\_plants.usace.army.mil](http://wetland_plants.usace.army.mil).

US Army COE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Vicksburg, MS

USFWS. National Wetlands Inventory (NWI) Online Mapper.  
<http://www.fws.gov/wetlands/Data/Mapper.html>.

WDFW. Priority Habitat and Species (PHS) Interactive Map.  
<http://apps.wdfw.wa.gov/phsontheweb/>.

Wetland name or number A

## RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wet A - ICOM Date of site visit: 4/11/16

Rated by AB Trained by Ecology? ☒ Yes ☐ No Date of training \_\_\_\_\_

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

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

Source of base aerial photo/map Google/SnoCo

**OVERALL WETLAND CATEGORY IV** (based on functions      or special characteristics     )

### 1. Category of wetland based on FUNCTIONS

     Category I – Total score = 23 - 27

     Category II – Total score = 20 - 22

     Category III – Total score = 16 - 19

☒ Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
Circle the appropriate ratings										
Site Potential	H	<input checked="" type="checkbox"/> M	L	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	
Landscape Potential	H	<input checked="" type="checkbox"/> M	L	<input checked="" type="checkbox"/> H	M	L	H	M	<input checked="" type="checkbox"/> L	
Value	H	M	<input checked="" type="checkbox"/> L	H	M	<input checked="" type="checkbox"/> L	H	<input checked="" type="checkbox"/> M	L	
Score Based on Ratings	5			5			4			TOTAL
									14	

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

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

### 2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

## Maps and figures required to answer questions correctly for Western Washington

### Depressional Wetlands

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

### Riverine Wetlands

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

### Lake Fringe Wetlands

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

### Slope Wetlands

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

## HGM Classification of Wetlands in Western Washington

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

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

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

**NO** – go to 2

**YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

**NO – Saltwater Tidal Fringe (Estuarine)**

**YES – Freshwater Tidal Fringe**

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

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

**NO** – go to 3

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

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;  
At least 30% of the open water area is deeper than 6.6 ft (2 m).

**NO** – go to 4

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

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

The wetland is on a slope (*slope can be very gradual*),  
The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,  
The water leaves the wetland **without being impounded**.

**NO** – go to 5

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

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

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

The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,  
The overbank flooding occurs at least once every 2 years.



Wetland name or number A

**NO – go to 6**

**YES – The wetland class is Riverine**

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

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

**NO – go to 7**

**YES – The wetland class is Depressional**

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

**NO – go to 8**

**YES – The wetland class is Depressional**

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

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

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

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

Wetland name or number A

### DEPRESSIONAL AND FLATS WETLANDS

#### Water Quality Functions - Indicators that the site functions to improve water quality

##### D 1.0. Does the site have the potential to improve water quality?

###### D 1.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- ☒ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

2

###### D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0

0

###### D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- ☒ Wetland has persistent, ungrazed, plants > 95% of area points = 5
- ☐ Wetland has persistent, ungrazed, plants > 1/2 of area points = 3
- ☐ Wetland has persistent, ungrazed plants > 1/10 of area points = 1
- ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0

5

###### D 1.4. Characteristics of seasonal ponding or inundation:

*This is the area that is ponded for at least 2 months. See description in manual.*

- ☐ Area seasonally ponded is > 1/2 total area of wetland points = 4
- ☒ Area seasonally ponded is > 1/4 total area of wetland points = 2
- ☐ Area seasonally ponded is < 1/4 total area of wetland points = 0

2

Total for D 1

Add the points in the boxes above

9

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

##### D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	2

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

##### D 3.0. Is the water quality improvement provided by the site valuable to society?

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

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


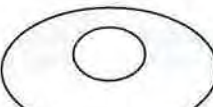




This small, shallow, depressional wetland is located adjacent to the south side of Harbour Pointe Blvd. It's outlet is a pipe that drains into a catch basin. This wetland is in the upper part of the Picnic Point drainage basin. No 303(d) listed water or TMDL is list for this basin.

