LYNNWOOD LINK EXTENSION

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Ecosystem Resources Technical Report

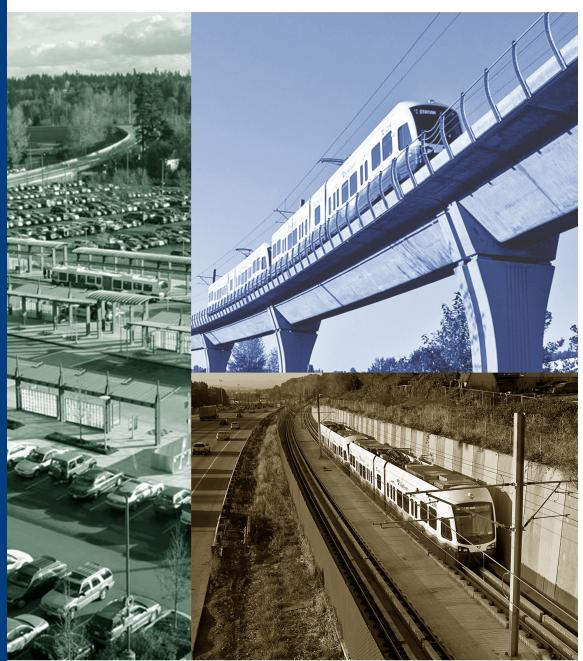






Table of Contents

Introduction					
1.1	Data Gathered				
	1.1.1 Agency and Public Contacts				
	1.1.2 Maps and Existing Documentation	1-1			
1.2	Guiding Regulations, Plans, and/or Policies	1-3			
1.3	Study Area	1-4			
	1.3.1 Aquatic Species and Habitat	1-4			
	1.3.2 Vegetation, Terrestrial Wildlife, and Wildlife Habitat	1-4			
	1.3.3 Wetlands	1-4			
1.4	Assumptions	1-5			
	1.4.1 Impact Assessment	1-5			
	1.4.2 Site Restoration	1-6			
	1.4.3 Avoiding and Minimizing Impacts on Sensitive Ecosystem Resources	1-6			
Study	y Objectives and Methods	2-1			
2.1	Aquatic Species and Habitat	2-1			
	2.1.1 Study Objectives	2-1			
	2.1.2 Methods	2-1			
2.2	Vegetation, Terrestrial Wildlife, and Wildlife Habitat	2-5			
	2.2.1 Study Objectives	2-5			
	2.2.2 Methods	2-5			
2.3	Wetlands	2-7			
	2.3.1 Study Objectives	2-7			
	2.3.2 Methods	2-7			
Affec	cted Environment	3-1			
3.1	Aquatic Species and Habitat	3-1			
	3.1.1 Drainage Basin	3-1			
	3.1.2 Streams in the Study Area	3-6			
	3.1.3 Threatened, Endangered, and Candidate Species	3-15			
	3.1.4 Tribal Fishing	3-16			
3.2					
	1.1 1.2 1.3 1.4 Stud 2.1 2.2 2.3	1.1.1 Agency and Public Contacts 1.1.2 Maps and Existing Documentation 1.2 Guiding Regulations, Plans, and/or Policies			

		3.2.2	Terrestrial Wildlife Species	3-17
		3.2.3	Threatened, Endangered, and Candidate Species	3-22
	3.3	Wetland	ds	3-23
		3.3.1	Hydrology	3-25
		3.3.2	Soils	3-25
		3.3.3	Vegetation	3-26
		3.3.4	Jurisdictional Determination	3-26
4	Envi	ronmenta	1 Consequences	4-1
	4.1	Aquatic	Species and Habitat	4-1
		4.1.1	Long-Term Impacts	4-2
		4.1.2	Construction Impacts	4-8
	4.2	Vegetat	tion, Terrestrial Wildlife, and Wildlife Habitat	4-10
		4.2.1	Long-Term Impacts	4-11
		4.2.2	Construction Impacts	4-15
	4.3	Wetland	ds	4-17
		4.3.1	Long-Term Impacts	4-17
		4.3.2	Construction Impacts	4-24
	4.4	Indirect	t and Secondary Impacts	4-27
	4.5	Cumulative Impacts		
	4.6	Potenti	al Mitigation Measures	4-29
_	DEE.	EDENICE	26	E 1

List of Tables

	Table	2-1. Minimum Buffer Requirements for Streams in the Study Area by Local Jurisdiction	2-4
	Table	3-1. Summary of Streams in the Lynnwood Link Extension Study Area	3-7
	Table	3-2. Land Cover Types in the Lynnwood Link Extension Study Area	3-18
	Table	3-3. Species of Concern That May Occur in the Lynnwood Link Extension Study Area	3-23
	Table	3-4. Summary of Field-Identified Wetlands within the Lynnwood Link Extension Study Area	3-24
	Table	3-5. Summary of Potential Wetlands within the Lynnwood Link Extension Study Area	3-25
	Table	4-1. Long-Term Impacts on Streams and Buffers by Project Alternative	4-6
	Table	4-2. Long-Term Impacts on Land Cover Types by Project Alternative	4-14
	Table	4-3. Long-Term Impacts on Wetlands and Buffers by Project Alternative	4-18
	Table	4-4. Construction Impacts on Wetlands and Buffers by Project Alternative	4-25
	Table	4-5. Recommended Wetland Mitigation Ratios for Projects in Western Washington a	4-31
	Table	4-6. City of Seattle Wetland Mitigation Ratiosa	4-31
	Table	4-7. City of Shoreline Wetland Mitigation Ratiosa	4-31
	Table	4-8. City of Mountlake Terrace Wetland Mitigation Ratiosa	4-31
	Table	4-9. City of Lynnwood Wetland Mitigation Ratiosa	4-31
List	of Figu	ıres	
	Figure	e 3-1. Streams and Fish Passage Barriers	3-3
	Figure	e 3-2a. Land Cover Types	3-19
	Figure	e 3-2b. Land Cover Types	3-20
	Figure	e 3-2c. Land Cover Types	3-21
List	of App	pendices	
	Α	Best Management Practices for Ecosystem Resources	
	В	Wetland Identification and Survey Report	
	С	Stream Photographs	
	D	Wetland and Stream Impacts	

ACRONYMS AND ABBREVIATIONS

BMP best management practice
CFR Code of Federal Regulations

CWA Clean Water Act

DNR Washington State Department of Natural Resources

Ecology Washington State Department of Ecology

EIS Environmental Impact Statement

ESA Endangered Species Act

GIS geographic information system

GPS global positioning system

HGM hydrogeomorphic

I-5 Interstate 5

NEPA National Environmental Policy Act

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory
OHWM ordinary high water mark
PAB palustrine aquatic bed
PCB polychlorinated biphenyl

PEM palustrine emergent
PFO palustrine forested

PGIS pollution-generating impervious surfaces

PHS Priority Habitats and Species

PSS palustrine scrub-shrub

RCW Revised Code of Washington
SEPA State Environmental Policy Act

Sound Transit Central Puget Sound Regional Transit Authority

SR State Route

USFWS U.S. Fish and Wildlife Service
WAC Washington Administrative Code

WDFW Washington Department of Fish and Wildlife

WRIA Water Resource Inventory Area

WSDOT Washington State Department of Transportation

1 INTRODUCTION

An ecosystem is defined by the interaction between plants, animals, microorganisms, and the physical environment in which they live. Ecosystems consist of living organisms, including humans, and the environment they inhabit. Understanding this relationship is basic to the environmental review process and the assessment of impacts on ecosystems.

This technical report addresses the ecosystem components—aquatic species and habitat; vegetation, terrestrial wildlife, and wildlife habitat; and wetlands—in the vicinity of the Lynnwood Link Extension alternatives. The report describes the affected environment as well as the expected long-term and construction-related impacts on these ecosystem resources for each of the project alternatives. It also discusses measures intended to avoid and minimize impacts, including compensatory mitigation for unavoidable impacts.

This report is organized into four main parts, beginning with a summary of data-gathering activities, identification of related laws and regulations, definition of the study area, and assumptions (Chapter 1); followed by Chapter 2, Study Objectives and Methods; Chapter 3, Affected Environment; and Chapter 4, Environmental Consequences. Appendices A through D provide additional project-related information and site photographs.

1.1 Data Gathered

The Central Puget Sound Regional Transit Authority (Sound Transit) performed a literature and data review to identify and characterize potentially affected resources in and near the project area. Before the field reconnaissance, existing documentation and information were compiled and reviewed so that the reconnaissance effort could focus on verifying data and filling information gaps. Existing ecosystem resource information was gathered from many local, state, and federal agencies. These information sources included published and unpublished reports, maps, Web sites, aerial photographs, and communication with agency staff familiar with resources within the project vicinity. The data sources are listed in the following subsections.

1.1.1 Agency and Public Contacts

Sound Transit contacted the following local jurisdictions:

- City of Seattle
- City of Shoreline
- City of Mountlake Terrace
- City of Lynnwood

1.1.2 Maps and Existing Documentation

Maps and other existing documents were an important resource used to identify ecosystem features within the project vicinity. The following resources were reviewed:

- National Wetlands Inventory (NWI) data (U.S. Fish and Wildlife Service [USFWS])
- Natural Resources Conservation Service (NRCS) Soil Survey maps
- Priority Habitats and Species (PHS) data (Washington Department of Fish and Wildlife [WDFW])
- SalmonScape fish data and maps (WDFW)
- StreamNet data and maps (StreamNet)
- City of Seattle *State of the Waters 2007* report (City of Seattle 2007)
- Basin characterization reports of Thornton Creek/West Lake Washington (Tetra Tech/KCM 2004a) and McAleer Creek/Lyon Creek (Tetra Tech/KCM 2004b)
- Stream habitat analysis for the City of Lynnwood (Jones and Stokes 2000)
- Swamp Creek Urban Growth Area Drainage Needs Report, including Scriber Creek Subbasin (Snohomish County 2002)
- Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (Kerwin 2001)
- Washington State Department of Natural Resources (DNR) Natural Heritage Program database
- A Catalog of Washington Streams and Salmon Utilization, Volume 1, Puget Sound Region (Williams et al. 1975)
- Critical area maps from local jurisdictions (Cities of Seattle, Shoreline, Mountlake Terrace, Lynnwood, King County, and Snohomish County)
- Sound Transit 2 Mitigation: Impact Summary and Analysis Memorandum, as well as geographic information system (GIS) data (ESA Adolfson 2010)
- Aerial photography of the project corridor (including the King County aerial photography database or Google Earth database)
- Regulatory compliance documents, such as the *North Link Light Rail Transit Project Final Supplemental Environmental Impact Statement* (Sound Transit 2006), critical area studies, wetland delineation reports, and stream studies by other agencies or consulting firms, as available
- Lists of listed and proposed endangered and threatened species and critical habitat, candidate species, and species of concern in King and Snohomish counties (USFWS)
- Endangered Species Act Status of West Coast Salmon and Steelhead List (NOAA Fisheries Service)
- Salmon Critical Habitat Designation Maps (NOAA Fisheries Service)
- USFWS Critical Habitat Maps for Threatened and Endangered Species
- List of Migratory Birds Protected by the Migratory Bird Treaty Act

1.2 Guiding Regulations, Plans, and/or Policies

Wetlands, vegetation, aquatic species and their habitat, wildlife and their habitat, and threatened and endangered species that may be affected by project activities are subject to the following regulations, plans, and policies:

Federal

- National Environmental Policy Act (NEPA)
- Sections 404, 402, and 401 of the Clean Water Act (CWA)
- Section 7 of the Endangered Species Act (ESA)
- Magnuson-Stevens Fishery Conservation and Management Act
- Bald and Golden Eagle Protection Act
- Migratory Bird Treaty Act
- Protection of Wetlands, Presidential Executive Order 11990
- Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (2008)
- Corps of Engineers Wetland Delineation Manual (1987)
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0 (Corps 2010)
- Coastal Zone Management Act

State

- Washington State Environmental Policy Act (SEPA)
- Hydraulic code (Washington Administrative Code [WAC] Chapter 220-110)
- Shoreline Management Act
- Washington State Growth Management Act
- Protection of Wetlands, Governor's Executive Order 89-10
- Protection of Wetlands, Governor's Executive Order 90-04
- Water Pollution Control Act 90.48 Revised Code of Washington (RCW)
- Wetland Mitigation in Washington State (Ecology et al. 2006)

Local

 Critical Area Ordinances for local jurisdictions (Cities of Seattle, Shoreline, Mountlake Terrace, and Lynnwood)

Miscellaneous

- Thornton Creek Draft Watershed Action Plan (Thornton Creek WMC 2001)
- Greater Lake Ballinger/McAleer Creek Watershed Study Draft Strategic Action Plan (Otak et al. 2009)
- Sound Transit Environmental Policy (April 2004)
- Sound Transit Executive Order No. 1, Establishing a Sustainability Initiative for Sound Transit (2007)
- Sound Transit Sustainability Plan (June 2011)

1.3 Study Area

1.3.1 Aquatic Species and Habitat

The study area for aquatic species and habitat includes all streams within 200 feet of the project alternatives or features; however, the description of the affected environment will acknowledge ecosystem features such as streams or natural corridors that are partly within or cross through the field reconnaissance survey area. For example, for streams, the study area will extend up to 100 feet upstream to 300 feet downstream (per WAC 73-201A-400) from where project limits cross the stream, as well as the entire stretch of any stream paralleling the project within 200 feet of the edge of the alternative.

