Critical Areas Report

MERCER ISLAND SIMPSON PROJECT

CITY OF MERCER ISLAND

May 2022

Prepared for:

City of Mercer Island
Community Planning and Development
9611 SE 36th Street
Mercer Island, WA 98040

Prepared on behalf of (applicant):

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THE WATERSHED COMPANY

Title-page image: Existing maintained lawn along Lake Washington shoreline.

THE WATERSHED COMPANY

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Senior Ecologist

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1 Introduction

This critical area study is prepared as part of a proposal to permit reconstruction and expansion of single-family residence located at 6454 E. Mercer Way in Mercer Island, Washington (parcel 3024059118).

The property is situated along the Lake Washington shoreline. There is one Category IV, slope wetland on the property. This report is intended to satisfy the requirements of the Mercer Island City Code (MICC) and Shoreline Master Program (SMP). It provides a description of existing site conditions, proposed improvements, proposed buffer modification, shoreline enhancement, and mitigation sequencing to ensure no net loss of shoreline, wetland, or buffer ecological functions.

2 Methods

Ecologists from The Watershed Company conducted a site inspection and delineation on July 30, 2021. The study area, which includes the subject property and the adjacent property to the north (parcel #3024059003), was evaluated for wetlands using methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement) (US Army Corps of Engineers [Corps] May 2010). Identified wetlands were classified according to the *2014 Western Washington Wetland Rating System* (Ecology Publication 14-06-029).

The study area was evaluated for streams and shorelines based on the presence or absence of an ordinary high water mark (OHWM) as defined by Section 404 of the Clean Water Act, the Washington Administrative Code (WAC) 220-660-030, and the Revised Code of Washington (RCW) 90.58.030 and guidance documents including *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson 2016) and *A Guide to Ordinate High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mersel 2016).

Characterization of climatic conditions for precipitation was determined using the WETS table methodology from the USDA NRCS document Part 650 Engineering Field Handbook, National Engineering Handbook, Hydrology Tools for Wetland Identification and Analysis, Chapter 19 (September 2015). The Seattle-Tacoma International AP station as recorded by NOAA (http://agacis.rcc-acis.org/) was used as a source for precipitation data. The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present.

3 Existing Conditions

The study area is within the Mercer Island sub-basin of the Cedar-Sammamish Watershed (WRIA 8). It is located in southern Mercer Island, just east of Pioneer Park. The property is situated on the shore of Lake Washington. The site gradually slopes down to the east towards Lake Washington.

The subject property is approximately 0.47 acres in size and is developed with a single-family home, brick patio, associated driveway, dock, and a maintained yard (Figure 1). The northern property boundary is densely vegetated with western red cedar, shore pine, bamboo, rhododendrons, cherry laurel, and ornamental shrubs. The southern property boundary is vegetated with sedges, maintained ornamental shrubs, western red cedar, and coast redwood. The neighboring property to the north consists of a single-family home, landscaped areas, wooden walkways, a dock, and an extended yard that gradually slopes to the east toward the Lake Washington shoreline. Similarly, the subject property, the lawn is maintained up to a border of dense vegetation along the northern and southern property boundaries. Although both yards are regularly mowed, hydrophytic vegetation within the lawn, including obligate wetland plant species, persists on both properties. The slope wetland extends throughout the majority of both rear yards.

Figure 1. Subject property, existing residence, facing west

Reviewed public-domain information for the site is summarized below (Table 1).

Table 1. Summary of On-line Mapping and Inventory Resources

Resource	Summary
USDA NRCS: Web Soil Survey	*Kitsap silt loam, 2 to 8 percent slopes is mapped throughout the study area.*
USFWS: NWI Wetland Mapper	*None mapped on the subject property (parcel #3024059118). A freshwater emergent wetland (PEM1C) is mapped in the eastern portion of neighboring property (parcel #3024059003). Lake Washington (L1UBHh) is mapped along the eastern property boundary. A riverine habitat (R4SBC) is mapped approximately 275 feet south of the subject property.*
WDFW: SalmonScape	*Lake Washington mapped with resident coastal cutthroat, kokanee, fall Chinook, winter steelhead, Dolly Varden / bull trout, sockeye and coho presence.*
WDFW: PHS on the Web	*A freshwater emergent wetland (PEM1C) is mapped approximately 10 feet north of the subject property. Pioneer Park is a biodiversity area and corridor mapped approximately 500 feet west of the subject property. Lake Washington mapped with sockeye, steelhead, coho, and Chinook salmon occurrence.*
WA-DNR: Forest Practices Activity Mapping Tool	*Lake Washington mapped as a Shoreline of the State. A Type-F stream is mapped approximately 500 feet south of the subject property.*
King County iMap	*None mapped onsite.*
City of Mercer Island maps	*None mapped onsite.*
WETS Climatic Condition	*Normal.*

3.1 Wetlands

The western boundary of one slope wetland (Wetland A) was delineated and flagged in the study area and summarized in Table 2.

Table 2. Wetland A assessment summary.

WETLAND A – Assessment Summary

Location:	Lawn adjacent to Lake Washington shoreline on parcels #302405-9118 and -9003
WRIA / Sub-basin:	Cedar-Sammamish River Watershed (WRIA 8) / Mercer Island Drainage Basin

2014 Western WA Ecology Rating:	Category IV
Buffer Width and Buffer Setback:	100 feet
Wetland Size:	Approx. 0.44 acres
Cowardin Classification(s):	Palustrine Emergent
HGM Classification(s):	Slope
Wetland Data Sheet(s):	DP-1, DP-2, DP-3, DP-5
Upland Data Sheet (s):	DP-4, DP-6
Flag Color:	Pink- and black-striped
Flag Numbers:	A-1 to A-16

Vegetation	Tree stratum:	*Thuja plicata*
	Shrub stratum:	*Physocarpus capitatus, Rubus spectabilis,*
	Herb stratum:	*Scirpus microcarpus, Juncus effusus, Athyrium felix-femina, Iris pseudacorus*
Soils	Soil survey:	Kitsap silt loam, 2 to 8 percent slopes.
	Field data:	Sandy Redox (S5), Depleted Matrix (F3), Sandy Gleyed Matrix (S4)
Hydrology	Source:	Lake Washington, High Water Table
	Field data:	Saturation (A3), Geomorphic Position (D2), FAC-Neutral Test (D5)

Wetland Functions

	Improving Water Quality			Hydrologic			Habitat			
Site Potential	H	M	**L**	H	M	**L**	H	M	**L**	
Landscape Potential	H	**M**	L	H	**M**	L	H	**M**	L	
Value	**H**	M	L	H	M	**L**	H	**M**	L	**TOTAL**
Score Based on Ratings	6			4			5			15

Description and Comments

Wetland A is a slope wetland located on two maintained lawns along the Lake Washington shoreline.

3.2 Lake Washington

The subject property is located along the Lake Washington shoreline. The shoreline consists of beach gravels that transition to maintained lawn. A small timber bulkhead is located north of a wood-decked boardwalk and pier (Figure 2). The majority of the riparian vegetation is a maintained extension of the backyard, with the exception of some untrimmed yellow flag iris, tall horsetail, sedges, soft rush, birds foot trefoil, and Japanese knotweed.

Figure 2. View of Lake Washington shoreline, the maintained lawn, and wooden boardwalk and pier.

3.3 Non-wetlands

Areas outside of observed wetlands do not meet criteria for wetland hydrophytic vegetation, hydric soils, and/or wetland hydrology. Non-wetland areas are located west of the maintained lawns, including the residential homes, paved driveways, and forested slopes. Vegetation includes giant sequoia, Douglas-fir, big-leaf maple, rhododendrons, cherry laurel, western sword fern, English ivy, Japanese knotweed, and other ornamental species (Figure 3).

Figure 3. Existing upland conditions along access drive

4 Project Purpose and Approach

The proposed development includes demolition, reconstruction, and expansion of an existing residence. The total additional building area, including upper story, comprises 3,468 square feet. The existing residence is located entirely within the standard 100-foot shoreline wetland buffer and mostly within the 40-foot proposed buffer. The reconstructed residence will not encroach any farther towards Wetland A; all expansions are located on the backside of the existing structure or within/above the existing footprint.

In order to allow the proposed development, the applicant proposes to apply the standard 40-foot buffer for Wetland A under MICC 19.07.190(C)1 by implementing the impact minimization measures under MICC 19.07.190(D)2. This will allow for no new structural expansion within the Wetland A buffer. Proposed buffer impacts will result from structural expansion within the existing building setback, which will result in the conversion of 167 square feet of buffer to building setback. This area will be mitigated at a 1:1 ratio. An additional 1,323 square feet of buffer will be planted with a dense, native hedge row in order to prevent future intrusions into the remaining 40-foot wetland buffer area. Temporary wetland buffer and building setback impacts will be restored in place.

The project also proposes enhancing 1,668 square feet of the 2,224 square feet of shoreline within 20 feet of the lake OHWM (75 percent of the total area within 20 feet of the OHWM); this includes portions of Wetland A and its buffer.

5 Regulations

Projects located within 200 feet of shorelines of the state (Lake Washington) are regulated under the Mercer Island Shoreline Master Program (MICC 19.13) (SMP). The subject property is designated Urban Residential under the SMP. Single-family residences, including appurtenant features, in the Urban Residential shoreline designation are allowed as a Shoreline Exemption. All structures in the shoreline zone must be set back at least 25 feet from the OHWM. The maximum impervious surface coverage allowed is 10% between 0 and 25 feet from the OHWM and 30% between 25 and 50 feet from the OHWM (MICC 19.13.050[A], Table C).

Under MICC 19.13.050(K)4, new development of more than 1,000 square feet of additional impervious surfaces within shoreline jurisdiction shall be required to also provide native vegetation coverage over 75 percent of the 20-foot vegetation area immediately above the OHWM.

As a shoreline-associated wetland, Wetland A is also regulated under the SMP. Under SMP (MICC 19.13.10[D]6), if the applicable minimizing measures listed in MICC 19.07.190(D)(3) are not implemented, the standard buffer for a Category IV wetland with three habitat points is 100 feet. If the minimization measures are implemented, then the wetland buffers under MICC 19.07.190(C) may be applied. The standard buffer for a Category IV wetland under MICC 19.07.190(C) is 40 feet. A 10-foot BSBL applies beyond all wetland buffers.