Wetland name or number A

<b>DEPRESSIONAL AND FLATS WETLANDS</b>		
<b>Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation</b>		
<b>D 4.0. Does the site have the potential to reduce flooding and erosion?</b>		
<b>D 4.1. Characteristics of surface water outflows from the wetland:</b> <input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 <input checked="" type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 <input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 <input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0		<b>2</b>
<b>D 4.2. Depth of storage during wet periods:</b> Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. <input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 <input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 <input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 <input type="checkbox"/> The wetland is a "headwater" wetland points = 3 <input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water points = 1 <input checked="" type="checkbox"/> Marks of ponding less than 0.5 ft (6 in) points = 0		<b>0</b>
<b>D 4.3. Contribution of the wetland to storage in the watershed:</b> Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. <input type="checkbox"/> The area of the basin is less than 10 times the area of the unit points = 5 <input checked="" type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit points = 3 <input type="checkbox"/> The area of the basin is more than 100 times the area of the unit points = 0 <input type="checkbox"/> Entire wetland is in the Flats class points = 5		<b>3</b>
Total for D 4		<b>5</b>
<b>Rating of Site Potential</b> If score is: <u>12-16</u> = H <u>6-11</u> = M <u>✓ 0-5</u> = L <span style="float: right;">Record the rating on the first page</span>		
<b>D 5.0. Does the landscape have the potential to support hydrologic functions of the site?</b>		
D 5.1. Does the wetland receive stormwater discharges?		<b>1</b>
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		<b>1</b>
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?		<b>1</b>
Total for D 5		<b>3</b>
<b>Rating of Landscape Potential</b> If score is: <u>✓ 3</u> = H <u>1 or 2</u> = M <u>0</u> = L <span style="float: right;">Record the rating on the first page</span>		
<b>D 6.0. Are the hydrologic functions provided by the site valuable to society?</b>		
<b>D 6.1. The unit is in a landscape that has flooding problems.</b> Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): <input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 <input type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 <input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. points = 1 <input checked="" type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ points = 0 <input type="checkbox"/> There are no problems with flooding downstream of the wetland. points = 0		<b>0</b>
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		<b>0</b>
Total for D 6		<b>0</b>
<b>Rating of Value</b> If score is: <u>2-4</u> = H <u>1</u> = M <u>✓ 0</u> = L <span style="float: right;">Record the rating on the first page</span>		



Wetland name or number A

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

Wetland name or number A

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

**Rating of Site Potential** If score is: 15-18 = H 7-14 = M ☒ 0-6 = L

Record the rating on the first page

H 2.0. Does the landscape have the potential to support the habitat functions of the site?		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>1</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>1</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> &gt; 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> &lt; 10% of 1 km Polygon points = 0</p>		<b>0</b>
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>27</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>27</u> %</p> <p><input type="checkbox"/> Undisturbed habitat &gt; 50% of Polygon points = 3</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and &gt; 3 patches points = 1</p> <p><input type="checkbox"/> Undisturbed habitat &lt; 10% of 1 km Polygon points = 0</p>		<b>1</b>
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input checked="" type="checkbox"/> &gt; 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>		<b>-2</b>
Total for H 2	Add the points in the boxes above	<b>-1</b>