1.3.2 Vegetation, Terrestrial Wildlife, and Wildlife Habitat

The study area for vegetation and wildlife habitat includes the project alignment or related facility footprint (i.e., the area in which clearing, grading, and the operation of construction machinery would disturb existing habitat) plus all areas within 200 feet of the project alternatives. This is the area in which project construction could affect vegetation cover and habitat quality for terrestrial wildlife species that may occur in the area. To evaluate wildlife potentially affected by project-related noise and human activity, project biologists also reviewed documented occurrences of sensitive wildlife species within 0.25 mile of the project alternatives.

1.3.3 Wetlands

The study area for wetlands encompasses the area within 200 feet of either side of the project alternatives or features. Within this area, a field reconnaissance survey was conducted to identify, map, and describe wetlands. The field reconnaissance survey area consisted of public rights-of-way administered by the Washington State Department of Transportation (WSDOT) or other public agencies within the study area. Portions of wetlands that extend beyond the field reconnaissance survey area and other potential wetlands outside of this survey area were identified based on visual observation from public areas during the field survey; current local, state, and federal wetland maps;

critical area reports; and aerial photographs. Wetland descriptions in this assessment include those wetlands that are partly within or cross through the study area.

1.4 Assumptions

1.4.1 Impact Assessment

This ecosystems impact assessment is based on examining the data from overlaying the conceptual designs for the light rail alternatives onto ecosystem resource base maps and applying an additional buffer (10 to 12 feet) along portions of the alignment to account for other features such as noise walls and retaining walls. The project footprint includes the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and ancillary features. Not all areas within the 10- to 12-foot analytical buffer on the project footprint would be subject to long-term impacts; some areas would be unaffected under the light rail alternatives or would be subject only to temporary impacts during construction. The acreage values resulting from this analytical approach provide a reasonable indication of the nature and magnitude of potential impacts and reflect differences among alternatives. To provide a conservatively high estimate of impacts, all impacts within these areas are considered long-term effects for this analysis. Sound Transit will re-evaluate this assumption and identify detailed temporary construction limits during the Final Environmental Impact Statement (EIS) and/or the permitting phase to distinguish which ecosystem resources could be restored. Although detailed construction limits are not defined at this early phase in the project design, potential construction limits have been estimated in the vicinity of streams, stream buffers, wetlands, and wetland buffers. These consist of areas where temporary impacts could extend beyond the analytical buffer defined for the analysis of long-term impacts. For the Draft EIS discussion on temporary construction impacts on vegetation, it is assumed that the level of temporary construction impacts would be commensurate with the level of long-term impacts.

The elevated guideway may create a rain shadow effect and in some cases may have a low clearance that could limit sunlight to vegetation underneath. This analysis conservatively assumes that the area under the elevated guideway would be a long-term impact on wetlands, wetland buffers, riparian buffers, and vegetation because of shading and precipitation interception from the structure. However, shrubs and herbaceous plants may be able to grow in some areas where the guideway is high enough above the ground and where stormwater runoff from the guideway can be directed to underlying plants. Sound Transit will re-evaluate this assumption during the Final EIS and/or the permitting phase to identify specific situations where ecosystem resources under the elevated guideway do not have a long-term impact and could be restored. Estimating this impact is complicated and depends on multiple variables, such as slope, aspect, soil conditions, and stormwater dispersion from the elevated guideway. All these variables make for a complicated impact analysis that exceeds the site and design information available during the Draft EIS. It is assumed that permanent impacts on wetlands associated with elevated sections of the alternatives can be avoided or further minimized during final design and construction.

This analysis also assumes that, with one possible exception, any streams crossed by the elevated guideway would be spanned with columns sited outside of the ordinary high water mark (OHWM). This exception is Scriber Creek within the Scriber Creek wetland complex; the stream lacks a defined channel and it is not possible to determine the exact location of the OHWM. Analyses in this report also assume that no new culverts would be added in any fish-bearing streams and existing culverts in fish-bearing streams would not be extended.

1.4.2 Site Restoration

For purposes of analysis and discussion of temporary construction impacts, Sound Transit assumes that areas supporting native upland or wetland vegetation and riparian corridors located outside of the project limits would be restored after construction is completed. Site restoration features would be installed immediately following construction in each project segment. The length of time that would be required for site restoration to effectively replace pre-project wetland functions would vary.

1.4.3 Avoiding and Minimizing Impacts on Sensitive Ecosystem Resources

Sound Transit assumes that best management practices (BMPs) would be implemented at appropriate locations and that they would perform as intended to avoid or minimize impacts. Also, where possible, project features would be designed and located to avoid or minimize impacts on sensitive resources. For example, support columns and fill slopes would be situated outside of sensitive areas to the maximum extent practicable. Appendix A provides a compilation of BMPs that could be used to avoid or minimize project construction and operational impacts on sensitive ecosystem resources, including state and federal protected species and their habitats, wetlands, and aquatic resources. These BMPs are either required by state or federal agencies to obtain the permits that would be necessary for the project or may be required to comply with permit conditions.

2 STUDY OBJECTIVES AND METHODS

This chapter describes the objectives and methods used to study the aquatic species and habitat; vegetation, terrestrial wildlife, and wildlife habitat; and wetland resources. Sound Transit and the Federal Transit Administration also prepared and circulated the *Lynnwood Link Technical Methodologies Report* in April 2012, and invited cooperating and participating agencies to review and comment. The following discussion summarizes the approach defined in the original methodologies report, but also incorporates further detail that became available after field surveys and other reconnaissance were complete.

2.1 Aquatic Species and Habitat

2.1.1 Study Objectives

This report is intended to provide information in support of Sound Transit's NEPA and SEPA analyses, assist project planning, and facilitate permitting. Discussions in this report identify and describe aquatic habitats and species in the study area, evaluate the potential impacts of each alternative within each segment, and describe measures to avoid, minimize, or compensate for impacts.

2.1.2 Methods

Aquatic species and habitat (streams) were identified through existing maps and documents, communication with local municipality staff, and a field reconnaissance. State and local regulations and guidance were reviewed to assist in identifying stream types and to confirm project compliance with existing laws.

Review of Existing Information

Sound Transit reviewed existing information to identify and characterize aquatic species and habitats that would be potentially affected by the project (see Section 1.1.2). Sources were reviewed to collect information regarding the presence of resident and anadromous fish species and habitat (streams) near the study area. For this analysis, fish species with the potential to be present in a particular stream segment (based on the species' range, habitat associations, and expected upstream extent of use in the stream in question) were assumed to be present, unless their absence was documented. Existing maps and documentation were gathered, reviewed in the office, and then evaluated in the field within the reconnaissance survey area. Existing digital GIS data were gathered from the Cities of Seattle, Shoreline, Mountlake Terrace, and Lynnwood. GIS data from previous reconnaissance work performed for the Sound Transit 2 light rail projects (ESA Adolfson 2010) were also reviewed.

Agency Coordination

Staff members from the Cities of Seattle, Shoreline, Mountlake Terrace, and Lynnwood were contacted regarding their critical area maps and any other resources that may have been identified subsequent to finalization of these maps.

Identification of Threatened, Endangered, and Candidate Species

Sound Transit reviewed several data sources to determine the known or expected presence of ESA-listed threatened or endangered species in project area streams, or of species that are proposed for listing. Sources included online data from SalmonScape (WDFW 2012a) and PHS (WDFW 2012b), as well as reports prepared by the City of Seattle (2007), Tetra Tech/KCM (2004a, 2004b), Jones and Stokes (2000), and Kerwin (2001). The potential for individual species to use habitats in the Lynnwood Link Extension study area was evaluated based on documented observations and the known or expected upstream extent of each species' use of each stream.

Stream Classifications and Buffer Width Designations

Streams in the study area were assigned preliminary classifications based on the systems used by the Cities of Seattle¹, Shoreline, Mountlake Terrace, and Lynnwood, respectively. Each of these stream classification systems classifies and assigns protective buffers to streams based on the presence of fish and whether water flow is perennial or seasonal. Each system is hierarchical; that is, a stream is assigned to a particular category only if it does not meet the criteria of any higher ranking categories.

The purpose of the preliminary assignments in this document was to identify stream buffer areas that could be affected under the light rail alternatives to allow a comparison of the potential effects of the alternatives. For stream segments that may be affected by project construction, stream classification determinations will be made in accordance with the applicable local jurisdiction's critical areas ordinance during the Final EIS or permitting phase of this project. These determinations will also be informed by determinations of presumed fish use according to WAC 222-16-031.

The categories of the City of Seattle classification system (Seattle Municipal Code 25.09.020) are as follows:

- **Type 1:** Waters inventoried as "shorelines of the state" under RCW Chapter 90.58, but not including periodically inundated areas of their associated wetlands
- Type 2: Segments of natural waters that have high value to fish for spawning, rearing, or migration (i.e., having a defined channel width of at least 20 feet and a gradient less than 4 percent), or that are used for off-channel habitat
- **Type 3:** Segments of natural waters that have moderate to slight value to fish for spawning, rearing, or migration (i.e., having a defined channel width of at least 2 feet and a gradient less than 16 percent)

_

2-2

¹ Only applicable to development on publicly or privately owned parcels.

- Type 4: Segments of natural waters with perennial flow, lacking fish habitat
- Type 5: Segments of natural waters with seasonal flow only, lacking fish habitat

The categories of the City of Shoreline classification system (Shoreline Municipal Code 20.80.470) are as follows:

- **Type I:** Streams identified as "shorelines of the state" under the City's Shoreline Master Program
- Type II: Streams that are used by or that have habitat value for salmonids
- Type III: Streams with a channel width of at least 2 feet that are not used by salmonids
- Type IV: Streams with a channel width less than 2 feet that are not used by salmonids
- **Piped stream segments:** Segments of streams, regardless of their type, that are fully enclosed in an underground pipe or culvert

The categories of the City of Mountlake Terrace classification system (Mountlake Terrace Municipal Code 16.15.080) are as follows:

- Class I: Natural streams identified as "shorelines of the state" under the City's Shoreline Master Program
- Class II: Natural streams that have documented or significant potential for anadromous fish use
- Class III: Natural streams that are not used by anadromous fish
- Class IV: Natural streams with a channel width less than 2 feet that are not used by salmonid fish
- Class V: Natural streams that are seasonal and do not contain fish

The categories of the City of Lynnwood classification system (Lynnwood Municipal Code 17.10.060) are as follows:

- Category I: Scriber Creek, Swamp Creek, Lunds Creek, and Halls Creek
- Category II: Streams that flow year-round or that are used by salmonids
- Category III: Streams that are naturally intermittent and are not used by salmonids

Cities have jurisdiction over stream buffers, which are regulated through each City's Critical Areas Ordinance. Table 2-1 lists the stream buffer widths for the various stream classifications. The distances presented below are minimum requirements; wider buffers may be required in response to site-specific conditions (e.g., the presence of ESA-listed fish species) or the type and intensity of proposed uses.

Table 2-1. Minimum Buffer Requirements for Streams in the Study Area by Local Jurisdiction

Jurisdiction	Stream Classification	Buffer Requirement (feet)
City of Seattle ^a	Type 1	100 feet
	Type 2/3 – anadromous fish	75 feet
	Type 2/3 – no anadromous fish	50 feet
	Type 4	50 feet
	Type 5	50 feet
City of Shoreline ^b	Type I	115 feet
	Type II	75 feet
	Type III	35 feet
	Type IV	25 feet
	Piped	10 feet
City of Mountlake Terrace ^c	Class I	150 feet
	Class II	100 feet
	Class III	65 feet
	Class IV	50 feet
	Class V	Based on review
City of Lynnwood ^d	Category I	100 feet
	Category II	60 feet
	Category III	35 feet

^a Seattle Municipal Code 25.09.020 (D5) and 25.09.200.A.3.d.1. Only applicable to development on publicly or privately owned parcels.

Stream Determination and Field Reconnaissance

A detailed field reconnaissance survey was conducted in the study area to identify, map, and describe aquatic species (fish) and habitat (streams) within the WSDOT or other public rights-of-way. General information was collected in the field and stream courses were estimated and mapped using global positioning system (GPS). These documented streams will be included in the Draft EIS aquatic species and habitat findings.

Streams or potential streams outside of the WSDOT or other public rights-of-way were identified based on field reconnaissance from public areas; current local, state, and federal habitat maps and reports; and aerial photographs. These areas outside of the WSDOT or other public rights-of-way that appear to be streams will be included in the Draft EIS stream findings to provide a conservative estimate of the alternatives' impacts.

Reconnaissance-level aquatic habitat surveys were conducted 300 feet downstream and 100 feet upstream of each proposed stream crossing, and along the entire stretch of any stream paralleling the project within 200 feet from the edge of an alternative. Aquatic habitat suitability (functional status) was evaluated based on fish life histories, spawning and rearing habitat requirements, seasonal use, and field observations. The following stream habitat information was obtained during a pre-field review of existing literature, supplemented by qualitative observations gathered during the field reconnaissance: overall rating, water quality, instream habitat, riparian habitat, and anthropogenic factors. Additionally, aquatic species habitat was described, when possible and

^b Shoreline Municipal Code 20.80.470 and 20.80.480

^c Mountlake Terrace Municipal Code 16.15.080 and 16.15.090

^d Lynnwood Municipal Code 17.10.060 and 17.10.061

applicable, in a subbasin context. Habitat was assessed with the assumption that anadromous fish may one day be able to access the area even if they cannot under present conditions. To the extent information was currently available or could be readily ascertained in the field, downstream impediments to fish passage were identified for each stream reach.