Compliance with the minimization measures is discussed in Table 3 below.

Table 3. Measures to Minimize Potential Wetland Impacts

Disturbance	Potential Measures to Minimize Impacts	Project Application
Lights	Direct lights away from wetland.	Lights will be directed away from the wetland. Outdoor lighting will be directed towards the house or down.
Noise	Locate activity that generates noise away from wetland. If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source.	The primary noise-generating component will be the driveway and garage. These components will be on the back side of the residence, farthest from Wetland A. Portions of Wetland A and its buffer will be enhanced with native

Disturbance	Potential Measures to Minimize Impacts	Project Application
	For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-foot heavily vegetated buffer strip immediately adjacent to the outer wetland buffer.	trees shrubs and groundcovers, providing additional noise buffering. The single-family residential development will not constitute continuous, disruptive noise.
Toxic runoff	Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered Establish covenants requiring the use of integrated pest management techniques to limit the use of pesticides within 150 feet of wetland	Stormwater runoff will be directed away from the wetland and buffer. All roof and driveway runoff will be directed to the existing tightline system that discharges to Lake Washington. Driveway runoff will be directed through an oil/water separator prior to discharge. Wetland hydrology is provided by hyporheic flow from Lake Washington and a high groundwater table. The property development will not affect wetland hydrology. The shoreline mitigation plan does not allow the use of pesticides.
Storm water runoff	Retrofit storm water detention and treatment for roads and existing adjacent development. Prevent channelized flow from lawns that directly enters the buffer. Use low impact development techniques.	The project will include replacement of part of the existing stormwater system, which no longer functions correctly. Roof runoff will go to the standard tight line system and discharge into Lake Washington. Driveway runoff will through a standard oil water separator and then to tight line to lake.
Changes in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns.	Runoff will be routed to the existing, stormwater system, which tightlines runoff to Lake Washington. A vegetated buffer will remain between the new structure and Wetland A/Lake Washington, which will allow for dispersion and infiltration for any runoff not captured by the stormwater system.
Pets and human disturbance	Protect wetlands and associated buffers with conservation or native growth protection easements.	As an existing, single-family residence, placing the wetland/buffer into a conservation easement is unwarranted. The wetland and buffer will be protected by the Mercer Island

Disturbance	Potential Measures to Minimize Impacts	Project Application
		CAO and SMP in perpetuity. An additional barrier to human and pet intrusion will be installed in the form of a dense native hedge row along the edge of the building setback line and a path that allows for continued access of the existing dock. All other areas within the wetland and buffer will be effectively blocked from human and pet intrusion.
Dust	Use best management practices to control dust.	Not applicable. The completed project will not generate elevated levels of dust.
Disruption of corridors or connections	Maintain connections to off-site areas that are undisturbed. Restore corridors or connections to off-site habitats by replanting.	Wetland A will have a vegetated corridor connecting to Lake Washington. The wetland/shoreline area and a portion of the buffer will be enhanced with native vegetation.

Under MICC 19.13.020B: "*Expansions of legal nonconforming overwater structures and structures upland 25 feet from the OHWM are permitted; provided, that the expanded portion of the structure is constructed in compliance with this chapter and all other standards and provisions of the Mercer Island development regulations, including this chapter*." By association, under MICC 19.07.130, *addition to or reconstruction of an existing legally established structure or building within a critical area and/or buffer constructed on or before January 1, 2005, provided the following criteria are met:*

1. *The seasonal limitations on land clearing, grading, filling, and foundation work described in section 19.07.160(F)(2) shall apply.*

   The project will comply with all applicable seasonal limitations.

2. *Additions shall be allowed if all of the following criteria are met:*

   a. *The structure is enlarged not more than a cumulative total of 200 square feet larger than its footprint as of January 1, 2005;*

      The structure will not be expanded within the 40-foot wetland buffer. Buffer impacts will be limited to conversion of a portion of the existing buffer to building setback, due to modifications within the existing building setback. A total of 167 square feet of buffer will be converted to building setback.

b. *If the existing, legally established structure is located over or within a wetland or watercourse, no further expansion within the wetland or watercourse is allowed;*

   Not applicable. The existing structure is not located within a wetland or watercourse.

c. *If the existing legally established structure is located within a wetland or watercourse buffer, the addition may be no closer to the wetland or watercourse than a distance equal to 75 percent of the applicable standard buffer and must also be no closer to the watercourse or wetland than the existing structure;*

   The structure will not be expanded within the wetland buffer.

d. *A critical area study approved by the city demonstrates that impacts have been avoided or minimized and mitigated consistent with section 19.07.100, mitigation sequencing;*

   This report addressed mitigation sequencing (See Section 6).

e. *If the modification or addition is proposed within a geologically hazardous area or associated buffer, a qualified professional provides a statement of risk consistent with section 19.07.160(B)(3).*

   To our knowledge, the project is not located within a geologically hazardous area or buffer. However, The Watershed Company does not provide geotechnical analysis.

6 Mitigation Sequencing

Under MICC 19.07.100, development proposals must demonstrate mitigation sequencing per the following:

1. *Avoiding the impact altogether by not taking a certain action or parts of an action.*

   The project avoids all impacts to the shoreline buffers and Wetland A. By applying the minimization measures under MICC 19.07.190(D)(3), the project will avoid all new structural impacts to the 40-foot Wetland A buffer.

2. *Minimizing impacts by limiting the degree or magnitude of the action and its implementation.*

   The project is designed such that no new structural elements are located within the 40-foot wetland buffer. Permanent impacts have been minimized such that the only impacts are from a modification of the building setback, which results in a conversion of a portion of the buffer to building setback.

3. *Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.*

   All temporary construction impacts within the buffer and building setback will be restored in kind, including 74 square feet of temporary buffer impacts and 274 square feet of temporary building setback impacts.

4. *Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.*

   A dense, native hedge row will be installed along the edge of the building setback and along a footpath to the existing dock. This will preclude human and pet intrusions into the remaining portions of the wetland and wetland buffer and will preserve these areas from routine traffic and maintenance.

5. *Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.*

   The buffer area converted to building setback will be mitigated by enhancing an equivalent area of degraded buffer through the installation of a dense, native plant community. When combined with the native hedge row, the mitigation to impact area will be approximately 8.9:1.

6. *Monitoring the impact and taking appropriate corrective measures to maintain the integrity of compensating measures.*

   The mitigation and shoreline enhancement areas will be monitored and maintained for five years.

7 Impact Assessment

The proposal is for demolition and reconstruction of an existing single-family residence and associated improvements. The project will enhance the shoreline zone, Wetland A, and a portion of the Wetland A buffer. All of the proposed impervious surface additions are located outside of the applied 40-foot Wetland A buffer. A portion of the proposed expansion is located within the existing building setback, which will result in a modification of the building setback under the new condition. As a result, 167 square feet of buffer will be converted to building setback and will be mitigated at a 1:1 ratio. The impact area is low-functioning lawn and will be mitigated with native trees, shrubs, and groundcovers. An additional 1,323 square feet of wetland buffer will be planted with a dense, native hedge row that will prevent human and pet intrusions while also providing enhanced biological functions. The restoration and enhancement plantings will provide improved ability to trap and filter runoff as well as reduce

surface water velocities entering the lake, as compared to the existing mowed lawn. These areas will also provide improved habitat functions for small mammals, songbirds, and pollinators, as compared to the existing condition, by improving forage and cover opportunities in the shoreline zone, Wetland A, and the buffer.

Table 4 summarizes the area of proposed impacts and mitigation within the 25- and 50-foot shoreline setbacks and the wetland buffer. No new impervious surfaces are proposed within the shoreline setbacks or the wetland buffer. A total of 1,668 square feet of the shoreline zone will be enhanced with native trees, shrubs, and groundcovers to improve wetland, shoreline, and wetland buffer functions. The shoreline enhancement also complies with the requirements of MICC 19.13.050(K)4.i. The 1,668-square-foot enhancement area equals 75 percent of the area within 20 feet of the lake OHWM.

Table 4. Summary of impact/enhancement within 50-foot shoreline setback and 40-foot wetland buffer

Feature	Permanent Impact Area	Temporary Impact Area	Restoration/Enhancement Area
50-ft Lake WA Shoreline Setback	0 SF	0 SF	1,668 SF*
40-ft Wetland Buffer	167 SF**	74 SF	1,564 SF

*All located within 20 feet of the OHWM

** Represents a conversion of buffer to building setback.

8 No Net Loss

All proposed new impervious surface development will occur outside of the 50-foot shoreline setback and the 40-foot wetland buffer. The proposed project will result in enhanced shoreline and wetland/wetland buffer ecological functions. The current condition of the shoreline buffer is lacking any woody vegetation and provides little to no protective functions. Revegetating the area with a mix of trees, shrubs, and groundcovers will improve the ability of the shoreline setback and wetland buffer to trap and filter stormwater runoff, helping to improve water quality in the lake. The infiltration capacity will also be improved, which will help maintain a more natural hydrograph. Finally, the establishment of a native tree, shrub, and groundcover community will provide greater forage and cover opportunities for wildlife than the existing condition.

9 Mitigation and Restoration Plan

Overview

The proposed addition to a single-family residence and associated site improvements will increase impervious surfaces within the 200-foot shoreline jurisdiction by 995 square feet. All proposed improvements will occur outside of the 25-foot and 50-foot shoreline setbacks and comply with allowed impervious surface maximums in these inner and outer shoreline setbacks. In total, 75% of the vegetation area within 20 feet of the lakeshore will be enhanced with native vegetation as required by the Mercer Island SMP.

All improvements will avoid direct wetland impacts. Permanent wetland buffer impacts resulting from converting existing buffer to building setback total 167 square feet and will be mitigated for at a 1:1 ratio. Temporary buffer impacts will be restored in place. Additionally, 1,323 square feet of area located along the building setback line and lake access path will be planted with a dense hedgerow of native shrubs as an impact minimization measure. In total, the 1,490 square feet of buffer enhancement represents a mitigation to impact ratio of approximately 8.9:1.