**Rating of Landscape Potential** If score is: 4-6 = H 1-3 = M ☒ < 1 = L

Record the rating on the first page

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

**Rating of Value** If score is: 2 = H ☒ 1 = M 0 = L

Record the rating on the first page



Wetland name or number A

## WDFW Priority Habitats

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

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

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

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

Wetland name or number A

### CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
<b>SC 1.0. Estuarine wetlands</b> Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt <div style="text-align: right; margin-top: 5px;">             Yes – Go to <b>SC 1.1</b>    <span style="border: 1px solid black; padding: 2px;">No = Not an estuarine wetland</span> </div>	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? <div style="text-align: right;">             Yes = <b>Category I</b>    No - Go to <b>SC 1.2</b> </div>	<b>Cat. I</b>
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. <div style="text-align: right; margin-top: 5px;">             Yes = <b>Category I</b>    No = <b>Category II</b> </div>	<b>Cat. I</b>  <b>Cat. II</b>
<b>SC 2.0. Wetlands of High Conservation Value (WHCV)</b> SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? <div style="text-align: right;">             Yes – Go to <b>SC 2.2</b>    <span style="border: 1px solid black; padding: 2px;">No – Go to SC 2.3</span> </div> SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? <div style="text-align: right;">             Yes = <b>Category I</b>    <span style="border: 1px solid black; padding: 2px;">No = Not a WHCV</span> </div> SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? <a href="http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf">http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf</a> <div style="text-align: right;">             Yes – <b>Contact WNHP/WDNR and go to SC 2.4</b>    No = <b>Not a WHCV</b> </div> SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? <div style="text-align: right;">             Yes = <b>Category I</b>    No = <b>Not a WHCV</b> </div>	<b>Cat. I</b>
<b>SC 3.0. Bogs</b> Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? <div style="text-align: right;">             Yes – Go to <b>SC 3.3</b>    <span style="border: 1px solid black; padding: 2px;">No – Go to SC 3.2</span> </div> SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? <div style="text-align: right;">             Yes – Go to <b>SC 3.3</b>    <span style="border: 1px solid black; padding: 2px;">No = Is not a bog</span> </div> SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? <div style="text-align: right;">             Yes = <b>Is a Category I bog</b>    No – Go to <b>SC 3.4</b> </div> <b>NOTE:</b> If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? <div style="text-align: right;">             Yes = <b>Is a Category I bog</b>    No = <b>Is not a bog</b> </div>	<b>Cat. I</b>