Mapping

Each stream identified in the study area received a unique identifier that was tracked in a GIS database. For streams identified during the field reconnaissance, the OHWM was estimated and mapped using GPS. Streams that extend beyond the field reconnaissance survey area and other previously mapped streams outside of the WSDOT or other public rights-of-way were also incorporated into the GIS database. The OHWMs of all streams that may be affected by project construction will be delineated during the Final EIS or permitting phase of this project. Final stream classification determinations, in accordance with local jurisdictions' critical areas ordinances, will also be made at that time.

Impact Assessment

To evaluate the impacts on aquatic resources, the project and construction limits were overlain onto ecosystem resource base maps. The project limits include the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and ancillary features. Impact areas were determined as the area of intersection between the project and construction limits and the stream and/or buffers. This assessment also considered loss of riparian function (based on the amount of clearing, filling, and/or excavation as a result of the project) and other direct and indirect impacts on streams. The impacts assessment for aquatic resources also considered differences in the amount of impervious surface under the alternatives.

2.2 Vegetation, Terrestrial Wildlife, and Wildlife Habitat

2.2.1 Study Objectives

This report is intended to provide information in support of Sound Transit's NEPA and SEPA analyses, assist project planning, and facilitate permitting. Discussions in this report identify and describe vegetation and wildlife resources in the study area, evaluate the potential impacts of each alternative within each segment, and describe measures to avoid, minimize, or compensate for impacts.

2.2.2 Methods

To establish the basis for analyzing the effects on vegetation, terrestrial wildlife, and wildlife habitat, Sound Transit delineated and classified land cover on aerial photographs and visited a sample of these areas during the field reconnaissance survey. Major plant communities and habitat types were identified and classified based on the structural categories defined in *Wildlife-Habitat Relationships in Oregon and Washington* (Johnson and O'Neil 2001).

To support the analysis of effects on wildlife, Sound Transit identified wildlife species that are associated with the land cover types in the study area, and with specific habitat elements within each cover type. Sound Transit also assessed locations of known ecologically sensitive areas and important wildlife occurrences that may be sensitive to disturbance from noise or human presence. This information was supplemented with data gathered during the field reconnaissance visits.

Sound Transit reviewed Natural Heritage Program data from DNR for known locations of rare plant species or rare plant communities within the study area. They also studied PHS data for known locations of wildlife species that are listed or proposed for listing under ESA or that are a management concern for WDFW, as well as habitats with unique or significant value. Each major plant community and habitat type that exists in the study area is described in this report. The relative function of each plant community in providing habitat for wildlife is described based on reconnaissance-level field observations, literature review (including *Wildlife-Habitat Relationships in Oregon and Washington* [Johnson and O'Neil 2001]), professional opinion, and agency consultation. Sensitive information regarding the locations of proposed, candidate, and listed species and habitats is not mapped to protect the integrity of this information.

Biologists conducted a limited field reconnaissance to verify habitat mapping and to observe wildlife species in the vicinity of the study area. A wildlife biologist conducted a site visit on March 30, 2012. Biologists conducting site visits to gather data on wetlands and streams also collected data on wildlife use of the area between March and July 2012. No formal surveys were conducted for any wildlife species. However, if the project alternative site were located within the known or expected range of a particular species, and if habitat for that species were present within the study area, then the species was assumed to be present.

Sound Transit evaluated the potential effects of the proposed action on vegetation and wildlife using a variety of methods and resources, including the following:

- GIS analysis to determine the acreage, type, and location of affected cover types
- Review of existing literature on the effects of project construction, use, and maintenance on vegetation and wildlife
- Review of WDFW management recommendations for priority habitats and species

To evaluate the impacts to vegetation and wildlife resources, project limits were overlain onto ecosystem resource base maps in GIS. The project limits include the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and ancillary features. Impact areas were determined as the area of intersection between the project limits and land cover.

2.3 Wetlands

This section describes the study objectives and methods used to characterize wetlands within the study area and to identify potential impacts.

2.3.1 Study Objectives

Existing data and previous reconnaissance surveys show that wetlands are located within the project limits for all project alternatives. As a result, specific objectives of this study include the following:

- Identify, map, and describe the existing conditions of the wetlands and wetland buffers located within 200 feet of either side of the proposed project alternatives
- Determine each project alternative's impacts on wetlands
- Describe measures to avoid, minimize, or compensate for impacts

2.3.2 Methods

Wetlands were identified through existing maps and documents, communication with local municipality staff, and a field reconnaissance. Federal, state, and local regulations and guidance were consulted to assist in classifying and rating wetlands and to confirm project compliance with existing laws.

Review of Existing Maps and Documentation

Existing maps and documentation were gathered from a variety of sources (see Section 1.1.2), reviewed in the office, and then evaluated in the field within the field reconnaissance survey area. Existing digital GIS data were gathered from the Cities of Seattle, Shoreline, Mountlake Terrace, and Lynnwood; the USFWS NWI; and Sound Transit (previous reconnaissance performed for the Sound Transit 2 light rail projects [ESA Adolfson 2010]).

Agency Coordination

Sound Transit contacted staff from the Cities of Seattle, Shoreline, Mountlake Terrace, and Lynnwood for their critical area maps and any wetlands that may have been identified subsequent to finalization of these maps. This search included documentation associated with recent permit applications or code violations.

Wetland Determination and Field Reconnaissance

Wetlands were identified in the field reconnaissance survey area (defined as public rights-of-way administered by WSDOT or other public agencies) using criteria provided in the Corps of Engineers Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0 (2010). Wetland boundary delineations were not conducted as part of this effort. Instead, wetland boundaries were estimated in the field and mapped using GPS, which were incorporated into the project GIS.

Wetlands that extend beyond the field reconnaissance survey area and other potential wetlands outside of the WSDOT or other public rights-of-way that appear to meet the wetland criteria were also incorporated into the GIS database. Ground-truthing and data collection were not possible for these areas because no rights of entry were obtained for properties outside of the field reconnaissance survey area. Potential wetlands were identified by visual observation from public areas during the field reconnaissance; current local, state, and federal wetland maps; and critical area report figures or plans. Boundaries of potential wetlands were added to the project GIS database by incorporating GIS layers prepared by others or estimating and digitizing boundaries over aerial photographs. All wetlands in the study area will be delineated during the Final EIS and/or permitting phase of this project.

Identified wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) and A Hydrogeomorphic Classification for Wetlands (Brinson 1993). The Washington State Department of Ecology's (Ecology) Washington State Wetland Rating System for Western Washington – Revised (Hruby 2004) was used to rate wetlands. Wetlands were also rated according to local regulations. The Cities of Seattle, Mountlake Terrace, and Lynnwood use the Ecology rating system (Seattle Municipal Code 25.09.160A, Mountlake Terrace Municipal Code 16.15.080, and Lynnwood Municipal Code 17.10.050), while the City of Shoreline uses its own rating system (Shoreline Municipal Code 20.80.320). Wetland ratings are used to determine required buffer widths and compensatory mitigation ratios. Generally, the required buffer width and compensatory mitigation ratio increase in conjunction with higher wetland ratings.

Additional information on methods used for wetland identification, delineation, classification, rating, and buffer width designation is provided in the Wetland Identification and Survey Report (Appendix B).

Mapping

Each wetland identified in the study area received a unique identifier that was tracked in a GIS database. Wetlands were named based on whether they were field-identified wetlands ("W") or not field-identified/potential wetlands ("PW"), the city they are located in (Seattle = SE, Shoreline = SH, Mountlake Terrace = MT, or Lynnwood = LY), and the order they were encountered in the field (1,2,3, etc.). For example, Wetland WSE2 is the second field-identified wetland in Seattle. The field reconnaissance was conducted moving generally from south to north through the study area. For wetlands identified during the field reconnaissance, boundaries were estimated and mapped using GPS. Wetland boundaries were not mapped and surveyed. Wetlands that extend beyond the field reconnaissance survey area and other potential wetlands outside of the WSDOT or other public rights-of-way were also incorporated into the GIS database. These included wetlands identified by visual observation from public areas during the field reconnaissance; current local, state, and federal wetland maps; and critical area report figures or plans. These wetland boundaries were added to the project GIS database by adding existing GIS layers or estimating and digitizing boundaries. All wetlands within the study area will be delineated during the Final EIS and/or permitting phase of this project.

Impact Assessment

To evaluate wetland impacts, the project and construction limits were overlain onto ecosystem resource base maps. The project limits include the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and ancillary features. Impact areas were determined as the area of intersection between the project and construction limits and the wetland and/or buffers. This assessment also considered loss of wetland function (based on the amount of clearing, filling, and/or excavation as a result of the project) and other direct and indirect impacts on wetlands.

3 AFFECTED ENVIRONMENT

3.1 Aquatic Species and Habitat

The Lynnwood Link Extension would be constructed in an urban area where aquatic habitats have already been subjected to a moderate to high degree of alteration. The degree of alteration varies from stream to stream, with the greatest alteration occurring where urban development is the greatest. Some of the smaller streams and headwater reaches have been placed in conveyance systems consisting of pipes and ditches, interfering with natural flow patterns and processes such as groundwater recharge.

3.1.1 Drainage Basin

The study area for the Lynnwood Link Extension is drained by three stream systems: Thornton Creek, McAleer Creek, and Scriber Creek (Figure 3-1a through Figure 3-1c). This map also shows the locations of fish passage barriers within and near the study area, as well as the locations of proposed stream crossings under the light rail alternatives. Salmonid species that are known or expected to occur at locations where project alternatives cross streams are identified in text boxes at those locations on the map. All three streams drain to Lake Washington. These waterways also provide essential fish habitat for federally managed species; such habitat is protected under the Magnuson-Stevens Fishery Conservation and Management Act. Thornton and McAleer creeks drain directly to the lake, while water from Scriber Creek flows to the lake via Swamp Creek and the Sammamish Slough. Lake Washington is the second-largest natural lake in Washington, with a surface area of 22,138 acres. The lake lies at an elevation of 22 feet and has a maximum depth of 214 feet. The major sources of water that enter the lake are the Cedar River (55 percent of the average inflow) and the Sammamish River (27 percent of the average inflow). The remainder of inflow comes from May Creek, Coal Creek, Lyon Creek, McAleer Creek, Thornton Creek, and other smaller streams. The lake drains to Puget Sound through the Lake Washington Ship Canal—an artificial waterway constructed in 1916.

Many species of fish, both native and introduced, inhabit Lake Washington. Discussions in this document focus on salmonids—anadromous² salmonids in particular—because these species are a management concern due to habitat degradation and population declines. Salmonids in the Lake Washington watershed are a mix of native and introduced stocks. For example, sockeye salmon (*Oncorhynchus nerka*) that spawn in some areas appear to be descendants of introduced fish while those in others may be native fish (Hendry et al. 1996). Chinook salmon (*O. tshamytscha*) naturally reproduce in many of the watershed streams and are supplemented by hatchery production of fish originally from the Green River (Weitkamp and Ruggerone 2000). Coho salmon (*O. kisutch*) in the watershed also appear to be a mix of naturally produced and hatchery fish (personal communication, K. Walter, Muckleshoot Indian Tribe, March 1, 2013). Chum salmon (*O. keta*) and pink salmon

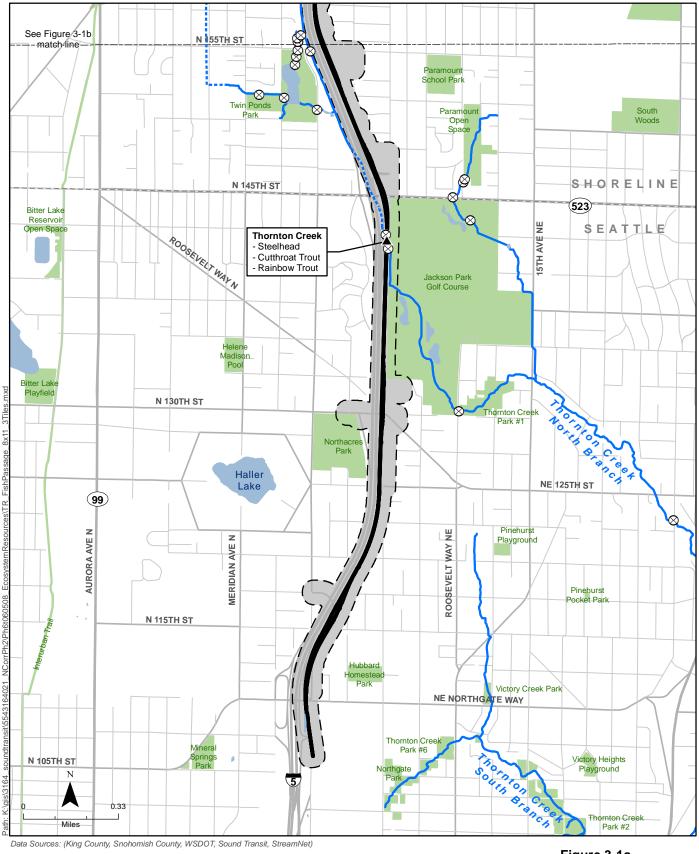
² Anadromous fish begin their life in fresh water, migrate to marine waters to reach maturity, and then return to fresh water as adults to spawn.