Goals

1. Maintain no net loss of shoreline setback functions.
2. Restore temporary disturbance areas to an equivalent or greater condition.
3. Increase native plant cover and diversity in the shoreline area.
4. Maintain low invasive plant cover in the mitigation areas.

Performance Standards

The standards listed below will be used to judge the success of the plan over time. If the standards are met at the end of the five-year monitoring period, the City shall issue release of the performance bond.

Survival:

1. Achieve 100% survival of all installed trees and shrubs at the end of Year-1. This standard may be met through establishment of installed plants or by replanting as necessary to achieve the required numbers.
2. A survival standard of 80% of native trees, shrubs, and groundcovers by Year-5 may apply in-lieu of Standard 4 below, in the case that Standard 4 is not achieved.

Native vegetation cover:

3. Achieve at least 60% cover of native trees, shrubs, and groundcovers in planted areas by the end of Year 3. Volunteer species may count toward this standard.

4. Achieve at least 80% cover of native trees, shrubs, and groundcovers in planted areas by the end of Year 5. Volunteer species may count toward this standard.

5. Invasive cover: No more than 10% cover of invasive species in the planting area in any monitoring year. Invasive species are defined as any Class A, B, or C noxious weeds as listed by the King County Noxious Weed Control Board.

6. Species Diversity: Establish at least two species of native trees, eight species of native shrubs, three species of native groundcover, and three species of native emergent plants within the wetland buffer mitigation area and shoreline vegetation areas.

Monitoring Methods

This monitoring program is designed to track the success of the mitigation site over time by measuring the degree to which the performance standards listed above are being met. An as-built plan will be prepared within 30 days of substantially complete construction of the mitigation areas. The as-built plan will document conformance with these plans and will disclose any substitutions or other non-critical departures. The as-built plan will establish baseline plant installation quantities and photopoints that will be used throughout the monitoring period to visually document site changes over time.

Monitoring will take place twice annually for five years. During each year there will be a spring and late summer or fall visit. First-year monitoring will be performed in the first spring subsequent installation. In Year 1, a total plant count will be conducted. In Years 2 and 3, representative samples of the mitigation area will be assessed and progress towards the performance standards measured. Visual cover class estimates will be used to evaluate native cover. If 80% cover by native trees and shrubs in not achieved in Year 5, and full plant count will be conducted to measure survival (See Performance Standard 2). Invasive species cover will be visually estimated in each year.

The spring monitoring visit will record maintenance issues such as the need for plant replacement and invasive species removal. Following the spring visit, the restoration specialist will notify the owner and/or maintenance crews of necessary early growing season maintenance needs. The late summer/early fall monitoring visit will include performance standard measurements and a subsequent annual report submitted to the City of Mercer Island. The report will contain:

1. General summary of the spring visit.

2. First-year counts of plants by species in the planting area.

3. Counts of dead plants where mortality is significant in any monitoring year.
4. Estimates of native species cover using cover class method.
5. Estimates of invasive species cover using cover class method.
6. Photographic documentation at permanent photopoints.
7. Recommendations for maintenance or repair of any portion of the mitigation areas.
8.

Maintenance

This site will be maintained for five years following completion of the plant installation.

1. Replace each plant found dead in the summer monitoring visit during the upcoming fall dormant season (October 15th to March 1st).
2. Follow recommendations noted in the spring monitoring site visit.
3. General weeding for all planted areas.
4. At least twice yearly, remove by hand all competing weeds and weed roots from beneath each installed plant and any desirable volunteer vegetation to a distance of 12 inches from the main plant stem. Weeding should occur as needed during the spring and summer. Frequent weeding will result in lower mortality and lower plant replacement costs.
5. More frequent weeding may be necessary depending on weed conditions that develop after plan installation.
6. Do not weed the area near the plant bases with string trimmer (weed whacker). Native plants are easily damaged or killed, and weeds easily recover after trimming.
7. Keep weed coverage throughout the planting area below the 10% threshold.

Contingency Plan

If all or part of the mitigation area fails to establish according to the goals and performance standards, a contingency plan shall be developed. Contingency measures may include, but are not limited to, plant species substitutions, soil amendments, herbivore exclusion fencing, modified irrigation schedule, and adaptive weed management.

Material Specifications and Definitions

1. Irrigation system: Automated system capable of delivering at least one inch of water per week from June 1 through September 30 for the first two years following installation.

2. Restoration professional: Watershed Company [(425) 822-5242)] personnel, or other persons qualified to evaluate environmental restoration projects.

3. Wood chip mulch: Arborist chips (chipped woody material) approximately 1 to 3 inches in maximum dimension (not sawdust or coarse hog fuel). Mulch must not contain appreciable quantities of garbage, plastic, metal, soil, and dimensional lumber or construction/demolition debris. Quantity required: 0.5 cubic yards.

4. Compost: Cedar Grove compost or equivalent "composted material" per Washington Admin. Code 173-350-220.

Summary

The applicant proposes to demolish and reconstruct an existing single-family residence within the designated shoreline zone. In order to allow the proposed development, the applicant proposes to implement the standard 40-foot buffer for Wetland A under MICC 19.07.190(C)1 by implementing the impact minimization measures under MICC 19.07.190(D)2. All elements of the project comply with the Mercer Island SMP and Critical Areas Regulations; the applicant is not requesting a variance or reasonable use exception. In order to ensure no net loss of functions and to maintain compliance with MICC 19.13.050(K)4.i, the project will enhance 75 percent of the area within 20 feet of the OHWM with a mix of native trees, shrubs, and groundcovers. No new development ins proposed within 50 feet of the shoreline or within Wetland A or its buffer.

The installation of mitigation plantings, soil decompaction and amendment within the shoreline setback will improve water quality, hydrology, and habitat functions. The proposed planting plan incorporates a diversity of native plant species, including trees, shrubs, and groundcover plants. The proposed plan will provide better protection of the shoreline environment than exists under current conditions.

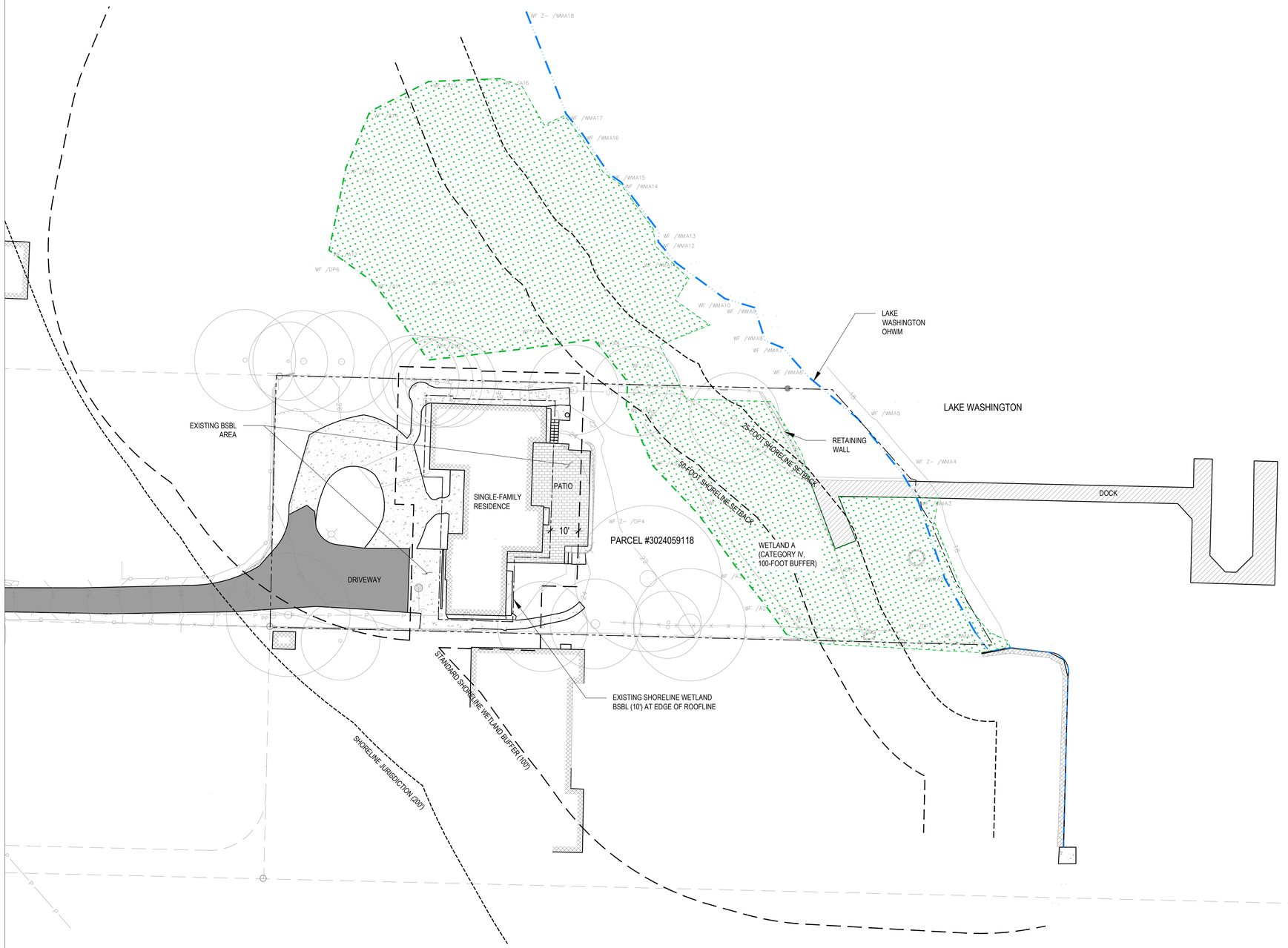
Finally, a comprehensive five-year maintenance and monitoring plan has been prepared. This plan will ensure that proposed enhancement plantings will be maintained, monitored, and successfully established within the first five years following implementation. Overall, a net improvement in on-site shoreline and buffer ecological functions is the expected result of the project.