Wetland name or number A

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

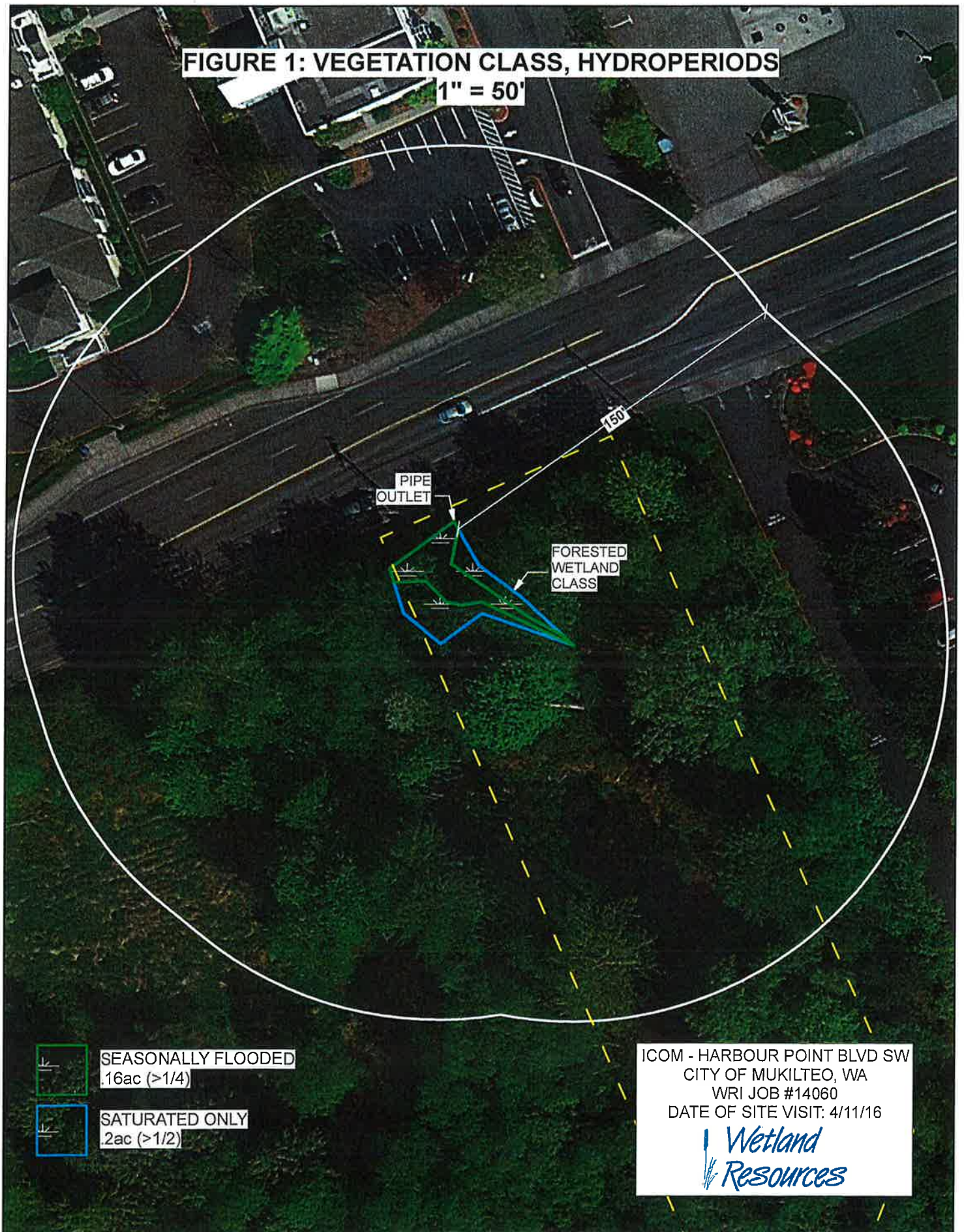
Wetland name or number **A**

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**FIGURE 1: VEGETATION CLASS, HYDROPERIODS**

1" = 50'





**FIGURE 2: CONTRIBUTING BASIN**

1" = 100'