(O. gorbuscha) have also been observed. Rainbow trout (O. mykiss) and steelhead trout (the anadromous life form of O. mykiss) are a mix of introduced hatchery and native stocks. Cutthroat trout (O. clarkii), in both resident and anadromous (i.e., sea-run) forms, are also present in the watershed. Kokanee salmon (a form of sockeye that remains in freshwater habitats throughout its life cycle) are also found in the lake and some of its tributary streams. Several species of introduced fish, such as yellow perch (Perca flavescens) and smallmouth bass (Micropterus dolomeiui), are very abundant. Other introduced species include tench (Tinca tinca) and common carp (Cyprinus carpio), both native to Europe. The following paragraphs provide additional information about native salmonids.

Adult Chinook salmon in the study area belong to the Sammamish stock (WDFW 2013). Most spawning takes place in North, Swamp, Bear, Little Bear, Thornton, McAleer, Cottage Lake, and Issaquah creeks, as well as in the Sammamish River (WDFW 2012c). Run sizes fluctuate considerably; between 2001 and 2012, escapement estimates based on counts of live Chinook in Bear Creek and Cottage Lake Creek ranged between 74 and 531 (WDFW 2013). Spawning in Lake Washington tributary streams generally occurs from mid-September through October (WDFW 2012c). Fry emerge from redds during January, February, and March (Celedonia et al. 2008). These juveniles appear to have two rearing strategies: 1) rear in streams until May and then emigrate downstream to lake habitat during May or June; or 2) emigrate shortly after emergence and rear in the lake as fry for 3 to 5 months (Celedonia et al. 2008). Most juvenile Chinook salmon leave Lake Washington and enter Puget Sound in June and July (DeVries et al. 2004).

Steelhead, as well as their resident life form (rainbow trout), are present in the Lake Washington system but are not abundant. Based on chronically low redd counts in Cedar River, Issaquah Creek, and Bear Creek, as well as severe declines in 2000 and 2001, the status of the Lake Washington winter steelhead stock is rated as critical (WDFW 2012c). Steelhead spawn in rivers and tributaries throughout the Lake Washington basin, including Thornton Creek and McAleer Creek, generally between mid-December and early June (WDFW 2012c). Naturally produced juvenile steelhead either migrate to sea or remain in freshwater as resident rainbow trout (Kerwin 2001). Most juvenile steelhead in the Lake Washington basin remain in streams for 1 to 3 years (Kerwin 2001). Steelhead smolts move into Lake Washington from tributary streams in April on their way out of the system. They stay in the lake for a month or two, migrating out before mid-June (Kerwin 2001). Resident rainbow trout are present in some streams all year long.

Coho salmon in the study area belong to the Lake Washington/Sammamish Tribs stock (WDFW 2012c). Based on low escapement values and a long-term negative trend, the stock is rated as depressed (WDFW 2012c). Spawning occurs in nearly all tributaries, including Thornton Creek, McAleer Creek, and Scriber Creek, generally from late October to mid-December (WDFW 2012a). Fry emerge in late winter and rear in freshwater habitats for 12 to 14 months before migrating through Lake Washington to marine habitats in April and May (Kerwin 2001).



Light Rail Alternatives

Study Area

City Boundary

County Boundary Park

Open Stream

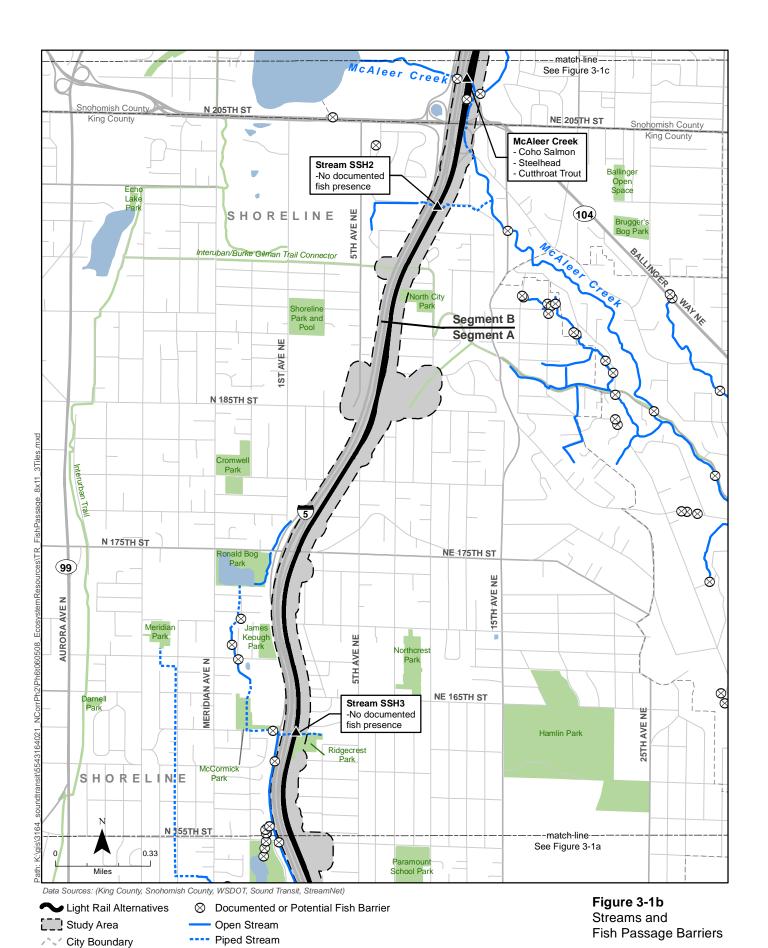
Piped Stream

Waterbody

Stream Crossing Note: Text boxes where project alternatives cross streams identify the salmonid species known or expected to occur at those specific locations, and are not intended to depict upstream limits of distribution.

Figure 3-1a Streams and Fish Passage Barriers

Lynnwood Link Extension



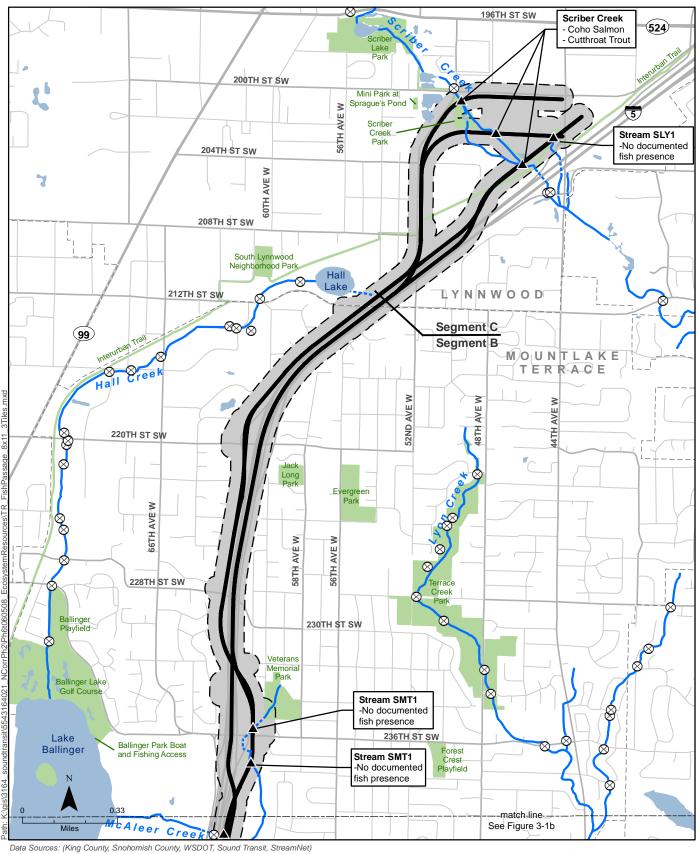
Stream Crossing Note: Text boxes where project alternatives cross streams identify the salmonid species known or expected to occur at those specific locations, and are not intended to depict upstream limits of distribution.

Lynnwood Link Extension

County Boundary

Park

Waterbody



Light Rail Alternatives Study Area

County Boundary

Park

City Boundary

Documented or Potential Fish Barrier

Open Stream

Piped Stream

Waterbody

Stream Crossing Note: Text boxes where project alternatives cross streams identify the salmonid species known or expected to occur at those specific locations, and are not intended to depict upstream limits of distribution.

Figure 3-1c Streams and Fish Passage Barriers

Lynnwood Link Extension

Sockeye salmon that use habitats in the study area belong to the Lake Washington/Sammamish Tribs stock (WDFW 2012c). The primary spawning areas for this stock are in the Big Bear Creek system and Issaquah Creek (WDFW 2012c), but sockeye also use nearly all of the larger tributary streams, including Thornton Creek and McAleer Creek. WDFW (2012c) rates the stock as healthy. Between 1991 and 2008, escapement values from Big Bear Creek averaged around 7,400 spawning adults in odd-numbered years and 40,000 adults in even-numbered years (WDFW 2013). Spawning for this stock generally occurs from early September through late December (WDFW 2012c). After emerging from spawning gravel in winter and early spring, juvenile sockeye migrate to Lake Washington, where they rear for 1 to 3 years (Kerwin 2001). Juveniles enter the lake as fry during late winter and early spring, and most rear in the lake for 1 year.

Coastal cutthroat trout in both resident and anadromous forms are present in the Lake Washington basin in moderate abundance. Resident fish are present all year long. Sea-run cutthroat spawn over a long period, from winter through May (WDFW 2013). They seek smaller streams with minimal flow minimal and small substrates; cutthroat trout are commonly found in the uppermost reaches of streams, in areas that are too shallow for other salmonids (WDFW 2013). Most sea-run cutthroat rear in stream habitats for 2 to 3 years before migrating to salt water (WDFW 2013).

Bull trout (*Salvelinus confluentus*) have been observed entering Lake Washington through the fish ladder viewing area at the locks, where every year, one or two fish are seen traveling into the lake. Many researchers believe that these fish are seasonal transient strays rather than fish produced within the system. Surveys to date have not produced conclusive evidence for the presence or absence of bull trout in the Lake Washington system, outside of a self-sustaining population in the Cedar River drainage above Lower Cedar Falls (King County Department of Natural Resources 2000). For regulatory purposes, USFWS assumes that natural production is possible in the system.

3.1.2 Streams in the Study Area

Discussions in this subsection describe the streams that are present in the study area and provide information about fish use, fish habitat quality, and riparian habitat conditions in the streams and their tributaries. Anthropogenic factors that influence habitat quality for each stream are also identified. Information is organized by the three major stream systems in the study area, progressing from south to north. Table 3-1 summarizes the stream information in the study area. Appendix C includes photographs of the streams.

Thornton Creek

The 7,200-acre Thornton Creek basin drains a substantial portion of northeastern Seattle and most of Shoreline. The stream flows generally south and east before discharging to Lake Washington.

Table 3-1. Summary of Streams in the Lynnwood Link Extension Study Area

Stream Name ^a	Stream Index No. ^b	Fish Habitat Status ^c	Local Jurisdiction	Local Jurisdiction Stream Classification	Local Jurisdiction Buffer Width (feet)
Thornton Creek, North Branch	08.0030	Documented	Seattle	Type 3 ^d	75 ^d
Thornton Creek Tributary (SSH3)	08.0046	Unknown	Shoreline	Piped	10
McAleer Creek Tributary (SSH2)	NA	Unknown (Presumed Potential)	Shoreline	Piped	10
McAleer Creek	08.0049	Documented	Shoreline	Type II	115
McAleer Creek	08.0049	Documented	Mountlake Terrace	Class II	100
McAleer Creek Tributary (SMT1)	08.0050	Potential	Mountlake Terrace	Class III	65
Scriber Creek	08.0061	Documented	Lynnwood	Category I	100
Scriber Creek Tributary (SLY1)	08.0064	Potential	Lynnwood	Category III	35

Streams other than Thornton Creek, McAleer Creek, and Scriber Creek are identified with alphanumeric codes: SYYn.
S stands for stream; YY = two-letter code for local jurisdiction (SE = Seattle, SH = Shoreline, MT = Mountlake Terrace, LY = Lynnwood); n = sequential identification number

NA = not applicable

Thornton Creek drains the southern half of the study area (south of NE 185th Street, approximately). Segments of the North Branch of Thornton Creek (WRIA No. 08.0030) within and immediately upstream of the Jackson Park Golf Course fall within the study area. Also present in the study area is a small watercourse (WRIA No. 08.0046) that originates in a ravine near Ridgecrest Park east of Interstate 5 (I-5), passes through a culvert under the park and the highway, and joins the North Branch near North 163rd Street, west of I-5. The entire length of the watercourse is piped through the study area. The South Branch of Thornton Creek, also known as Maple Leaf Creek, originates in wetlands near Northgate, North Seattle Community College, and I-5 (City of Seattle 2007). The stream drains the southernmost portion of the study area. The two branches join to form the main stream near the Meadowbrook stormwater detention pond in northeast Seattle. The study area does not include any portions of the South Branch or the main stem of Thornton Creek.