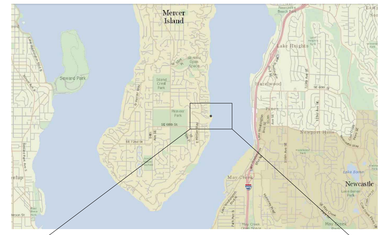
Appendix A

BUFFER AND SHORELINE MITIGATION PLAN

Appendix B

WETLAND DATA SHEETS





VICINITY MAP

LEGEND

- PARCEL BOUNDARY
- DELINEATED WETLAND BOUNDARY
- APPROXIMATE WETLAND BOUNDARY
- DELINEATED OHWM
- APPROXIMATE OHWM
- STANDARD SHORELINE WETLAND BUFFER (100')
- EXISTING SHORELINE WETLAND BSBL (10')
- SHORELINE JURISDICTION (200')
- SHORELINE SETBACK (25')
- SHORELINE SETBACK (50')

SHEET INDEX

NOTES

1. CRITICAL AREAS DELINEATED BY THE WATERSHED COMPANY ON AUGUST 20, 2021 (750 6TH STREET; KIRKLAND, WA 98033; 425-822-5242).
2. SURVEY (DATED MAY 3, 2018) RECEIVED FROM TERRANE (10801 MAIN STREET; SUITE 102; BELLEVUE, WA 98004; 425-458-4488).

20' 10' 0 20' 40'

SCALE 1" = 20'

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SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND WA 98033
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SIMPSON RESIDENCE MITIGATION PLAN

PROJECT:

6454 E MERCER WAY; MERCER ISLAND, WA 98040

PRINCIPAL: HM
PROJECT MANAGER: RK
DRAWN BY: RH
CHECKED BY: GM, RK
JOB NO.: 210734
DATE: 05/11/2022

REVISIONS:

NO.	DESCRIPTION	DATE

NOT FOR CONSTRUCTION

SCHEMATIC DESIGN

05/11/2022

EXISTING CONDITIONS

L001

LEGEND

EXISTING

- PARCEL BOUNDARY
- DELINEATED WETLAND BOUNDARY
- APPROXIMATE WETLAND BOUNDARY
- DELINEATED OHWM
- APPROXIMATE OHWM
- STANDARD SHORELINE WETLAND BUFFER (100')
- EXISTING SHORELINE WETLAND BSBL (10')
- SHORELINE JURISDICTION (200')
- SHORELINE SETBACK (25')
- SHORELINE SETBACK (50')

PROPOSED

- STANDARD WETLAND BUFFER (40')
- STANDARD WETLAND BUFFER BSBL (10')
- PERMANENT WETLAND BUFFER IMPACT - EXISTING BUFFER CONVERTED TO BSBL (167 SF)
- TEMPORARY WETLAND BUFFER IMPACT (74 SF)
- TEMPORARY WETLAND BSBL DISTURBANCE (274 SF)

NOTES

1. SITE PLAN PROVIDED BY STURMAN ARCHITECTS (9 103RD AVE NE; SUITE 203; BELLEVUE, WA 98004; 425-451-7009).
2. FOR DETAILS OF PROPOSED TREE REMOVAL SEE TREE INVENTORY PROVIDED BY TREE SOLUTIONS (2940 WESTLAKE AVE N #200; SEATTLE, WA 98109; 206-528-4670).
3. PER SITE PLAN CALCULATIONS, TOTAL ADDITIONAL BUILDING AREA IS 3,468.4 SF.
4. ALL PROPOSED WORK TO OCCUR OUTSIDE OF 25 AND 50-FOOT SHORELINE SETBACKS.
5. TEMPORARY WETLAND BUFFER IMPACTS ACCOUNT FOR 74 SF OF IMPERVIOUS AREAS THAT WILL BE REMOVED; TEMPORARY WETAND BSBL IMPACTS ACCOUNT FOR 274 SF OF IMPERVIOUS AREAS THAT WILL BE REMOVED. SEE SHEET L004 FOR MITIGATION AND RESTORATION AREAS.
6. ALL APPLICABLE MINIMIZING MEASURES LISTED IN MICC 19.07.190(D)(3) SHALL BE IMPLEMENTED FOR STANDARD WETLAND BUFFER (40')TO APPLY.

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND WA 98033
425.822.5242
WWW.WATERSHEDCO.COM

SIMPSON RESIDENCE MITIGATION PLAN

PROJECT:
6434 E MERCER WAY; MERCER ISLAND, WA 98040

PRINCIPAL: HM
PROJECT MANAGER: RK
DRAWN BY: RH
CHECKED BY: GM, RK
JOB NO.: 210734
DATE: 05/11/2022

REVISIONS:

NO.	DESCRIPTION	DATE

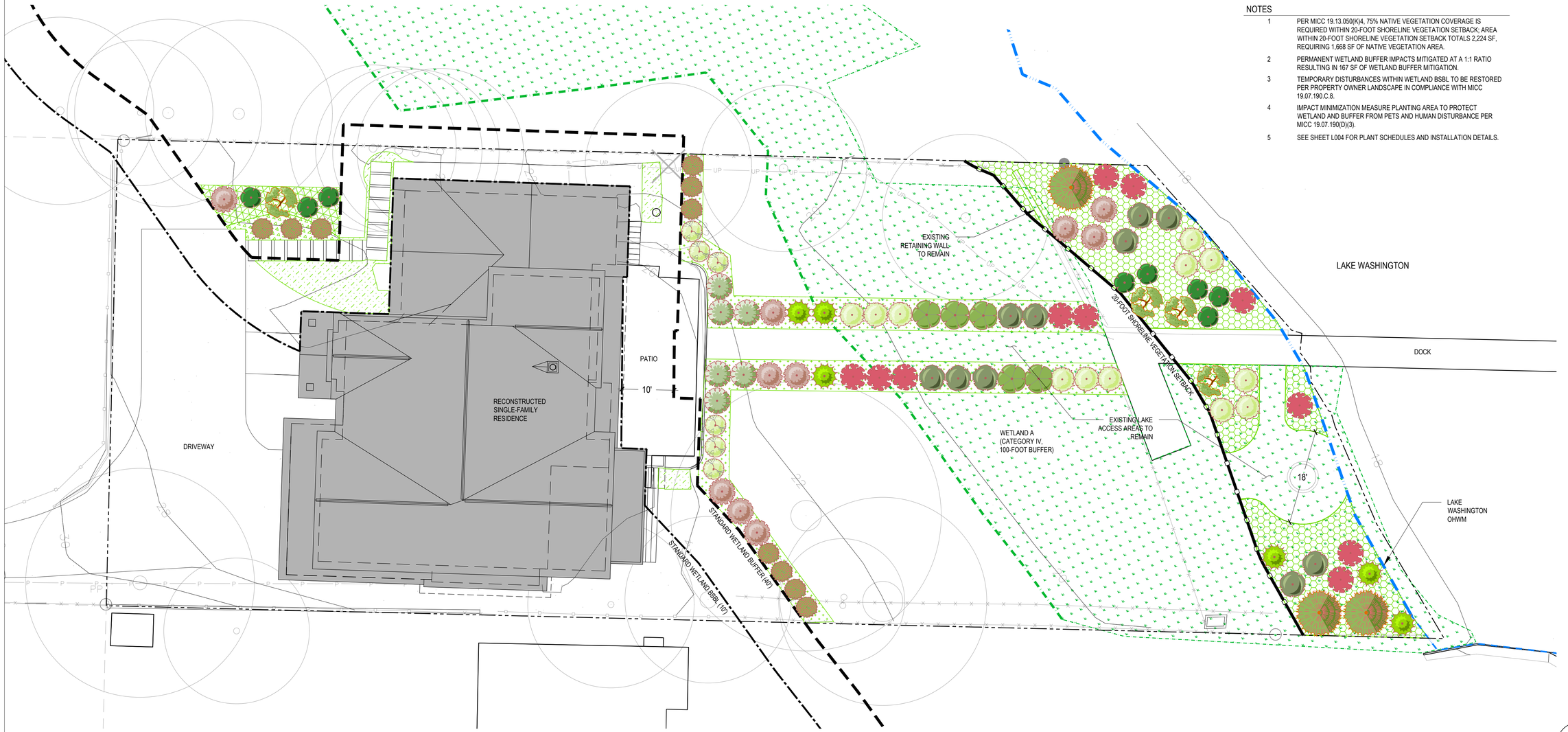
NOT FOR CONSTRUCTION

SCHEMATIC DESIGN

05/11/2022

IMPACTS ASSESSMENT

L002



LEGEND

EXISTING

- PARCEL BOUNDARY
- DELINEATED WETLAND BOUNDARY
- APPROXIMATE WETLAND BOUNDARY
- DELINEATED OHWM
- APPROXIMATE OHWM

PROPOSED

- STANDARD WETLAND BUFFER (40')
- STANDARD WETLAND BSBL (10')
- SHORELINE VEGETATION SETBACK (20')
- SHORELINE VEGETATION AREA (1,668 SF)
- WETLAND BUFFER MITIGATION AREA (167 SF)
- WETLAND BUFFER TEMPORARY IMPACT RESTORATION AREA (74 SF)
- WETLAND BSBL RESTORATION AREA (274 SF)
- IMPACT MINIMIZATION MEASURE PLANTING AREA (1,323 SF)

NOTES

1. PER MICC 19.13.050(K)4, 75% NATIVE VEGETATION COVERAGE IS REQUIRED WITHIN 20-FOOT SHORELINE VEGETATION SETBACK; AREA WITHIN 20-FOOT SHORELINE VEGETATION SETBACK TOTALS 2,224 SF, REQUIRING 1,668 SF OF NATIVE VEGETATION AREA.
2. PERMANENT WETLAND BUFFER IMPACTS MITIGATED AT A 1:1 RATIO RESULTING IN 167 SF OF WETLAND BUFFER MITIGATION.
3. TEMPORARY DISTURBANCES WITHIN WETLAND BSBL TO BE RESTORED PER PROPERTY OWNER LANDSCAPE IN COMPLIANCE WITH MICC 19.07.190.C.8.
4. IMPACT MINIMIZATION MEASURE PLANTING AREA TO PROTECT WETLAND AND BUFFER FROM PETS AND HUMAN DISTURBANCE PER MICC 19.07.190(D)(3).
5. SEE SHEET L004 FOR PLANT SCHEDULES AND INSTALLATION DETAILS.