APPROX. BNDY. OF  
CONTRIBUTING BASIN.  
94 TIMES THE SIZE OF  
THE WETLAND

City of Mukilteo

ICOM - HARBOUR POINT BLVD SW  
CITY OF MUKILTEO, WA  
WRI JOB #14060  
DATE OF SITE VISIT: 4/11/16

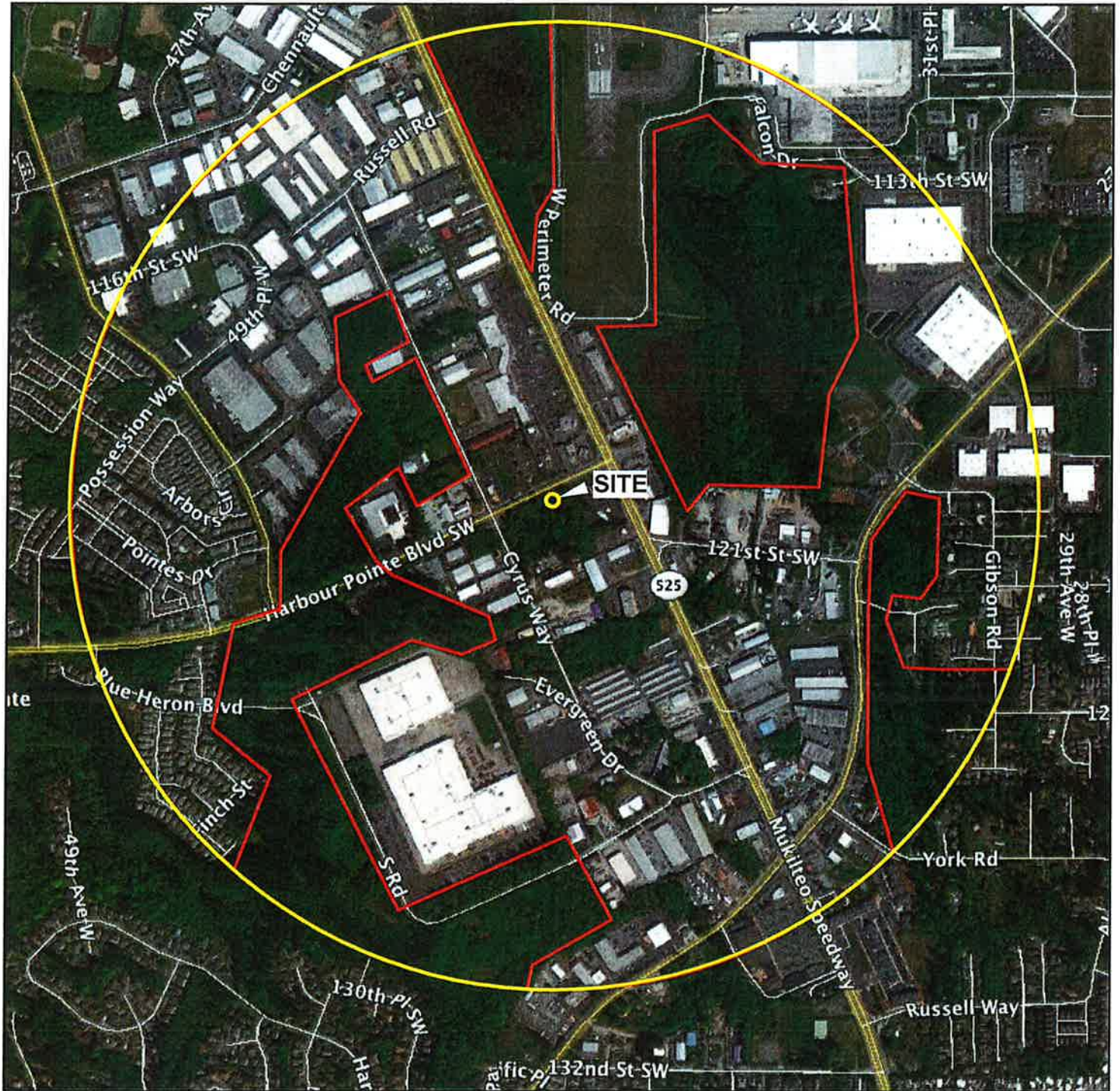
*Wetland  
Resources*

slope > 33% and >= 10-ft elev change

slope > 33% and >= 10-ft elev change



**FIGURE 3: 1-KM RADIUS**  
**1" = 1,000'**

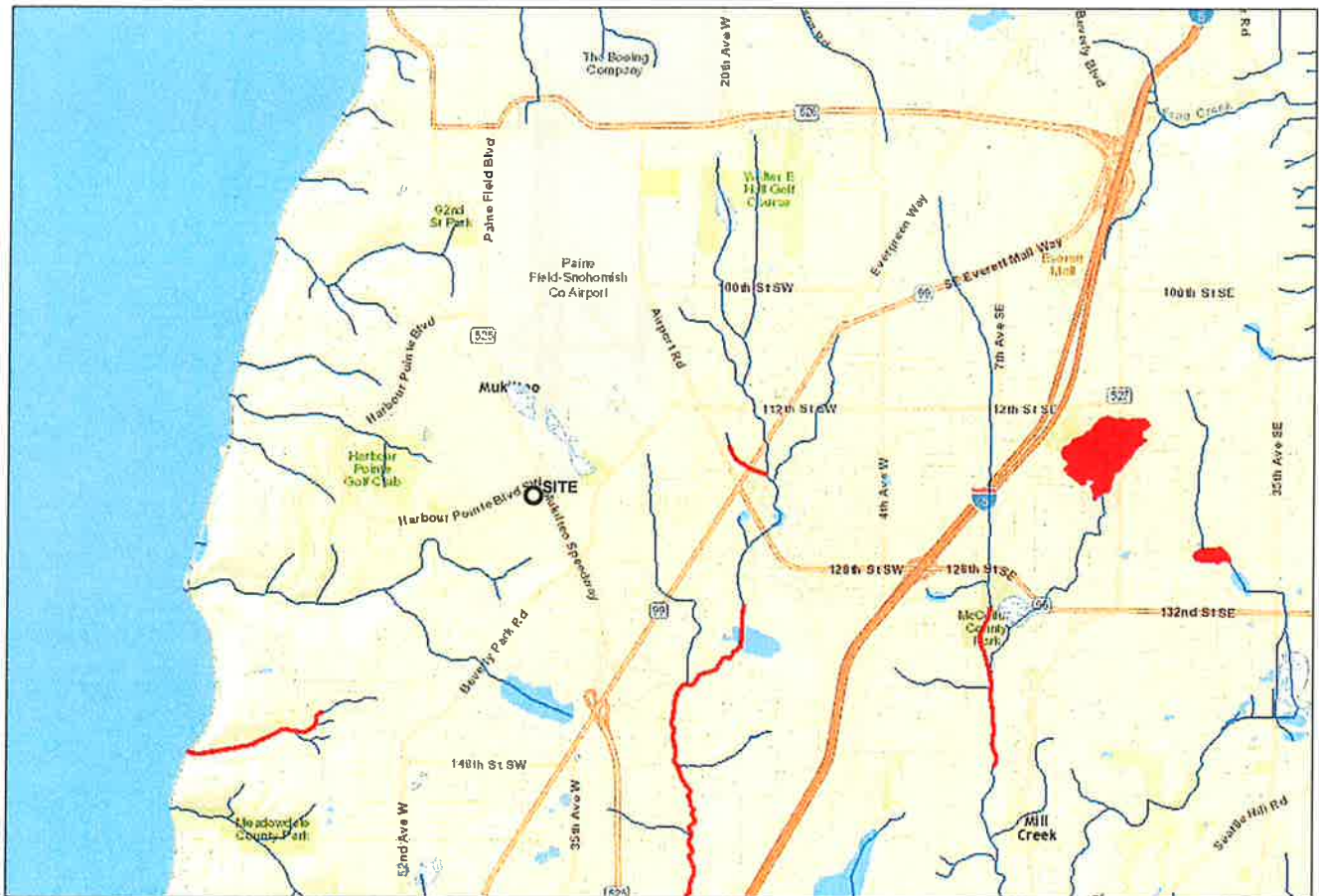


ICOM - HARBOUR POINT BLVD SW  
CITY OF MUKILTEO, WA  
WRI JOB #14060  
DATE OF SITE VISIT: 4/11/16

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**FIGURE 4:**  
**Screen capture of map of 303(d) listed waters in basin**



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WRI JOB #14060  
DATE OF SITE VISIT: 4/11/16

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**FIGURE 5:**  
**Screen capture of list of TMDLs for WRIA 8**

**WRIA 8: Cedar-Sammamish**

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

**Counties**

- [King](#)
- [Snohomish](#)



Waterbody Name	Pollutants	Status**	TMDL Lead