The North Branch of Thornton Creek (hereafter referred to as Thornton Creek in this report) originates near Ronald Bog in Shoreline and flows 5 miles before joining the South Branch. Portions of the stream above and within the study area are as follows, progressing from upstream to downstream:

• After exiting the piped segment immediately south of Ronald Bog, Thornton Creek passes through backyards, roadside ditches, and culverts along and through the I-5 corridor. The stream flows at the surface from approximately North 167th Street through most of the

b Water Resource Inventory Area (WRIA) identification numbers according to Williams et al. (1975).

Documented = Fish have been observed in the study area; Potential = Potential fish habitat is present, based on field assessment of stream width and gradient, but stream segments in the study area are upstream of human-caused fish passage barriers; Unknown = No fish presence data are available and stream segments are contained within culverts in the study area.

d Only applicable to development on publicly or privately owned parcels within the city of Seattle.

- solid waste transfer station, re-enters pipes under the King County Metro bus facility, then flows at the surface most of the way to Twin Ponds (Tetra Tech/KCM 2004a).
- Downstream from Twin Ponds, the creek passes through a small wetland called Peverly Pond and eventually through a concrete-lined channel into a 1,500-foot-long, 72-inch-wide culvert under I-5.
- Downstream of the I-5 culvert, the stream enters the study area, emerging from the I-5 culvert south of North 145th Street and west of 5th Avenue NE, passing through a culvert under 5th Avenue NE, and then flowing in a ditch between 5th Avenue NE and the Jackson Park Golf Course (Tetra Tech/KCM 2004a).

North of the Jackson Park Golf Course, a tributary to Thornton Creek (Stream SSH3) originates near Ridgecrest Park east of I-5. The tributary enters a culvert before crossing the study area and I-5, emptying into Thornton Creek west of the study area.

Anthropogenic Factors

Overall, approximately 59 percent of the Thornton Creek basin is covered by impervious surfaces such as roads, buildings, and parking lots (City of Seattle 2007). In portions of the basin north of the Seattle city limits, the City of Shoreline calculated existing impervious area values ranging between 45 and 48 percent (Tetra Tech/KCM 2004a). Kerwin (2001) estimated the effective impervious area in the basin at 31.9 percent. The City of Seattle (2007) identified the following problematic conditions in the system, due primarily to urban development in the basin:

- Altered hydrology, with high and flashy flows
- Degraded water quality, with temperatures and fecal coliform bacteria frequently at levels above state standards
- Excess nutrients under non-storm flow conditions
- Channel incision and degraded instream habitat, due to restricted channel width and loss of hydrologic connectivity to the floodplain
- Depressed levels of coarse sediment, instream wood, and riparian forest
- Fish passage barriers that limit anadromous fish to 30 percent of the watercourse length
- High pre-spawn mortality rates of coho salmon

Fish Use

The lower reaches of Thornton Creek support spawning anadromous salmonids. Chinook, coho, and sockeye salmon redds have been observed in the North Branch as far upstream as 35th Avenue NE and NE 115th Street, approximately 2.5 miles downstream of the study area (City of Seattle 2007; WDFW 2012a). Individual steelhead trout and chum salmon (the latter likely being strays from other basins [Kerwin 2001]) have also been sighted in the lower portions of the stream (McMillan 2007 *in* City of Seattle 2007). The City of Seattle (2007) identified at least 4 total barriers and 10 partial barriers to fish passage between the study area and the downstream reaches that support anadromous spawning. However, the observation in 2004 of an adult steelhead trout

upstream of Twin Ponds suggests that none of these structures, including the culvert under I-5, may present an absolute barrier to fish passage (Tetra Tech/KCM 2004a). Notably, steelhead are renowned for their ability to negotiate what would be considered barriers for most other salmonids (Tetra Tech/KCM 2004a). Moving upstream from the study area, WDFW (2011) characterized the culvert under I-5 as a partial barrier (33 percent passable) to fish passage.

Resident salmonids are also present in the system, including reaches that are within or upstream of the study area. Cutthroat trout have been observed as far upstream as the Jackson Park Golf Course, and rainbow trout have been observed another mile upstream, near Twin Ponds (City of Seattle 2007). According to WDFW (2012b), resident cutthroat trout are expected to be present in Thornton Creek all the way up to Ronald Bog. Native non-salmonid species that use Thornton Creek include threespine stickleback (*Gasterosteus aculeatus*), prickly sculpin (*Cottus asper*), coast-range sculpin (*Cottus aleuticus*), and lamprey (*Lampetra* sp.) (Tabor et al. 2010). Non-native fish species that have been introduced to Thornton Creek, either intentionally or unintentionally, include rock bass (*Ambloplites rupestris*), pumpkinseed (*Lepomis gibbosus*), largemouth bass (*Micropterus salmoides*), and oriental weatherfish (*Misgurnus anguillicaudatus*) (Tabor et al. 2010).

Migratory cutthroat trout are the most abundant salmonid in Thornton Creek, with an average annual adult count of more than 200 live fish on spawning grounds (City of Seattle 2007). Based on carcass counts from 1999 through 2005, the average annual anadromous run size in Thornton Creek is 33 coho, 7 sockeye, and 4 Chinook salmon (City of Seattle 2007). No fish are known or expected to use the tributary (SSH3) near Ridgecrest Park (WDFW 2012a, 2012b).

Water Quality

The main stem and the lower portions of the North and South Branches are listed as impaired water bodies under CWA Section 303(d), based on demonstrated exceedances of state water quality standards for temperature and dissolved oxygen (Ecology 2008). The lowest reaches of the main stem are also listed for fecal coliform bacteria. In addition, Ecology (2008) has identified portions of Thornton Creek as a water of concern for both pH and mercury. All of the listed reaches are downstream of the study area.

Instream Habitat

Instream habitat quality of the North Branch of Thornton Creek within the study area is rated as low, based on channel morphology, sediment regime, and existing physical habitat conditions (City of Seattle 2007). The stream valley in most of this reach has been modified by grading, fill, and excavation, particularly near I-5, where the stream has been straightened and confined. The channel has more sinuosity within the golf course (downstream of the study area), but the banks in many areas are hardened by riprap and the stream cannot migrate. Note that this description is based on surveys that were completed between 1999 and 2004, before stream restoration work was completed within the Jackson Park Golf Course. The habitat benefits of that effort are not reflected in the description (City of Seattle 2007).

Throughout this segment, the channel is mostly eroding and degrading or has been locked into place through bank armoring. Gradients range between 1 and 2 percent. Gravel and sand are the dominant sediment types, and riffles and glides are the dominant habitat types; little instream structure is present to contribute to pool formation. This dearth of instream structure also reduces the channel's capacity to trap and store sediment (City of Seattle 2007). Based on the predominance of fine sediments, spawning habitat quality is considered poor. Because of the presence of overhanging vegetation and relatively deep water, portions of the stream within the study area likely provide suitable rearing habitat for juvenile fish (Tetra Tech/KCM 2004a).

Upstream of the I-5 culvert, Thornton Creek lies outside of the study area and on the opposite side of I-5 from the proposed alignments. The stream course runs alongside the western boundary of the study area, however.

The tributary (Stream SSH3) that originates near Ridgecrest Park east of I-5 is entirely within culverts in the study area and at its confluence with Thornton Creek immediately west of I-5. Upslope (east) of the study area, the drainage basin for Stream SSH3 is approximately 26 acres, well below the 50-acre minimum size for a basin to be considered potential fish habitat in western Washington, per WAC 222-16-031. As noted by Trotter (2000), fish-bearing streams in the western Cascade Mountains of Washington State are generally present in watersheds that are at least 54 acres.

Riparian Habitat

Riparian habitat quality of Thornton Creek within the study area is rated low, based on riparian area width, connectivity, understory and canopy composition, canopy density, and the percentage of the stream shaded by vegetation (City of Seattle 2007). Stream banks in most portions of the study area are dominated by Himalayan blackberry (*Rubus armeniacus*), particularly along the segment that parallels 5th Avenue NE. A 50- to 70-foot-wide strip of vegetation beside the stream along 5th Avenue NE includes red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), and scattered patches of immature western redcedar (*Thuja plicata*). This overstory canopy provides shade for the stream during spring and summer (when the trees have leaves), as well as the potential for contributing some woody debris. Within the golf course, the dominant riparian vegetation in the study area consists of non-native plants, turf, and landscaping.

McAleer Creek

McAleer Creek (WRIA No. 08.0049) originates at Lake Ballinger and flows roughly 6 miles to the northeast corner of Lake Washington. The 5,300-acre drainage basin includes portions of Lynnwood, Edmonds, Mountlake Terrace, Shoreline, and Lake Forest Park. Most of the northern portion of the study area (from NE 185th Street in Shoreline, north to about 208th Street SW in Lynnwood) drains to the McAleer Creek system. Areas north of 224th Street SW drain to Lake Ballinger, which empties to McAleer Creek.

Much of McAleer Creek and its tributaries within the study area are contained within culverts. The main stem enters the study area from an open channel through the Nile Temple Golf Course west

of I-5. The stream segments in the study area are as follows, progressing from upstream to downstream:

- Culvert under I-5 (440 feet)
- Open channel adjacent to the on-ramp from State Route (SR) 104 westbound to I-5 northbound (350 feet)
- Culvert under the on-ramp (150 feet)
- Open channel in the area enclosed by the cloverleaf off-ramp from I-5 northbound to SR 104 westbound (330 feet)
- 4-foot by 6-foot box culvert under SR 104 (150 feet)
- Channelized open water course in the area enclosed by the cloverleaf on-ramp from SR 104 eastbound to I-5 northbound (400 feet)
- 66-inch-diameter culvert beneath the off-ramp from I-5 northbound to SR 104 (80 feet)

The stream is within the culvert as it exits the study area, briefly resurfacing before entering a 72-inch culvert under Forest Park Drive NE shortly thereafter.

Approximately 1,800 feet south of the I-5/SR 104 interchange, a tributary to McAleer Creek (Stream SSH2) has been identified as passing under I-5 (Tetra Tech/KCM 2004b). This tributary was not catalogued by Williams et al. (1975). After entering a culvert just west of I-5, the stream remains piped for approximately 1,500 feet, resurfacing shortly before its confluence with the main stem near a wastewater pumping station upstream of 15th Avenue NE (Tetra Tech/KCM 2004b). The openwater portions of the stream within the study area, west of I-5, are within concrete-lined ditches along NE 200th Street. During site visits conducted for this analysis, flowing water was observed in this watercourse only during and immediately after rainfall.

North of the I-5/SR 104 interchange, a tributary (WRIA No. 08.0050; Stream SMT1) joins McAleer Creek in the wooded area adjacent to the on-ramp from SR 104 westbound to I-5 northbound. The tributary originates in Veterans Memorial Park northeast of the Mountlake Terrace Transit Center, then flows south through a series of open watercourses and culverts east of I-5. During site visits conducted for this analysis, flowing water was observed in this watercourse only during and immediately after rainfall.

Anthropogenic Factors

In addition to the extensive portions of the stream that are contained within culverts, McAleer Creek has been affected by urban development throughout its basin. Kerwin (2001) estimated the effective impervious area in the basin at 30.5 percent. Tetra Tech/KCM (2004b) calculated the total impervious area for portions of the McAleer Creek basin within the city of Shoreline to be 46 percent. Forested areas provide shade and other vital functions in some areas; in most of the basin, however, riparian habitat includes single-family homes, apartments, and lawns.

Fish Use

McAleer Creek supports anadromous fish as far upstream as Lake Ballinger. Within the study area, portions of McAleer Creek downstream of the confluence with the tributary near the on-ramp from SR 104 westbound to I-5 northbound provide spawning habitat for coho salmon, while those upstream of that point provide rearing habitat (WDFW 2012a). Steelhead and cutthroat trout have been observed spawning in McAleer Creek immediately outside of the study area (Tetra Tech/KCM 2004b). Resident cutthroat trout are present throughout the stream, even upstream of Lake Ballinger (WDFW 2012b).

Chinook salmon have been reported at the flood control system and fish ladder at NE 196th Street between Forest Park Drive NE and 15th Avenue NE, approximately 2,000 feet downstream of the study area (Tetra Tech/KCM 2004b). WDFW (2012b) reported that the species may be present up to 1,000 feet downstream of the study area. Reaches of McAleer Creek approximately 4,900 feet downstream of the study area provide spawning habitat for Chinook salmon and sockeye salmon (WDFW 2012b). King County (2012a) reported that volunteers with the Salmon Watcher Program have consistently seen Chinook, coho, and sockeye salmon in the stream. Kokanee salmon and rainbow trout have also been observed in McAleer Creek, but locations for those observations have not been specified (Kerwin 2001).

The culvert under I-5 may be a migration barrier to juvenile salmonids, preventing the use of Lake Ballinger for rearing (Kerwin 2001). WDFW (2011) characterized the culvert as a partial barrier (67 percent passable). Farther downstream, Tetra Tech/KCM (2004b) identified a 4-foot by 4-foot box culvert under 15th Avenue NE approximately 2,000 feet downstream of the study area as a possible barrier to juvenile fish, due to the velocity of water flowing through the culvert. Based on surveys conducted in 2011, WDFW (2012a) identified the culvert at Forest Park Drive NE as a partial barrier to fish passage. Based on the presence of human-created barriers to fish passage, no fish are known or expected to use either of the McAleer Creek tributaries (Streams SSH2 and SMT1) in the study area (WDFW 2012a, 2012b). However, the basin sizes, channel widths, and stream gradients of both tributaries indicate the potential to support fish in the future.