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SIMPSON RESIDENCE MITIGATION PLAN

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MITIGATION PLANTING PLAN

L003

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	QTY
	ACER CIRCINATUM / VINE MAPLE	4
	PINUS CONTORTA / SHORE PINE	3

SHRUBS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
	CORNUS SERICEA / RED TWIG DOGWOOD	1 GALLON	60" o.c.	11
	LONICERA INVOLUCRATA / TWINBERRY	1 GALLON	60" o.c.	5
	MORELLA CERIFERA / WAX MYRTLE	1 GALLON	60" o.c.	6
	PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	1 GALLON	60" o.c.	10
	RIBES SANGUINEUM / RED FLOWERING CURRANT	1 GALLON	60" o.c.	10
	ROSA NUTKANA / NOOTKA ROSE	1 GALLON	60" o.c.	6
	RUBUS PARVIFLORUS / THIMBLEBERRY	1 GALLON	48" o.c.	8
	RUBUS SPECTABILIS / SALMONBERRY	1 GALLON	60" o.c.	12
	SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	1 GALLON	48" o.c.	6
	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY	1 GALLON	36" o.c.	10

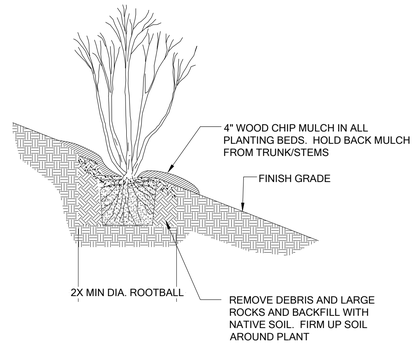
GROUNDCOVERS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY.
	ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK	1 GALLON	36" O. C	30
	FRAGARIA CHILOENSIS / BEACH STRAWBERRY	1 GALLON	36" O. C	30
	GAULTHERIA SHALLON / SALAL	1 GALLON	36" O. C	30
	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GALLON	36" O. C	30

EMERGENTS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY.
	ATHYRIUM FILIX-FEMINA / COMMON LADY FERN	1 GALLON	36" O. C	20
	CAREX OBNUPTA / SLOUGH SEDGE	1 GALLON	36" O. C	20
	DESCHAMPSIA CESPITOSA / TUFTED HAIR GRASS	1 GALLON	36" O. C	20
	JUNCUS EFFUSUS / COMMON RUSH	1 GALLON	36" O. C	20
	SCIRPUS MICROCARPUS / SMALL-FRUITED BULRUSH	1 GALLON	36" O. C	20

NOTES

1	EMERGENT PLANT SPECIES TO BE PLANTED ONLY WITHIN WETLAND PORTION OF MITIGATION AREA; GROUNDCOVER SPECIES TO BE PLANTED ONLY OUTSIDE OF WETLAND PORTION OF MITIGATION AREA.
2	EMERGENT AND GROUNDCOVER PLANTS TO BE SPACED TRIANGULARLY AND ARRANGED BY SPECIES IN GROUPS OF 5-9 PLANTS.
3	SEE SHEET L003 FOR MITIGATION PLANTING PLAN.

NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOM OF PLANT PIT
3. REMOVE FROM POT & ROUGH-UP ROOT BALL BEFORE INSTALLING. IF PLANT IS EXCEPTIONALLY ROOT-BOUND OR CONTAINS CIRCLING ROOTS, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE. IF B&B STOCK, REMOVE ALL TWINE/WIRE, & REMOVE BURLAP FROM TOP 1/3RD OF ROOTBALL PRIOR TO PLANTING (NOTE: CONTAINER STOCK PREFERRED)
4. SOAK PLANTING PIT AFTER PLANTING



1 CONTAINER PLANTING DETAIL

Scale: NTS

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND WA 98033
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SIMPSON RESIDENCE MITIGATION PLAN
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PLANT SCHEDULE AND INSTALLATION DETAILS

L004

MITIGATION NOTES

THE PROPOSED ADDITION TO A SINGLE FAMILY RESIDENCE AND ASSOCIATED SITE IMPROVEMENTS WILL INCREASE IMPERVIOUS SURFACE WITHIN THE 200-FOOT SHORELINE JURISDICTION BY 995 SQUARE FEET. ALL PROPOSED IMPROVEMENTS WILL OCCUR OUTSIDE OF THE 25-FOOT AND 50-FOOR SHORELINE SETBACKS AND COMPLY WITH ALLOWED IMPERVIOUS SURFACE MAXIMUMS IN THESE INNER AND OUTER SHORELINE SETBACKS. PROPOSED SITE IMPROVEMENTS AS CALCULATED BY STURMAN ARCHITECTS WILL INCREASE IMPERVIOUS LOT COVERAGE BY 13,468.4 SQUARE FEET. THEREFORE, 75% OF THE VEGETATION AREA (THE 20-FT SETBACK FROM THE LAKESHORE) WILL BE ENHANCED WITH NATIVE VEGETATION AS REQUIRED BY CITY CODE.

ALL IMPROVEMENTS WILL AVOID DIRECT WETLAND IMPACTS. PERMANENT WETLAND BUFFER IMPACTS RESULTING FROM CONVERTING THE EXITING BUFFER TO BSBL TOTAL 167 SQUARE FEET AND WILL BE MITIGATED FOR AT A ONE-TO-ONE RATIO. TEMPORARY WETLAND BUFFER IMPACTS TOTAL 74 SQUARE FEET, RESULTING FROM THE REMOVAL OF EXISTING IMPERVIOUS AREAS; TEMPORARY WETLAND BUFFER IMPACTS WILL BE RESTORED WITH NATIVE GROUNDCOVERS. ADDITIONALLY, 1,323 SQUARE FEET OF AREA LOCATED ALONG THE WETLAND BUFFER AND LAKE ACCESS PATH WILL BE PLANTED WITH A DENSE HEDGEROW OF NATIVE SHRUBS AS AN IMPACT MINIMIZATION MEASURE TO REDUCE BUFFER DISTURBANCES.

MAINTENANCE AND MONITORING PLAN

THE SITE SHALL BE MAINTAINED AND MONITORED FOR FIVE YEARS FOLLOWING SUCCESSFUL INSTALLATION. COMPONENTS OF THE 5-YEAR MAINTENANCE AND MONITORING PLAN ARE DETAILED BELOW.

GOALS

1. MAINTAIN NO NET LOSS OF SHORELINE SETBACK FUNCTIONS.
2. RESTORE TEMPORARY DISTURBANCE AREAS TO AN EQUIVALENT OR GREATER CONDITION.
3. INCREASE NATIVE PLANT COVER AND DIVERSITY IN THE SHORELINE.
4. MAINTAIN LOW INVASIVE PLANT COVER IN THE MITIGATION AREAS.

PERFORMANCE STANDARDS

THE PERFORMANCE OF THE MITIGATION AREA WILL BE GAUGED USING STANDARDS DESIGNED TO MEASURE ITS SUCCESS. IF PERFORMANCE STANDARDS ARE MET AT THE END OF YEAR 5, THE SITE WILL THEN BE DEEMED SUCCESSFUL. THE PERFORMANCE STANDARDS BELOW ONLY APPLY TO PLANTINGS WITHIN THE WETLAND BUFFER MITIGATION AREA AND SHORELINE VEGETATION AREAS.

SURVIVAL:

1. ACHIEVE 100% SURVIVAL OF INSTALLED TREES AND SHRUBS BY THE END OF YEAR 1. THIS STANDARD CAN BE MET THROUGH PLANT ESTABLISHMENT OR THROUGH REPLANTING AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
2. A SURVIVAL STANDARD OF 80% OF NATIVE TREES, SHRUBS, GROUNDCOVER, AND EMERGENT PLANTS BY YEAR 5 MAY APPLY IN LIEU OF STANDARD 4, BELOW, IN THE CASE THAT STANDARD 4 IS NOT ACHIEVED.

NATIVE VEGETATION COVER:

3. ACHIEVE 60% COVER OF TREES, SHRUBS, GROUNDCOVER, AND EMERGENT PLANTS BY YEAR 3.NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS COVER STANDARD.
4. ACHIEVE 80% COVER OF NATIVE TREES, SHRUBS, GROUNDCOVER, AND EMERGENT PLANTS BY YEAR 5. NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS COVER STANDARD.

INVASIVE VEGETATION COVER:

5. INVASIVE COVER: NO MORE THAN 10% COVER BY INVASIVE WEED SPECIES IN THE WETLAND BUFFER MITIGATION AREA OR SHORELINE VEGETATION AREAS IN ANY MONITORING YEAR.

SPECIES DIVERSITY:

6. ESTABLISH AT LEAST TWO SPECIES OF NATIVE TREES, EIGHT SPECIES OF NATIVE SHRUBS, THREE SPECIES OF NATIVE GROUNDCOVER, AND THREE SPECIES OF NATIVE EMERGENT PLANTS WITHIN THE WETLAND BUFFER MITIGATION AREA AND SHORELINE VEGETATION AREAS.

MAINTENANCE AND MONITORING

MONITORING PLAN

THIS MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE MITIGATION SITE OVER TIME AND TO MEASURE THE DEGREE TO WHICH IT IS MEETING THE PERFORMANCE STANDARDS OUTLINED ELSEWHERE IN THIS DOCUMENT.

AN AS-BUILT PLAN WILL BE PREPARED BY THE **RESTORATION SPECIALIST** PRIOR TO THE BEGINNING OF THE MONITORING PERIOD. THE AS-BUILT PLAN WILL BE A MARK-UP OF THE PLANTING PLANS INCLUDED IN THIS PLAN SET. THE AS-BUILT PLAN WILL DOCUMENT ANY DEPARTURES IN PLANT PLACEMENT OR OTHER COMPONENTS FROM THE ACCEPTED MITIGATION PLAN.