<a href="#">Ballinger Lake</a>	Total Phosphorus	Approved by EPA	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Bear-Evans Creek Basin</a>	Fecal Coliform	Approved by EPA	<a href="#">Joan Nolan</a> 425-649-4425
	Dissolved Oxygen Temperature	Approved by EPA	
<a href="#">Cottage Lake</a>	Total Phosphorus	Approved by EPA Has an implementation plan	<a href="#">Tricia Shoblom</a> 425-649-7288
<a href="#">Issaquah Creek Basin</a>	Fecal Coliform	Approved by EPA	<a href="#">Joan Nolan</a> 425-649-4425
<a href="#">Little Bear Creek</a> Tributaries:  Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	<a href="#">Ralph Svricek</a> 425-649-7036
<a href="#">North Creek</a>	Fecal Coliform	Approved by EPA Has an implementation plan	<a href="#">Ralph Svricek</a> 425-649-7036
<a href="#">Pipers Creek</a>	Fecal Coliform	Approved by EPA	<a href="#">Joan Nolan</a> 425-649-4425
<a href="#">Sammamish River</a>	Dissolved Oxygen Temperature	Field work starts summer 2015	<a href="#">Ralph Svricek</a> 425-649-7036
<a href="#">Swamp Creek</a>	Fecal Coliform	Approved by EPA Has an implementation plan	<a href="#">Ralph Svricek</a> 425-649-7036