Water Quality

The lower portions of McAleer Creek are listed as impaired water bodies under CWA Section 303(d), based on demonstrated exceedances of state water quality standards for fecal coliform and dissolved oxygen (Ecology 2008). Lake Ballinger, upstream of the study area, is on the list for contaminants, including polychlorinated biphenyls (PCBs), dieldrin, and 2,3,7,8-TCDD in tissue samples. No portions of McAleer Creek within the study area are listed as impaired or waters of concern.

Sediment samples collected at a site approximately 1 mile upstream of the study area had chemical compounds at concentrations likely to cause adverse effects in aquatic animals living in the sediments (King County 2012a). Sediment samples from a site approximately 0.25 mile downstream of the study area contained pyrene and nickel, but the potential for chemical effects is uncertain due to the contaminant levels (King County 2012a).

Instream Habitat

Immediately downstream of the study area, the instream habitat of McAleer Creek has been rated as poor, based on the preponderance of fine sediments, as well as scouring and incision resulting from bank hardening (Tetra Tech/KCM 2004b). The channel provides poorly defined pool-riffle complexes; the only pool habitat consists of step-pools formed by weirs. The gravel/cobble stream substrate is heavily cemented with sediment, reducing its spawning suitability (Tetra Tech/KCM 2004b). Based on benthic invertebrate samples collected in 2002 and 2003, King County (2012a) rated conditions in McAleer Creek as poor for benthic invertebrates.

The tributary (Stream SSH2) that passes under I-5 south of SR 104 is entirely within culverts in the study area. In addition, the tributary originating in Veterans Memorial Park (Stream SMT1) is partially piped in the study area. The quality of habitat in portions of the stream that are not contained in culverts is generally low. As noted above, however, the basin sizes, channel widths, and stream gradients of both tributaries indicate the potential to support fish in the future.

Riparian Habitat

Riparian habitat quality along the open-channel segments of McAleer Creek and Stream SMT1 in the study area is generally good, dominated by forest canopy that provides shade and the potential for recruitment of woody debris that contributes to channel complexity. The value of the riparian habitat is limited, however, by a lack of connectivity. The open-channel habitat and associated riparian areas of McAleer Creek occur in four discrete segments in the study area, separated by segments that are contained within culverts.

Scriber Creek

Scriber Creek (WRIA No. 08.0061) drains an area of approximately 4,250 acres, including the extreme northern portion of the study area. The stream flows southeast, joining Swamp Creek approximately 2.5 miles downstream of the study area. Swamp Creek flows into the Sammamish River, which empties into the northern end of Lake Washington.

The study area includes approximately 2,000 feet of the main stem of Scriber Creek. For much of its length in the study area, the stream channel is braided and indistinct as it flows through the large wetland complex (Wetland WLY4) south and west of the Lynnwood Transit Center. The stream forms a defined channel as it exits the study area, flowing southeast and under I-5. Also present in the study area is an unnamed, intermittent tributary (WRIA No. 08.0064; Stream SLY1) that flows southward along the eastern edge of the Lynnwood Transit Center. The channel flows through a small patch of forest vegetation (the upper part has been recently planted) before it enters a culvert under the I-5 on-ramp and joins Scriber Creek southeast of I-5.

Anthropogenic Factors

Scriber Creek subbasin is the most highly developed of the Swamp Creek subbasins. Commercial development and transportation corridors account for approximately 40 percent of the subbasin, and medium-density single-family development covers another approximately 30 percent

(Snohomish County 2002). The effective impervious area in the subbasin is approximately 40 percent (Snohomish County 2002). Jones and Stokes (2000) identified untreated runoff from roads and new construction as a likely source of excessive fine sediment in the portion of Scriber Creek that falls within the study area. Street runoff from roads upstream of the study area also conveys oil and other pollutants to the stream system.

Fish Use

Anadromous salmonids have been observed in Scriber Creek, but sources differ about their habitat use as far upstream as the study area. WDFW (2012a) reported that coho salmon occur in Scriber Creek approximately 500 feet downstream of the study area, below the culvert under I-5. WDFW (2011) characterized the culvert as a partial barrier (67 percent passable) to fish passage. The City of Lynnwood (2004), however, reported sightings of adult coho salmon in Scriber Creek as far upstream as Highway 99, approximately 1 mile above the study area. Stream reaches approximately 1,500 feet downstream of the study area provide spawning habitat for coho salmon (WDFW 2012a). Chinook salmon have been observed approximately 3,000 feet downstream of the study area; the nearest stream reaches that provide spawning habitat for Chinook salmon are in Swamp Creek, approximately 2.5 miles downstream. Winter-run steelhead have been observed in Swamp Creek but not in Scriber Creek (Snohomish County 2002; WDFW 2012a). There are no reports of kokanee above the mouth of Swamp Creek and no recent validated reports of bull trout in the Swamp Creek subbasins (Snohomish County 2002). WDFW (2012a) identified a total barrier to anadromous fish passage in a wooded area near 209th Place SW, approximately 2,000 feet downstream of the study area. As noted above, however, the identification of this site as a total barrier is not supported by reported sightings of adult coho salmon as far as 1 mile upstream of the study area.

Resident fish species in Scriber Creek include cutthroat trout, which have been documented throughout the study area, as far upstream as Scriber Lake Park (WDFW 2012b). Largemouth bass and yellow perch have been observed in Scriber Lake upstream of the study area (Jones and Stokes 2000).

The tributary east of the Lynnwood Transit Center (Stream SLY1) is non-fish-bearing (Snohomish County 2002; WDFW 2012a).

Water Quality

Scriber Creek is not on the 303(d) list of impaired waters in the State of Washington. Possible water quality problems may be indicated, however, by evidence of hydrocarbon pollution (oily sheen and odor) and the abundance of pollutant-tolerant stream invertebrates (Jones and Stokes 2000). Stream temperatures measured in the study area fall within the acceptable range for salmonid fish use, but the lack of shade-producing vegetation increases the risk of elevated temperatures (Jones and Stokes 2000).

Instream Habitat

The main stem reach in the study area is dominated by the large scrub/shrub wetland adjacent to the park-and-ride lot. Salmon spawning habitat conditions within this reach are poor due to limited

canopy and vegetative cover, the presence of bank armoring, and the abundance of silt and other fine substrates (Jones and Stokes 2000). Side channels and other low-velocity areas may provide good rearing habitat, however (City of Lynnwood 2004). The tributary east of the Lynnwood Transit Center (Stream SLY1) is highly channelized and does not flow at the surface for most of its length. The primary source of flow in the tributary is urban runoff, and habitat quality is generally poor. Based on the presence of human-created barriers to fish passage, Stream SLY1 is not currently known or expected to support fish. Based on its basin size, channel width, and stream gradient, however, Stream SLY1 may have the potential to support fish in the future.

Riparian Habitat

Riparian vegetation in the study area consists of a dense growth of salmonberry (*Rubus spectabilis*) and Himalayan blackberry, with a few red alder, western redcedar, bigleaf maple (*Acer macrophyllum*), and Pacific flowering dogwood (*Cornus nuttallii*). Jones and Stokes (2000) found little to no large woody debris in the stream and determined that the potential for large woody debris recruitment is low.

3.1.3 Threatened, Endangered, and Candidate Species

Four aquatic species that have federal or state listing status, or that are candidates for listing, may use habitats in the study area. These species are described below.

Puget Sound Chinook Salmon

The Puget Sound evolutionarily significant unit of Chinook salmon is listed as threatened under the ESA and is a State Candidate species. Chinook salmon are present in the lower reaches of Thornton, McAleer, and Scriber creeks. In all three streams, the reaches where Chinook salmon have been observed are separated from the study area by total or partial fish passage barriers. The known distribution of Puget Sound Chinook salmon in the project vicinity is as follows:

- Thornton Creek: Observed spawning approximately 2.5 miles downstream of the study area (City of Seattle 2007; WDFW 2012a); at least 4 total barriers and 10 partial barriers to fish passage between the study area and the downstream reaches that support anadromous spawning
- McAleer Creek: Present up to 1,000 feet downstream of the study area, spawning habitat approximately 4,900 feet downstream (WDFW 2012b); partial fish passage barriers at I-5 (within the study area) and Forest Park Drive NE (immediately downstream of the study area)
- Scriber Creek: Present up to 3,000 feet downstream of the study area, spawning habitat in Swamp Creek, approximately 2.5 miles downstream (WDFW 2012a); total barrier to anadromous fish passage approximately 2,000 feet downstream of the study area

Based on the lack of suitable habitat and the presence of fish passage barriers downstream of the study area, Chinook salmon are not expected to use habitat in any streams in the study area.

Puget Sound Steelhead

The Puget Sound evolutionarily significant unit of steelhead trout is listed as threatened under the ESA, but has no listing status at the state level. Winter-run steelhead trout are present in Thornton and McAleer creeks, but they have not been observed in Scriber Creek. Compared to other salmonids, steelhead appear to have a greater ability to pass features and structures that are partial fish passage barriers. Therefore, steelhead have a greater likelihood than Chinook salmon of using stream habitat in the study area. The known distribution of Puget Sound steelhead in the project vicinity is as follows:

- Thornton Creek: Documented in the lower portions of the stream, below fish passage barriers (McMillan 2007 *in* City of Seattle 2007); the observation of an adult upstream of the culvert under I-5 indicates the potential for occurrence in the study area (Tetra Tech/KCM 2004a)
- McAleer Creek: Observed spawning immediately downstream of the study area, below a partial barrier to fish passage (Tetra Tech/KCM 2004b)
- Scriber Creek: Present in Swamp Creek (approximately 2.5 miles downstream of the study area) but not in Scriber Creek (Snohomish County 2002; WDFW 2012a); total barrier to anadromous fish passage approximately 2,000 feet downstream of the study area

Coastal-Puget Sound Bull Trout

The Coastal-Puget Sound distinct population segment of bull trout is listed as threatened under the ESA and is a State Candidate species. Bull trout have been observed entering Lake Washington in small numbers. None of the streams in the study area has been documented as supporting spawning or early rearing. Water temperatures in the study area streams are likely too high to support bull trout spawning or rearing. WDFW (1999) determined that successful spawning by bull trout occurs only upstream of the winter snow line (i.e., the elevation at which snow is present on the ground for much of the winter). Such areas are not found in the Thornton Creek, McAleer Creek, and Scriber Creek basins but may be present in other tributaries to Lake Washington.

River Lamprey

The river lamprey (Lampetra ayresii) has no listing status at the federal level but is a State Candidate species. Although there are no direct observations of river lamprey in the study area, their presence is likely. They are known to exist in tributaries to Lake Washington and Lake Sammamish, such as the Cedar River and Issaquah Creek.

3.1.4 Tribal Fishing

Judicial decisions have affirmed that federally recognized tribes have treaty rights which include, but are not limited to, the rights to harvest fish free of state interference (subject to conservation principles) and to co-manage the fishery resource. Lake Washington is among the usual and accustomed fishing areas of the federally recognized Muckleshoot Indian Tribe. Project impacts to Lake Washington's tributaries could affect the productivity of tribal fisheries, and thereby harm the

fishing interests of the Muckleshoot and other tribes. Sound Transit is therefore addressing potential effects on fish and fish habitat in this report and coordinating with the Muckleshoot Indian Tribe Fisheries Division regarding these potential effects.

3.2 Vegetation, Terrestrial Wildlife, and Wildlife Habitat

The Lynnwood Link Extension would be constructed in an urban area where terrestrial habitats have already been subjected to a moderate to high degree of alteration. The degree of alteration varies from site to site, with the greatest alteration occurring where urban development is the greatest. Most of the study area is within or immediately adjacent to the I-5 corridor and, as such, has been substantially modified from pre-settlement conditions. Some areas of less-developed habitat remain, however, most notably near the Mountlake Terrace Transit Center and in the Scriber Creek wetland complex near the northern extreme of the study area.

3.2.1 Land Cover Types

Based on the structural categories defined by Johnson and O'Neil (2001) and on observations during field reconnaissance, six land cover types have been identified in the study area: Forest, Shrub, Maintained Vegetation, Residential Areas, Urban Areas, and Open Water. Table 3-2 provides brief descriptions of these cover types, with examples of where they occur in the study area. Figure 3-2a through Figure 3-2c show the mapped locations of the cover types within the study area.

More than 70 percent of the study area consists of the Urban and Residential Areas cover types, which cover approximately 476 acres combined (Table 3-2). Forest is the next most common cover type (13 percent of the study area), with 88 acres. Shrub and Maintained Vegetation cover roughly equivalent amounts of area, with 58 and 61 acres, respectively. Less than 0.5 acre of the study area consists of the Open Water cover type.

The area of Forest habitat east of I-5 near the Mountlake Terrace Transit Center has been identified by WDFW (2012b) as a priority habitat area based on the presence of high-quality habitat features. In addition, the study area includes a portion of Northacres Park in Seattle. Stands of coniferous and deciduous trees in that park have been identified as priority habitats, as have snags and downed logs (WDFW 2012b).