MONITORING WILL TAKE PLACE TWICE ANNUALLY FOR FIVE YEARS. DURING EACH YEAR THERE WILL BE A SPRING AND A LATE SUMMER OR FALL VISIT. FIRST-YEAR MONITORING WILL BE PERFORMED IN THE FIRST SPRING SUBSEQUENT TO INSTALLATION. IN YEAR 1, A TOTAL PLANT COUNT WILL BE CONDUCTED. IN YEARS 2 AND 3, REPRESENTATIVE SAMPLES OF THE MITIGATION AREA WILL BE ASSESSED AND PROGRESS TOWARD THE PERFORMANCE STANDARDS MEASURED. VISUAL COVER CLASS ESTIMATES WILL BE USED TO EVALUATE NATIVE COVER. IF 80% COVER BY NATIVE TREES AND SHRUBS IS NOT ACHIEVED IN YEAR 5, A FULL PLANT COUNT WILL BE CONDUCTED TO MEASURE SURVIVAL (SEE PERFORMANCE STANDARD 2.). INVASIVE SPECIES COVER WILL BE VISUALLY ESTIMATED IN EACH YEAR.

THE SPRING MONITORING VISIT WILL RECORD MAINTENANCE ISSUES SUCH AS THE NEED FOR PLANT REPLACEMENT AND INVASIVE SPECIES REMOVAL. FOLLOWING THE SPRING VISIT, THE **RESTORATION SPECIALIST** WILL NOTIFY THE OWNER AND/OR MAINTENANCE CREWS OF NECESSARY EARLY GROWING SEASON MAINTENANCE NEEDS. THE LATE SUMMER/EARLY FALL MONITORING VISIT WILL INCLUDE PERFORMANCE STANDARD MEASUREMENTS AND A SUBSEQUENT ANNUAL REPORT SUBMITTED TO THE CITY OF MERCER ISLAND. THE REPORT WILL CONTAIN:

1. GENERAL SUMMARY OF THE SPRING VISIT.
2. FIRST-YEAR COUNTS OF PLANTS BY SPECIES IN THE PLANTED AREA.
3. COUNTS OF DEAD PLANTS WHERE MORTALITY IS SIGNIFICANT IN ANY MONITORING YEAR.
4. ESTIMATE OF NATIVE SAPLING TREE AND SHRUB COVER USING VISUAL COVER CLASS ESTIMATES.
5. ESTIMATE OF INVASIVE WEEDY COVER USING VISUAL COVER CLASS ESTIMATES.
6. PHOTOGRAPHIC DOCUMENTATION FROM FIXED REFERENCE POINTS.
7. RECOMMENDATIONS FOR MAINTENANCE OR REPAIR OF ANY PORTION OF THE MITIGATION AREA.

MAINTENANCE PLAN

THE SITE WILL BE MAINTAINED FOR FIVE YEARS FOLLOWING COMPLETION OF THE CONSTRUCTION. NOTE: SPECIFICATIONS FOR ITEMS IN **BOLD** CAN BE FOUND ABOVE UNDER "MATERIAL SPECIFICATIONS AND DEFINITIONS."

1. REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISITS DURING FROST-FREE PERIODS ONLY IN THE UPCOMING FALL DORMANT SEASON (OCTOBER 15 TO MARCH 1) FOR THE FIRST MONITORING YEAR. REPLACE PLANTS AS DIRECTED IN MONITORING REPORTS.
2. FOLLOW THE RECOMMENDATIONS NOTED IN THE SPRING MONITORING SITE VISIT.
3. GENERAL WEEDING FOR ALL PLANTED AREAS:
4. AT LEAST TWICE YEARLY, REMOVE ALL COMPETING GRASS AND WEEDS, INCLUDING ROOTS, FROM BENEATH EACH INSTALLED PLANT AND ANY DESIRABLE VOLUNTEER VEGETATION TO A DISTANCE OF 18 INCHES FROM THE MAIN PLANT STEM. WEEDING SHOULD OCCUR AT LEAST TWICE DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY AND LOWER PLANT REPLACEMENT COSTS.
5. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLAN INSTALLATION.
6. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER/WEED EATER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
7. TO KEEP WEED COVERAGE THROUGHOUT THE PLANTING AREA BELOW THE 10% THRESHOLD.
8. APPLY SLOW RELEASE GRANULAR **FERTILIZER** TO EACH INSTALLED PLANT ANNUALLY IN THE SPRING (BY JUNE 1) OF YEARS 2 THROUGH 5.
9. MULCH THE WEEDED AREAS BENEATH EACH PLANT WITH **WOOD CHIPS** AS NECESSARY TO MAINTAIN A 4-INCH-THICK WOOD CHIP MULCH LAYER AND KEEP DOWN WEEDS.
10. THE APPLICANT SHALL ENSURE THAT WATER IS PROVIDED FOR THE ENTIRE PLANTED AREA WITH A MINIMUM OF 2 INCHES OF WATER PROVIDED PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR AT LEAST THE FIRST TWO YEARS FOLLOWING INSTALLATION.

MITIGATION AREA WORK SEQUENCE (SEE MATERIALS FOR ITEMS IN BOLD)

A RESTORATION SPECIALIST SHALL MAKE SITE VISITS TO VERIFY THE FOLLOWING PROJECT MILESTONES:

1. MARK THE CLEARING LIMITS WITH HIGH VISIBILITY FENCING OR SIMILAR MEANS.
2. INSTALL NATIVE PLANTS PER MITIGATION PLANTING PLAN AND PLANTING SCHEDULE AND INSTALLATION DETAILS ON SHEETS L003 AND L004.
   a. NATIVE PLANT INSTALLATION SHALL OCCUR DURING THE DORMANT SEASON (OCTOBER 15TH THROUGH MARCH 1ST) IN FROST-FREE PERIODS ONLY.
   b. LAYOUT PLANT MATERIAL PER PLAN FOR INSPECTION BY THE RESTORATION SPECIALIST. PLANT SUBSTITUTIONS WILL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE RESTORATION SPECIALIST.
   c. INSTALL PLANTS PER PLANTING DETAILS
3. WATER IN EACH PLANT THOROUGHLY TO REMOVE AIR POCKETS.
4. INSTALL A TEMPORARY IRRIGATION SYSTEM CAPABLE OF SUPPLYING AT LEAST 1-INCH OF WATER PER WEEK TO THE ENTIRE PLANTED AREA DURING THE DRY SEASON (JUNE 1ST THROUGH SEPTEMBER 30TH).

MATERIAL SPECIFICATIONS AND DEFINITIONS

1. **RESTORATION SPECIALIST**: WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
2. **IRRIGATION SYSTEM:** A SYSTEM CAPABLE OF DELIVERING AT LEAST TWO INCHES OF WATER PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION.
3. **WOOD CHIP MULCH:** 9-14.4(3) BARK OR WOOD CHIPS- WSDOT STANDARD SPEC. BARK OR WOOD CHIP MULCH SHALL BE DERIVED FROM DOUGLAS FIR, PINE, OR HEMLOCK SPECIES. IT SHALL NOT CONTAIN RESIN, TANNIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. SAWDUST SHALL NOT BE USED AS MULCH.

   BARK OR WOOD CHIPS WHEN TESTED SHALL BE ACCORDING TO WSDOT TEST METHOD T 123 PRIOR PLACEMENT AND SHALL MEET THE FOLLOWING LOOSE VOLUME GRADATION:

SIEVE SIZE	PERCENT PASSING	
	MINIMUM	MAXIMUM
2"	95	100
NO. 4	0	30

CONTINGENCIES

IF THERE IS A SIGNIFICANT PROBLEM WITH THE RESTORATION AREAS MEETING PERFORMANCE STANDARDS, A CONTINGENCY PLAN WILL BE DEVELOPED AND IMPLEMENTED. CONTINGENCY PLANS CAN INCLUDE, BUT ARE NOT LIMITED TO: SOIL AMENDMENT, ADDITIONAL PLANT INSTALLATION, AND PLANT SUBSTITUTIONS OF TYPE, SIZE, QUANTITY, AND LOCATION.

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 2018 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS
1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION
1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS
1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES
1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES
1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS
1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

REPLACEMENT
1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT
1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND, WA 98033
425.822.5242
WWW.WATERSHEDCO.COM

SIMPSON RESIDENCE MITIGATION PLAN
6449 E MERCER WAY, MERCER ISLAND, WA 98040
PROJECT:

PRINCIPAL: HM
PROJECT MANAGER: RK
DRAWN BY: RH
CHECKED BY: GM, RK
JOB NO.: 210734
DATE: 05/11/2022

REVISIONS:

NO.	DESCRIPTION	DATE

NOT FOR CONSTRUCTION
SCHEMATIC DESIGN
05/11/2022

PLANT INSTALLATION SPECIFICATIONS AND MITIGATION NOTES
L005

THE WATERSHED COMPANY

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

DP - 1

Project/Site: 6454 E. Mercer Way (Parcel #3024059118) City/County: Mercer Island Sampling date: 07-30-2021

Applicant/Owner: Tyler Simpson State: WA Sampling Point: DP-1

Investigator(s): S. Presster Section, Township, Range: S30, T24N, R05E

Landform (hillslope, terrace, etc): Lake Edge Local relief (concave, convex, none): None Slope (%): 1%

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Kitsap Silt Loam, 2 to 8 percent slopes NWI classification: None

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

Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present on the site? ☐ 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 Soils Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: **Drier than normal per WETS methodology. Vegetation is mowed/maintained lawn. Wetland A in-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5-m diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 1-m diameter)			
1. *Lotus corniculatus*	25	Y	FAC
2. *Equisetum telmateia*	25	Y	FACW
3. *Poa spp.*	60	Y	FAC*
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 3-m diameter)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
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: *Presumed FAC.