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

ICOM HARBOUR POINT BLVD SW  
CITY OF MUKILTEO, WA  
WRI JOB #14060  
DATE OF SITE VISIT: 4/11/16

*Wetland  
Resources*

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

Project/Site: Moy Property - Harbour Pnt Blvd City/County: Mukilteo/Snohomish Sampling Date: 7/3/2012  
 Applicant/Owner: RAD Development, LLC State: WA Sampling Point: S1  
 Investigator(s): S. Brainard & A. Bachman Section, Township, Range: S27, T28, R04E  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1%  
 Subregion (LRR): LRR-A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood Urban Land Complex 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks:	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
1. <u>Alnus rubra</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Salix scouleriana</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	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 = _____
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ____ Dominance Test is >50% ____ Prevalence Index is ≤3.0 <sup>1</sup> ____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ____ Wetland Non-Vascular Plants <sup>1</sup> ____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____	<u>70</u>	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. <u>Rubus spectabilis</u>	<u>60</u>	<u>Y</u>	<u>FAC+</u>	
2. <u>Rubus armeniacus</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Remarks:
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____	<u>70</u>	_____	= Total Cover	
Herb Stratum (Plot size: _____)				Remarks:
1. <u>Phalaris arundinacea</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Urtica dioica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____	<u>25</u>	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____	_____	_____	= Total Cover	
% Bare Ground in Herb Stratum _____				



Sampling Point: S1

## HYDROLOGY

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

US Army Corps of Engineers

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

Project/Site: Moy Property - Harbour Pnt Blvd City/County: Mukilteo/Snohomish Sampling Date: 7/3/2012  
 Applicant/Owner: RAD Development, LLC State: WA Sampling Point: S2  
 Investigator(s): S. Brainard & A. Bachman Section, Township, Range: S27, T28, R04E  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): <1%  
 Subregion (LRR): LRR-A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Alderwood Urban Land Complex 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)
1. <u>Alnus rubra</u>	<u>55</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Acer macrophyllum</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Populus balsamifera</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. _____	<u>90</u>		= Total Cover	<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. <u>Rubus spectabilis</u>	<u>45</u>	<u>Y</u>	<u>FAC+</u>	
2. <u>Rubus armeniacus</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Oemleria cerasiformis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. <u>Sambucus racemosa</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	<u>85</u>		= Total Cover	
<b>Herb Stratum (Plot size: _____)</b>				
1. <u>Polystichum munitum</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____	<u>10</u>		= Total Cover	
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

**SOIL** Sampling Point: S2

Sampling Point: S2

HYDROLOGY

## Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>	<u>Secondary Indicators (2 or more required)</u>
---	--

### Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

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

**Field Observations:**

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

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

Saturation Present? Yes \_\_\_\_\_ No ☒ Depth (inches): \_\_\_\_\_

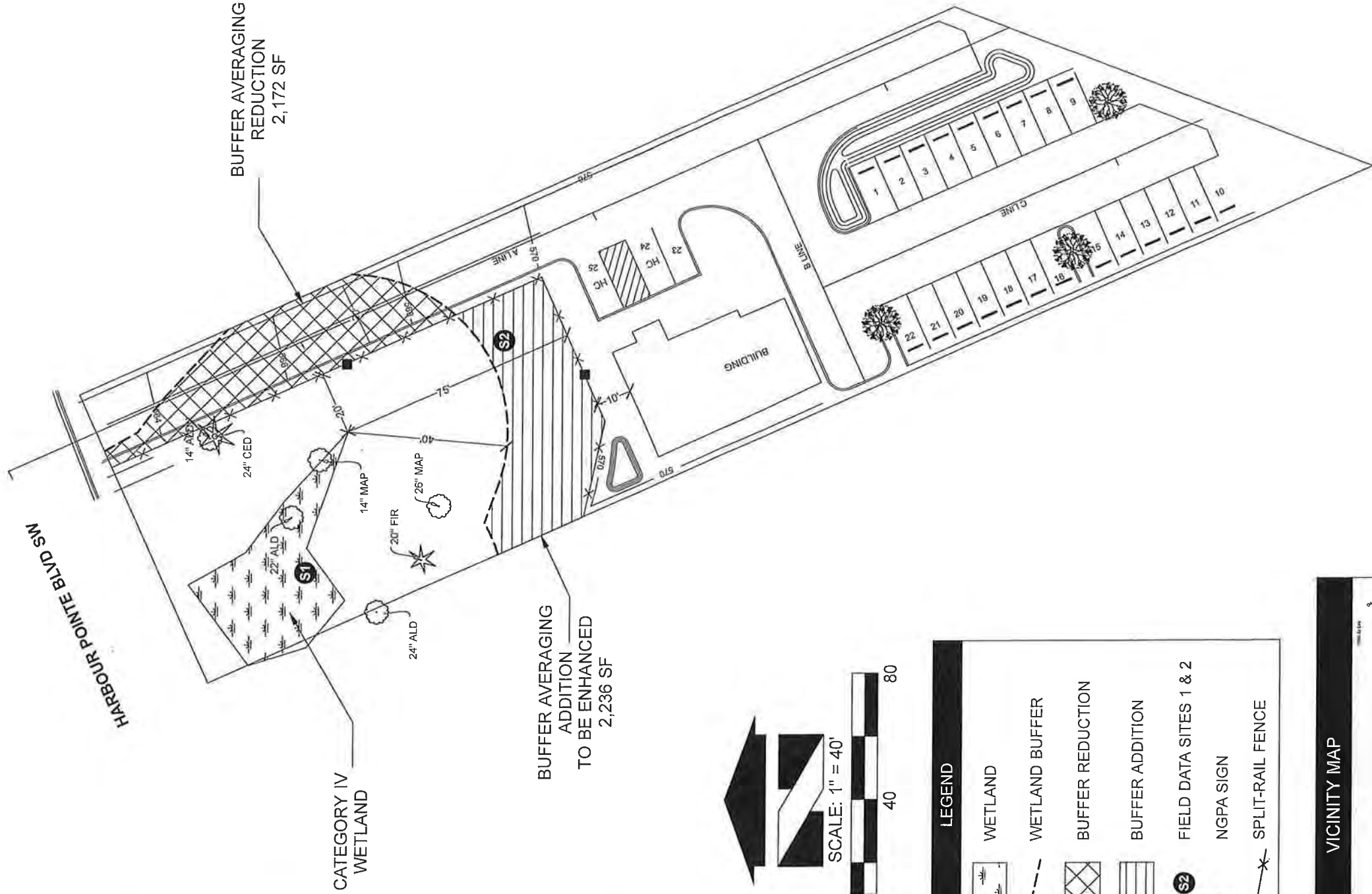
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

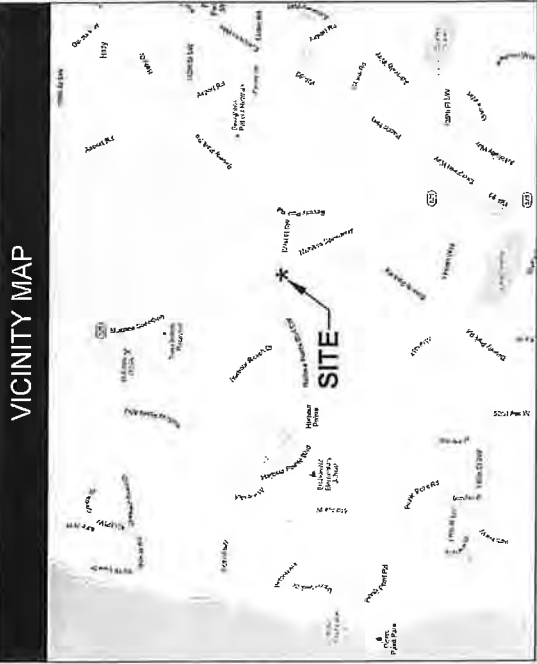
Remarks:

CRITICAL AREA STUDY MAP WITH BUFFER AVERAGING PLAN  
**ICOM - HARBOUR POINTE BLVD SW**  
PORTION OF SECTION 27, TOWNSHIP 28, RANGE 04E, WM



**LEGEND**

	WETLAND
	WETLAND BUFFER
	BUFFER REDUCTION
	BUFFER ADDITION
	FIELD DATA SITES 1 & 2
	NGPA SIGN
	SPLIT-RAIL FENCE



**Wetland Resources, Inc.**  
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance  
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CRITICAL AREA STUDY MAP WITH  
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