3.2.2 Terrestrial Wildlife Species

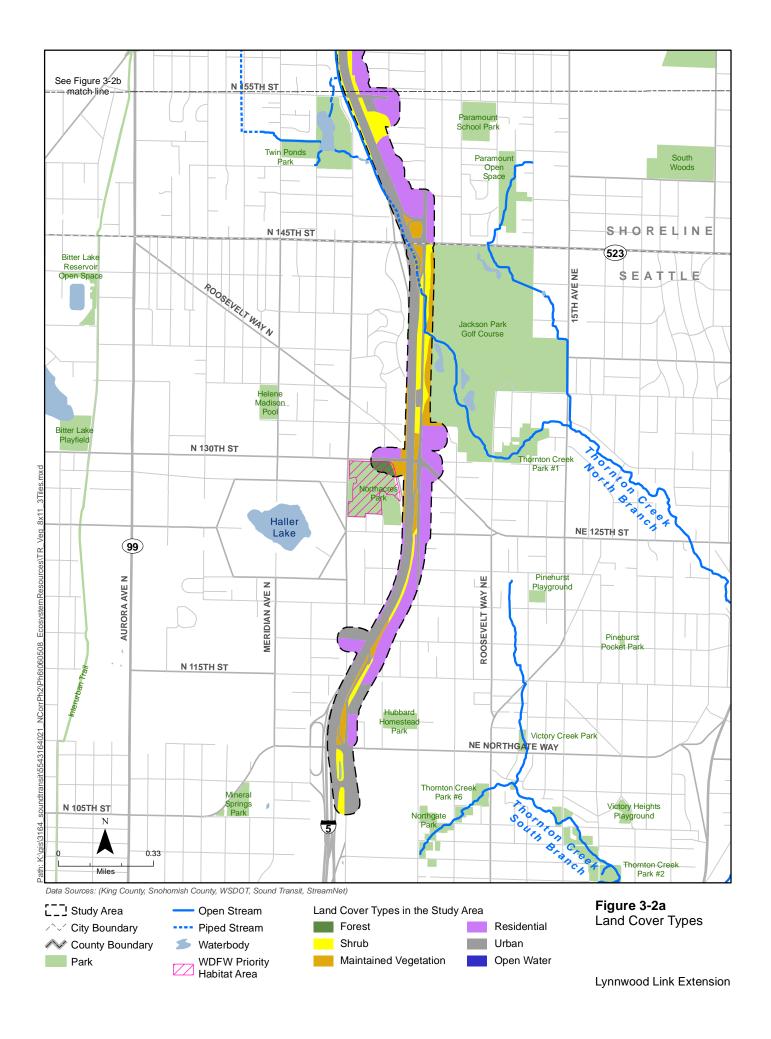
Wildlife use of habitats in urban landscapes depends on the general location of the habitat, the size and type of undisturbed habitats, the degree of connectivity and extent of travel corridors between and among these habitats, and the types and levels of human activity. Much of the Lynnwood Link Extension study area falls within commercial, industrial, and residential areas that provide habitat only for adaptable species such as sparrows, starlings, doves, rats, mice, raccoons, opossums, and squirrels. Birds such as common pigeons (*Columba livia*) and cliff swallows (*Petrochelidon pyrrhonota*) commonly build nests on bridges and road overpasses, and many bat species use such structures as temporary roosting sites.

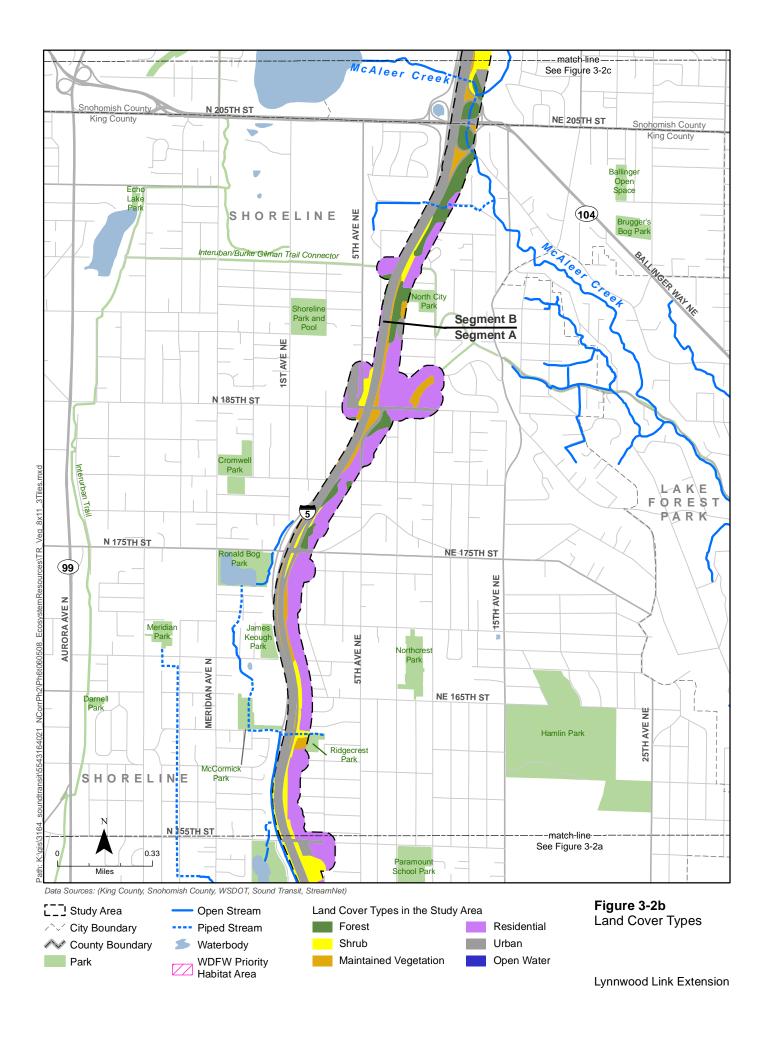
Table 3-2. Land Cover Types in the Lynnwood Link Extension Study Area

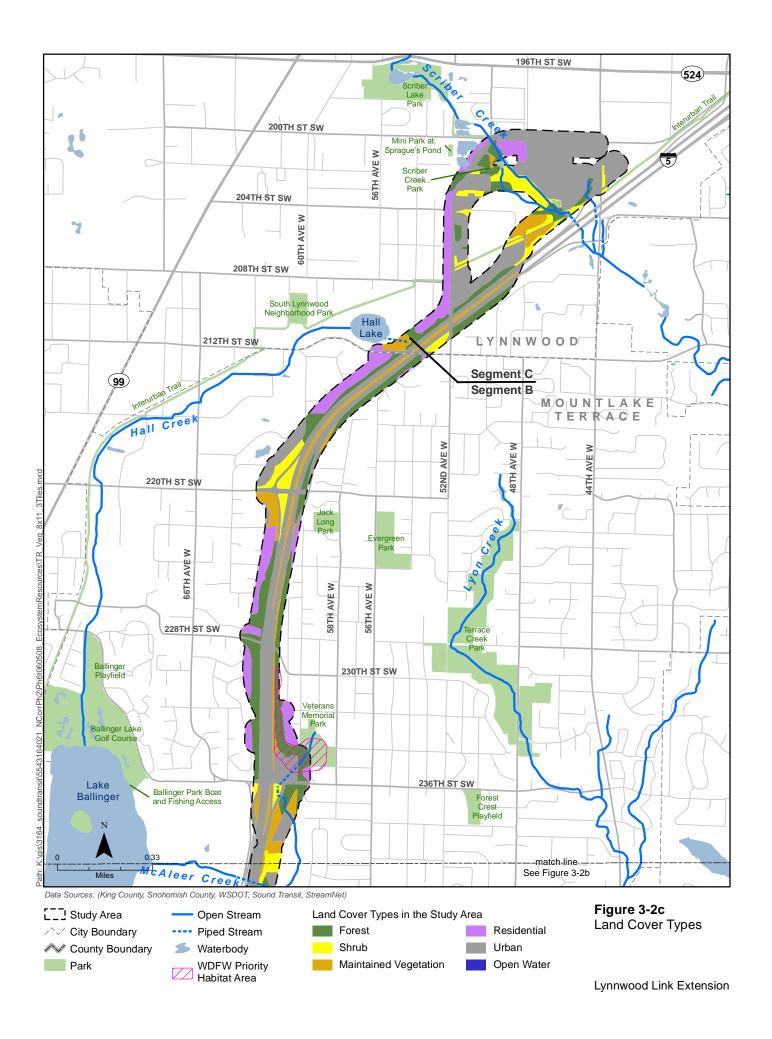
Land Cover Type	Description	Examples of Occurrence	Acres in Study Area
Forest	Areas dominated by evergreen conifers, deciduous broadleaf	Northacres Park	88
	trees, or a mixture of both, generally greater than 20 feet tall. Canopy cover variable but typically greater than 40 percent. Typical tree species include Douglas fir (<i>Pseudotsuga menziesii</i>),	Veterans Memorial Park	
	western hemlock (<i>Tsuga heterophylla</i>), madrone (<i>Arbutus menziesii</i>), red alder, black cottonwood, and bigleaf maple. Understories include shrubs, forbs, and/or grasses.	Scriber Creek wetland complex	
Shrub	Areas dominated by native or non-native shrubs. May include trees (particularly red alder) singly or in patches. Common shrub	Slopes adjacent to I-5	58
	species within the study area include salmonberry, salal (Gaultheria shallon), Himalayan blackberry, and snowberry (Symphoricarpos albus).	Scriber Creek wetland complex	
Maintained Vegetation	Typically, exotic grasses or annuals, such as mown grasses and other low vegetation, most of which are rarely allowed to go to seed. Includes stormwater detention areas.	I-5 median	61
Residential	Houses and yards, including lawns, ornamental plantings, and	South Lynnwood	170
Areas	pruned trees. Tree and shrub canopy cover generally less than 30 percent. Moderate to high levels of human disturbance. Snags, woody debris, and other natural structures are essentially non-existent.	Pinehurst	
Urban Areas	Roadways, parking lots, and other areas dominated by impervious surfaces. Little or no vegetation present.	I-5, parking lots, commercial developments	306
Open Water	Areas of ponding, including natural lakes, streams, and stormwater ponds. All open water in the study area is fresh water.	Ponds near Scriber Creek	<1

Larger habitat patches and those connected to other natural areas or heavily vegetated residential neighborhoods support a larger variety of species, such as songbirds, raptors, small mammals, coyotes, and black-tailed deer (*Odocoileus hemionus columbianus*). Songbird species commonly found in such areas include American robin (*Turdus migratorius*), song sparrow (*Melospiza melodia*), Steller's jay (*Cyanocitta stelleri*), American crow (*Corvus brachyrhynchos*), spotted towhee (*Pipilo maculates*), black-capped chickadee (*Poecile atricapillus*), white-crowned sparrow (*Zonotrichia leucophrys*), northern flicker (*Colaptes auratus*), Bewick's wren (*Thryomanes bewickii*), and red-breasted nuthatches (*Sitta canadensis*). Raptors include American kestrel (*Falco sparverius*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*A. cooperii*), red-tailed hawk (*Buteo jamaicensis*), and great horned owl (*Bubo virginianus*).

The largest area of native habitat in the study area is the Scriber Creek wetland complex. Waterfowl use areas of slow-moving water, and snags throughout the complex show evidence of recent excavation by woodpeckers. Vegetation and other features in the complex provide habitat for songbirds, small mammals, and amphibians. Mammals identified within the park included black-tailed deer, Eastern gray squirrel (*Scirurus carolinensis*), and river otter (*Lontra canadensis*). Evidence of beavers (*Castor canadensis*), including dams and lodges, has been observed nearby. The complex is surrounded on all sides, however, by residential and commercial developments, roads, and highways, limiting its value for wildlife species that require large, undisturbed areas and undeveloped travel corridors. The presence of invasive plant species, including Himalayan blackberry and reed canarygrass (*Phalaris arundinacea*), diminishes the value of habitats in the wetland complex.







Most patches of forest cover in the study area are fragmented and separated from surrounding habitat areas by commercial, urban, and residential developments and roads. Despite their isolation, these areas still provide habitat for forest-associated resident and migratory songbirds, as well as for hawks, owls, woodpeckers, and small mammals.

Based on breeding bird survey reports (Opperman et al. 2006), 26 bird species are known or expected to nest in the 9-square-mile survey block located near the southern terminus of the project (Northgate). Based on data from the Audubon Society (2011), additional species commonly seen in the area outside of the breeding season include American wigeon (*Anas americana*), northern pintail (*Anas acuta*), bufflehead (*Bucephala albeola*), western grebe (*Aechmophorus occidentalis*), and glaucous-winged gull (*Larus glaucescens*).

Rivers and streams are used as travel corridors by many wildlife species, including semi-aquatic species such as muskrat, mink, otter, frogs, stream salamanders, turtles, and snakes (Jackson 2003). Despite the widespread urbanization of the I-5 corridor, riparian areas along the streams may serve as a connective corridor between pockets of wildlife habitat.