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3	100	-	-	-	-	Sand	-
5-16	Gley 1 4/N	98	7.5YR 4/4	2	C	M	Sand	-

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: 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]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric soil present? **Yes** ☒ **No** ☐

Remarks:

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 (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations:

Surface Water Present?	Yes	☐	No	☒	Depth (in):	**-**
Water Table Present?	Yes	☐	No	☒	Depth (in):	**-**
Saturation Present? (includes capillary fringe)	Yes	☐	No	☒	Depth (in):	**5”**

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

THE WATERSHED COMPANY

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

DP - 2

Project/Site: 6454 E. Mercer Way (Parcel #3024059118) City/County: Mercer Island Sampling date: 07-30-2021

Applicant/Owner: Tyler Simpson State: WA Sampling Point: DP-2

Investigator(s): S. Presster Section, Township, Range: S30, T24N, R05E

Landform (hillslope, terrace, etc): Small depression Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Kitsap Silt Loam, 2 to 8 percent slopes NWI classification: None

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

Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present on the site? ☐ 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 Soils Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: **Drier than normal per WETS methodology. Vegetation is mowed/maintained lawn. Wetland A in-pit.**

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 5-m diameter)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 1-m diameter)			
1. *Iris pseudocorus*	25	Y	OBL
2. *Equisetum arvense*	5	N	FAC
3. *Poa spp.*	50	Y	FAC*
4. *Lotus corniculatus*	10	N	FAC
5. *Ranunculus repens*	40	Y	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 3-m diameter)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
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: *Presumed FAC.

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/4	100	-	-	-	-	Sandy silt loam	-
6-16	7.5YR 4/1	85	7.5YR 4/4	15	C	M, PL	Sand	-

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: 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]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric soil present? **Yes** ☒ **No** ☐

Remarks:

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 (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (in):	**-**	
Water Table Present?	Yes ☐	No ☒	Depth (in):	**-**	
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (in):	**6”**	

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

THE WATERSHED COMPANY

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

DP - 3

Project/Site: 6454 E. Mercer Way (Parcel #3024059118) City/County: Mercer Island Sampling date: 07-30-2021

Applicant/Owner: Tyler Simpson State: WA Sampling Point: DP-3

Investigator(s): S. Presster Section, Township, Range: S30, T24N, R05E

Landform (hillslope, terrace, etc): Slope Local relief (concave, convex, none): None Slope (%): 4%

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Kitsap Silt Loam, 2 to 8 percent slopes NWI classification: None

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

Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present on the site? ☐ 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 Soils Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: **Drier than normal per WETS methodology. Vegetation is mowed/maintained lawn. Wetland A in-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5-m diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 1-m diameter)			
1. *Poa spp.*	50	Y	FAC*
2. *Lotus corniculatus*	30	Y	FAC
3. *Equisetum telmateia*	20	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 3-m diameter)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
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: *Presumed FAC.

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/2	100	-	-	-	-	Silt loam	-
3-16	10YR 5/1	80	7.5YR 4/6	15	C	M	Sandy silt loam	-
3-16	-	-	7.5YR 4/4	5	C	M	Sandy silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: 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]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric soil present? **Yes** ☒ **No** ☐

Remarks:

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 (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in): -

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

THE WATERSHED COMPANY

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

DP - 4

Project/Site: 6454 E. Mercer Way (Parcel #3024059118) City/County: Mercer Island Sampling date: 07-30-2021

Applicant/Owner: Tyler Simpson State: WA Sampling Point: DP-4

Investigator(s): S. Presster Section, Township, Range: S30, T24N, R05E

Landform (hillslope, terrace, etc): Lake Edge Local relief (concave, convex, none): None Slope (%): 1%

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Kitsap Silt Loam, 2 to 8 percent slopes NWI classification: None

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

Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present on the site? ☐ 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 Soils Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: **Drier than normal per WETS methodology. Vegetation is mowed/maintained lawn. Wetland A out-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5-m diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Sequoia sempervirens*	35	Y	NL
2.			
3.			
4.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size: 1-m diameter)			
1. *Poa spp.*	95	Y	FAC*
2. *Lotus corniculatus*	5	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 3-m diameter)		
1.		
2.		
	0	= Total Cover

% Bare Ground in Herb Stratum: 0

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		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 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: *Presumed FAC.

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100	-	-	-	-	Sandy loam	-
4-16	10YR 5/3	100	-	-	-	-	Sandy loam	-

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: 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]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric soil present? Yes ☐ No ☒

Remarks:

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 (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in): -

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

THE WATERSHED COMPANY

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

DP - 5

Project/Site: 6442 E. Mercer Way (Parcel #3024059003) City/County: Mercer Island Sampling date: 07-30-2021

Applicant/Owner: Tyler Simpson State: WA Sampling Point: DP-5

Investigator(s): S. Presster Section, Township, Range: S30, T24N, R05E

Landform (hillslope, terrace, etc): Lake Edge Local relief (concave, convex, none): None Slope (%): 2%

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Kitsap Silt Loam, 2 to 8 percent slopes NWI classification: PEM1C

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 on the site? ☐ 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 Soils Present?	Yes	☒	No	☐	
Wetland Hydrology Present?	Yes	☒	No	☐	

Remarks: **Drier than normal per WETS methodology. Vegetation is mowed/maintained lawn. Wetland A in-pit.**

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 5-m diameter)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 1-m diameter)			
1. *Scirpus microcarpus*	25	Y	OBL
2. *Poa spp.*	40	Y	FAC*
3. *Lysimachia nummularia*	10	N	FACW
4. *Lotus corniculatus*	30	Y	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 3-m diameter)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
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: *Presumed FAC.

SOIL

Sampling Point: DP-5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/2	100	-	-	-	-	Sandy silt loam	-
3-16	10YR 4/1	80	7.5YR 4/4	20	C	M	Sand	-

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: 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]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric soil present? **Yes** ☒ **No** ☐

Remarks:

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 (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in): -

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

THE WATERSHED COMPANY

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

DP - 6

Project/Site: 6442 E. Mercer Way (Parcel #3024059003) City/County: Mercer Island Sampling date: 07-30-2021

Applicant/Owner: Tyler Simpson State: WA Sampling Point: DP-6

Investigator(s): S. Presster Section, Township, Range: S30, T24N, R05E

Landform (hillslope, terrace, etc): Lake Edge Local relief (concave, convex, none): None Slope (%): 1%

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Kitsap Silt Loam, 2 to 8 percent slopes NWI classification: None

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

Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present on the site? ☐ 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 Soils Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks: **Drier than normal per WETS methodology. Vegetation is mowed/maintained lawn. Wetland A out-pit.**

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5-m diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	35	Y	FAC
2. *Prunus lauricerasus*	30	Y	NL
3.			
4.			
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1. *Rhododendron macrophyllum*	15	Y	FACU
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1-m diameter)			
1. *Poa spp.*	90	Y	FAC*
2. *Ranunculus repens*	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 3-m diameter)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 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:

SOIL

Sampling Point: DP-6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/3	100	-	-	-	-	Sandy loam	-

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: 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]:

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

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric soil present? Yes ☐ No ☒

Remarks:

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 (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in): -

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

Appendix C

WETLAND RATING FORM AND FIGURES

Wetland name or number: Wetland A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 8/20/2021

Rated by: S. Presster and R. Hohlfeld Trained by Ecology? ☒Y ☐N Date of training: March 2021

HGM Class used for rating: Slope 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 Earth and Water Quality Atlas

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	M	**L**	H	M	**L**	H	M	**L**	
Landscape Potential	H	**M**	L	H	**M**	L	H	**M**	L	
Value	**H**	M	L	H	M	**L**	H	**M**	L	**TOTAL**
Score Based on Ratings	6			4			5			15

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Maps and figures required to answer questions correctly for Western Washington

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	2
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	3
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	3
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	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	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	5
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	6

Wetland name or number: Wetland A

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)
   * Wetland A includes lake-fringe and slope hydrogeomorphic classes. However, the lake-fringe portion accounts for less than 10 percent of the wetland unit. Therefore, the wetland is classified as a slope wetland for purposes of rating.

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: Wetland 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	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number: Wetland A

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) ☐ Slope is 1% or less points = 3 ☐ Slope is > 1%-2% points = 2 ☐ Slope is > 2%-5% points = 1 ☒ Slope is greater than 5% points = 0	0
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*:Yes = 3 ☐ No = 0 ☒	0
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in.* ☐ Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 ☐ Dense, uncut, herbaceous plants > ½ of area points = 3 ☐ Dense, woody, plants > ½ of area points = 2 ☒ Dense, uncut, herbaceous plants > ¼ of area points = 1 ☐ Does not meet any of the criteria above for plants points = 0	1
Total for S 1 Add the points in the boxes above	1

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

S 2.0. Does the landscape have the potential to support the water quality function of the site?	
S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? ☒Yes = 1 ☐ No = 0	1
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other sources_____ ☐Yes = 1 ☒ No = 0	0
Total for S 2 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ☒**1-2 = M** ☐**0 = L** *Record the rating on the first page*

S 3.0. Is the water quality improvement provided by the site valuable to society?	
S 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	1
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? *At least one aquatic resource in the basin is on the 303(d) list*. ☒Yes = 1 ☐ No = 0	1
S 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 unit is found.* ☐Yes = 2 ☒ No = 0	0
Total for S 3 Add the points in the boxes above	2

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

Wetland name or number: Wetland A

SLOPE WETLANDS

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

S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *Stems of plants should be thick enough (usually >1/8 in), or dense enough, to remain erect during surface flows.* ☐ Dense, uncut, **rigid** plants cover > 90% of the area of the wetland points = 1 ☒ All other conditions points = 0	0

Rating of Site Potential If score is: ☐**1 = M** ☒**0 = L** *Record the rating on the first page*

S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses or cover that generate excess surface runoff? ☒Yes = 1 ☐ No = 0	1

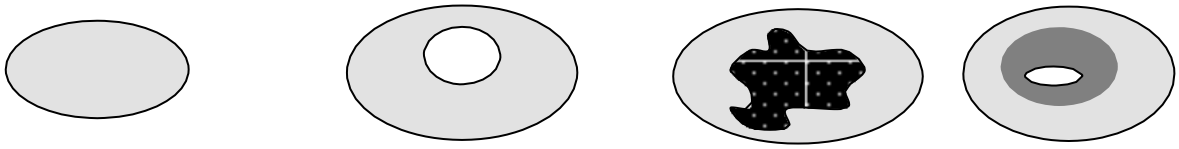
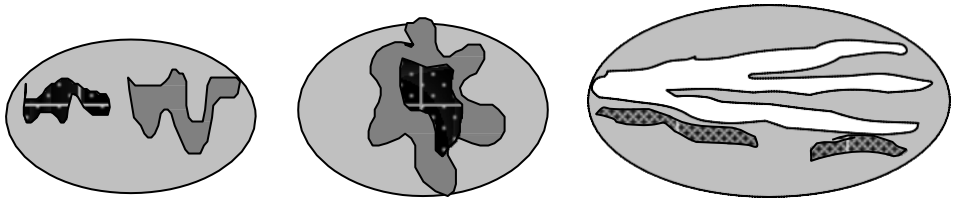
Rating of Landscape Potential If score is: ☒**1 = M** ☐**0 = L** *Record the rating on the first page*

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: ☐ The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 ☐ Surface flooding problems are in a sub-basin farther down-gradient points = 1 ☒ No flooding problems anywhere downstream points = 0	0
S 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? ☐Yes = 2 ☒ No = 0	0
Total for S 6 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*

NOTES and FIELD OBSERVATIONS:

Wetland name or number: Wetland A

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

Wetland name or number: Wetland A

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

Rating of Site Potential If score is: ☐**15-18 = H** ☐**7-14 = M** ☒**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(%moderate and low intensity land uses)/2] = **0% + (0%/2) = 0%** If total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ☒ < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat + [(%moderate and low intensity land uses)/2 **= 10.1% + (47.3%/2) = 33.8%** ☐ Undisturbed habitat > 50% of Polygon points = 3 ☐ Undisturbed habitat 10-50% and in 1-3 patches points = 2 ☒ Undisturbed habitat 10-50% and > 3 patches points = 1 ☐ Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☒ ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	1

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

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

Wetland name or number: Wetland 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. **DEEP WATER PRESENT (Lake Washington).**

Wetland name or number: Wetland A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland name or number: Wetland A

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

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2014 Ecology Wetland Rating Form Figures

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WETLAND A (SLOPE)

Figure 1. Cowardin plant classes – H1.1, H1.4

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

Figure 2. Hydroperiods and 150-foot area – H1.2, S2.1, S5.1

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

Figure 3. Plant cover of dense and rigid trees, shrubs, and herbaceous plants – S1.3, S4.1

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

Figure 4. Undisturbed habitat and moderate-low intensity land uses within 1 km from wetland edge including polygon for accessible habitat – H2.1, H2.2, H2.3

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

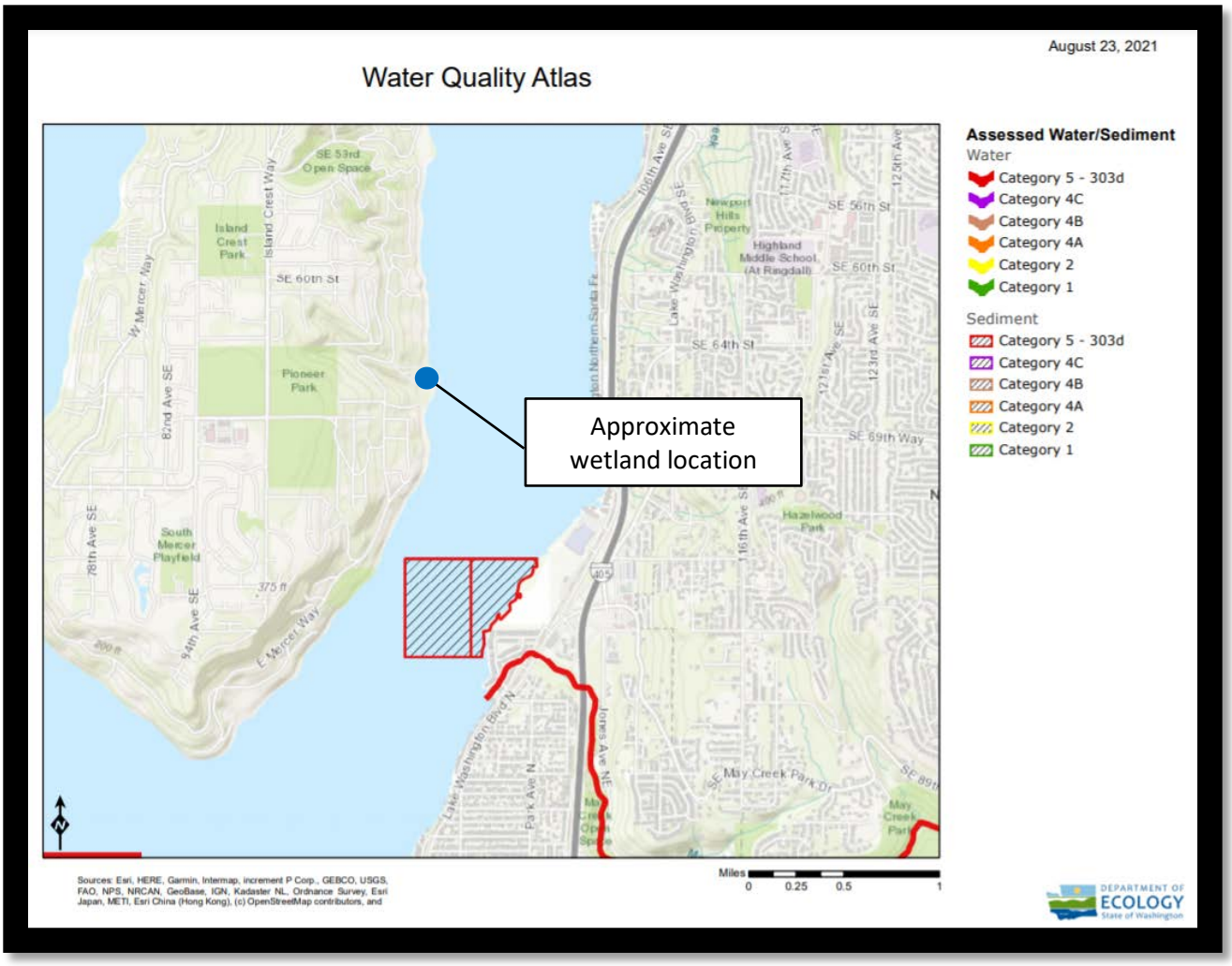

Figure 5. Screen-capture of 303(d) listed waters in basin – S3.1, S3.2

Features depicted are not to scale. Sketches are based on available data and best professional judgment.

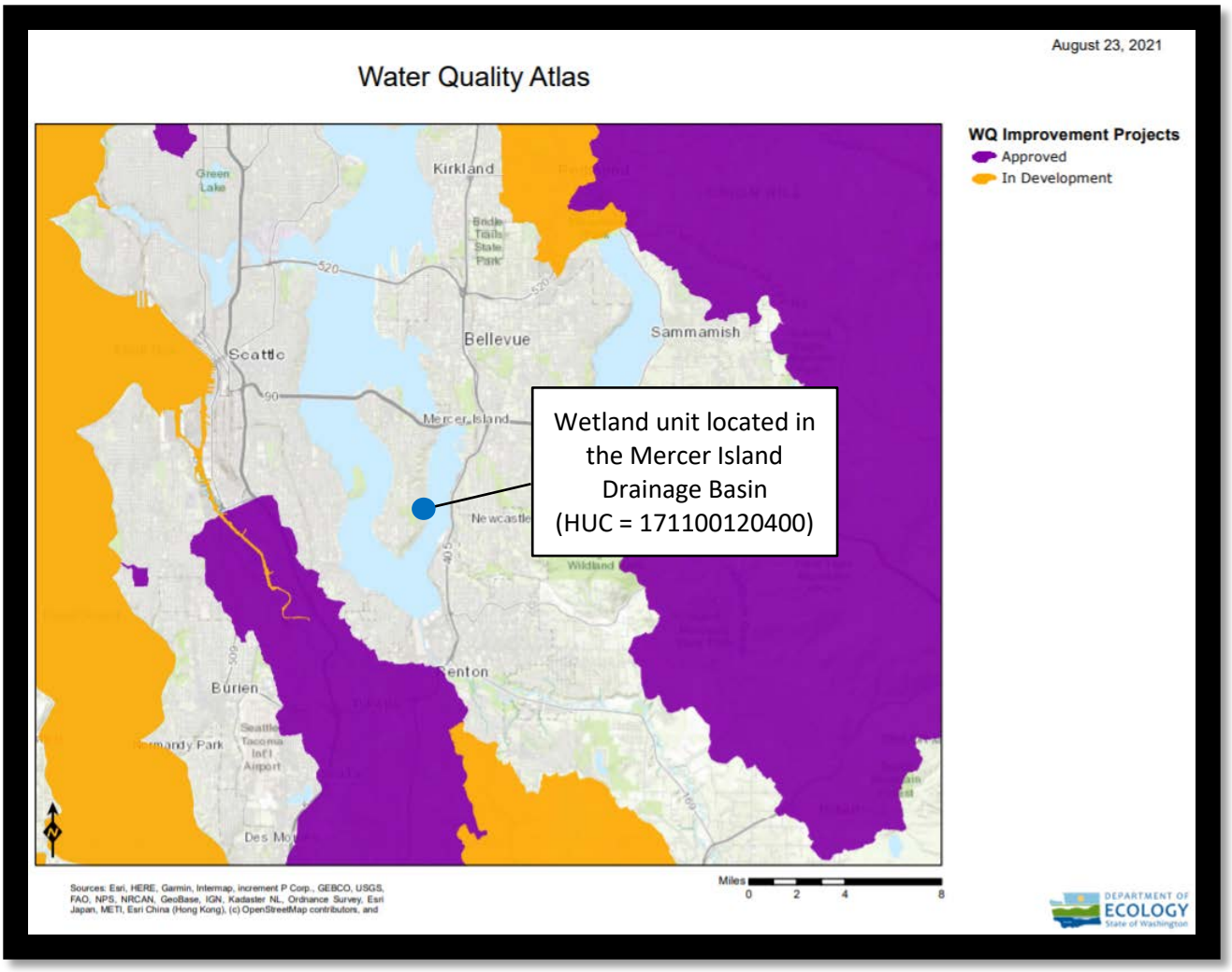

Figure 6. Screen-capture of TMDL list for WRIA in which unit is found – S3.3

Features depicted are not to scale. Sketches are based on available data and best professional judgment.