3.2.3 Threatened, Endangered, and Candidate Species

Based on reviews of Natural Heritage Program data from DNR and PHS data from WDFW, no ESA-listed or state-listed threatened or endangered plant or wildlife species are known or expected to occur in the study area. The USFWS (2012) identified several ESA-listed wildlife species that may occur in King County or Snohomish County, and four candidates for listing. Based on their habitat requirements and known distribution, none of these species (Canada lynx [Lynx canadensis], gray wolf [Canis lupus], grizzly bear [Ursus arctos horribilis], Pacific fisher [Martes pennanti pacifica], North American wolverine [Gulo gulo carcajon], marbled murrelet [Brachyramphus marmoratus], northern spotted owl [Strix occidentalis caurina], yellow-billed cuckoo [Coccycus americanus], and Oregon spotted frog [Rana pretiosa]) is expected to use habitats in the study area. These species will not be addressed further in this document.

Several species that are state-listed as sensitive species, or that are candidates for state listing, are known or likely to be present in the study (Table 3-3). For this analysis, these species are referred to as species of concern. Site-specific distribution data are available for only a few of these species, and no species-specific surveys or habitat assessments were conducted for this project. The known or expected occurrence of these species in the study area is based on observations and the presence of potentially suitable habitat (Table 3-3).

The Migratory Bird Treaty Act, administered by USFWS, makes it unlawful to take, import, export, possess, sell, purchase, or barter any migratory bird, with the exception of the taking of game birds during established hunting seasons. The law also applies to feathers, eggs, nests, and products made from migratory birds. Nearly all bird species that may occur in the study area are protected under the Migratory Bird Treaty Act. All habitats in the study area support migratory birds of some type at some time in their life cycle; therefore, all habitats identified above would be considered habitat for migratory birds.

Table 3-3. Species of Concern That May Occur in the Lynnwood Link Extension Study Area

				Expected Occurrence in Study Area		
Common Name	Scientific Name	Federal Status ^a	State Status ^b	Likely Present	Possibly Present	Preferred Habitat
Townsend's Big-eared Bat	Corynorhinus townsendii	FCo	SC		X	Forages over and near forested habitat; bridge abutments occasionally used by individual male bats as day roosts.
Western Toad	Anaxyrus boreas	FCo	SC	Х		Breeds and develops in wetland habitats. Adult toads regularly use forested upland habitat.
Bald Eagle	Haliaeetus leucocephalus	FCo	SS		Х	Nests in wooded areas with larger trees within 0.5 mile of large bodies of water. May forage near the study area.
Peregrine Falcon	Falco peregrinus	FCo	SS		Х	Typically nests in cliffs that are at least 150 feet high; may also use buildings and bridges. Open habitats, including wetland areas, provide foraging habitat.
Pileated Woodpecker	Dryocopus pileatus	None	SC	Х		Mature and old-growth forests, second- growth forests with large snags and fallen trees. Evidence of recent excavations observed in Nile Temple Golf Course, near study area.
Vaux's Swift	Chaetura vauxi	None	SC		Х	Breeds in mountains and foothills. Forages over wooded areas and open habitats, including towns.

^a FCo = Federal species of concern

3.3 Wetlands

Sound Transit identified 35 wetlands in the study area. No formal wetland delineations occurred during the field reconnaissance for this analysis. Such delineations would occur during the Final EIS and/or the permitting phase of this project. Of these, 24 were identified during field surveys within the field reconnaissance survey area (Table 3-4) and 11 were identified outside of the field reconnaissance survey area via existing documentation and public vantage points (Table 3-5). Detailed wetland descriptions, wetland determination data forms, wetland rating forms, and photographs are provided in the Wetland Identification and Survey Report (Appendix B). Figure 3-1 in Appendix B presents an overview of mapped locations of field-identified and potential wetlands within the study area. Potential wetlands include portions of field-identified wetlands that extend beyond the field reconnaissance survey area, as well as areas that appear to meet the wetland criteria that fall entirely outside of this survey area, but could not be ground-truthed. Appendix D presents detailed locations of individual wetlands and buffers. One of the field-identified wetlands is a constructed stormwater feature that was historically a wetland (Wetland WSE2), and one wetland (Wetland WSH1) contains a ditched swale. Of the field-identified wetlands, one is rated as Category II according to the Ecology rating system, 18 are rated as Category III, and 5 are rated as Category IV. The majority of wetlands are smaller than 0.5 acre, except Wetlands WSE8 (approximately 0.63 acre), WMT6 (1.24 acres), and WLY4 (approximately 17.00 acres). All wetlands in the study area are in areas characterized by urban and residential land use where the natural environment has been altered.

^b SC = State Candidate; SS = State Sensitive species

Table 3-4. Summary of Field-Identified Wetlands within the Lynnwood Link Extension Study Area

Wetland ^a	Size (acres)	USFWS Class ^b	HGM Class ^c	Ecology Rating ^d	Local Rating ^e	Buffer Width ^f (feet)
WSE1	0.44	PFO	Riv	III	III	60
WSE2	0.42	PSS,PAB	Dep	IV	IV	50
WSE3	0.21	PFO,PEM	Dep,Slope	III	III	60
WSE4	0.09	PFO	Dep	III	III	60
WSE5	0.16	PFO	Dep	III	III	60
WSE6	0.06	PSS	Dep	III	III	60
WSE7	0.14	PSS,PEM	Dep	III	III	60
WSE8	0.63	PFO,PSS	Dep	III	III	60
WSH1	0.06	PFO,PSS,PEM	Dep,Slope	III	III	65
WSH2	0.09	PEM	Dep,Slope	IV	IV	35
WSH3	0.03	PEM	Slope	IV	IV	35
WSH4	0.11	PFO,PEM	Dep,Slope	III	III	65
WSH5	0.37	PFO	Dep	III	III	65
WMT1	0.29	PFO	Dep	III	III	65
WMT2	0.17	PFO	Riv,Slope	III	III	65
WMT3	0.01	PFO	Dep	III	III	65
WMT4	0.43	PFO,PSS	Dep,Slope	III	III	65
WMT5	0.36	PFO,PEM	Dep	III	III	65
WMT6	1.24	PFO	Dep	III	III	65
WMT7	0.41	PFO	Dep	IV	IV	50
WMT8	0.01	PFO	Slope	IV	IV	50
WLY3	0.08	PSS	Dep	III	III	75
WLY4	17.00	PFO,PSS,PEM	Riv,Dep	II	II	110
WLY6	0.05	PFO	Dep	III	III	75

^a Wetlands are identified with alphanumeric codes: WYYn. W stands for wetland; YY = two-letter code for local jurisdiction (SE = Seattle, SH = Shoreline, MT = Mountlake Terrace, LY = Lynnwood); n = sequential identification number.

b Cowardin et al. (1979). USFWS = U.S. Fish and Wildlife Service. PAB = palustrine aquatic bed; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub

 $^{^{\}circ}$ Brinson (1993). HGM = Hydrogeomorphic; Dep = Depressional; Riv = Riverine; Slope = Slope

^d Hruby (2004)

^e Seattle Municipal Code 25.09.160.A, only applicable to development on publicly or privately owned parcels (Wetlands WSE1-WSE8), Shoreline Municipal Code 20.80.320 (Wetlands WSH1-WSH5), Mountlake Terrace Municipal Code 16.15.080 (Wetlands WMT1-WMT8), Lynnwood Municipal Code 17.10.050 (WLY3, WLY4, and WLY6)

f Seattle Municipal Code 25.09.160.C, only applicable to development on publicly or privately owned parcels (Wetlands WSE1-WSE8), Shoreline Municipal Code 20.80.330 (Wetlands WSH1-WSH5), Mountlake Terrace Municipal Code 16.15.090 (Wetlands WMT1-WMT8), Lynnwood Municipal Code 17.10.051 (WLY3, WLY4, and WLY6)

Table 3-5. Summary of Potential Wetlands within the Lynnwood Link Extension Study Area

Wetland ^a	Size (acres)	USFWS Class ^b	HGM Class ^c	Ecology Rating ^d	Local Rating ^e	Buffer Width ^f (feet)
PWSH1	0.05	PEM	Slope	unknown	III	65
PWSH3	0.10	PFO,PEM	unknown	unknown	III	65
PWSH4	0.19	PFO	Slope	unknown	III	65
PWSH5	0.07	PEM	Slope	unknown	III	65
PWMT1	0.02	PEM	Slope	III	III	65
PWMT2	0.02	PFO	Dep	III	III	65
PWLY1	0.07	PSS	Dep	III	III	75
PWLY2	0.26	PFO	Dep	III	III	75
PWLY3	0.07	PEM	Dep	III	III	75
PWLY4	0.03	PFO	Dep	III	III	75
PWLY5	0.03	PUB	Dep	III	III	75

a Potential wetlands are identified with alphanumeric codes: PWYYn. PW stands for potential wetland; YY = two-letter code for local jurisdiction (SE = Seattle, SH = Shoreline, MT = Mountlake Terrace, LY = Lynnwood); n = sequential identification number.

3.3.1 Hydrology

Signs of altered hydrology were evident in most wetlands, due to the urbanization and development throughout the study area. Historically, wetlands have been altered in several ways, such as filling, ditching, bisecting, and clearing. Human alterations, such as excavation and stormwater runoff, have also created or enlarged wetlands. Many study area wetlands are within maintained rights-of-way where they receive stormwater runoff from pipes, ditches, or overland flow. Other sources of hydrology include a shallow groundwater table, precipitation, and overbank flow from adjacent streams.

3.3.2 Soils

Soil survey data from the NRCS Web site are not available for the portions of the study area within King County (cities of Seattle and Shoreline). Because of urbanization and development, most of the study area in Snohomish County (cities of Mountlake Terrace and Lynnwood) is mapped as Urban land.

b Cowardin et al. (1979). USFWS = U.S. Fish and Wildlife Service. PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrubshrub; PUB = palustrine unconsolidated bottom

^c Brinson (1993). HGM = Hydrogeomorphic; Dep = Depressional; Riv = Riverine; Slope = Slope

^d Hruby (2004)

^e Shoreline Municipal Code 20.80.320 (Wetlands PWSH1-PWSH5), Mountlake Terrace Municipal Code 16.15.080 (Wetlands PWMT1-PWMT2), Lynnwood Municipal Code 17.10.050 (PWLY1-PWLY5)

Shoreline Municipal Code 20.80.330 (Wetlands PWSH1-PWSH5), Mountlake Terrace Municipal Code 16.15.090 (Wetlands PWMT1-PWMT2), Lynnwood Municipal Code 17.10.051 (PWLY1-PWLY5)

3.3.3 Vegetation

Most wetlands in the study area contain forested, scrub-shrub, or emergent habitat (see USFWS classes for each wetland in Tables 3-5 and 3-6). One wetland (Wetland WSE2) also has aquatic bed habitat and another (Wetland PWLY5) lacks vegetation (i.e., unconsolidated bottom). Vegetation in the study area wetlands is a mix of native and non-native species, many of which are disturbance-tolerant. Surrounding buffers range from forested to herbaceous cover; disturbance-tolerant species are common.

3.3.4 Jurisdictional Determination

Sound Transit will request jurisdictional determinations of those wetlands that are likely to be affected along the preferred alternative during the permitting phase of this project.

4 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential impacts of the Lynnwood Link Extension on aquatic species and habitat; vegetation, terrestrial wildlife, and wildlife habitat; and wetlands. The discussion of project impacts assumes that the BMPs described in Appendix A would be implemented and performed as expected to avoid and minimize certain impacts during construction.

During the Final EIS process, Sound Transit will review the project to ensure ESA compliance³. That assessment will also include a review of potential effects on essential fish habitat, as required by the Magnuson-Stevens Fishery Conservation and Management Act. Sound Transit expects that the Lynnwood Link Extension would result in no adverse effects on essential fish habitat.

4.1 Aquatic Species and Habitat

Construction of the Lynnwood Link Extension could affect aquatic species and habitat in the study area. Analyses in this subsection address the potential long-term, construction-related, and indirect impacts of each alternative. These impacts are defined as follows:

- Long-term impacts include permanent loss or degradation of instream or riparian habitat, altered hydrology, degradation of water quality, or changes in habitat connectivity (e.g., fish passage).
- Construction-related impacts include temporary loss or degradation of instream or riparian habitat (including hydrology or water quality), or disturbance from in-water work.
- Indirect and secondary impacts include those related to residential and commercial development near stations, or impacts on other resources from mitigation measures.

Analyses in this subsection focus on salmonid fish species and their habitat because salmonids include the species of greatest concern in Pacific Northwest freshwater environments. Because the habitat requirements and mode of potential impacts are so similar for the salmonid species present, the analysis is combined for all salmonid species; however, species-specific impacts are identified where appropriate. All federally listed threatened and endangered aquatic species that may occur in the study area are all salmonids and are, therefore, addressed in the combined analysis. The discussion herein is thus limited to the potential for project impacts on all species based on the proximity of their known habitat in the project vicinity. Impacts on essential fish habitat are similarly included in the generic analysis and are not discussed separately.

Discussions of long-term and construction-related impacts include assessing the range of impacts that could occur for each project segment and alternative. Actual impacts would depend on final alternative selection and design, construction footprint and methods, BMPs implemented during

³ Section 7(a)(2) of the ESA stipulates that federal agencies must consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to ensure any action authorized, funded, or carried out by a federal agency (in this case, the Federal Transit Administration, which is providing funding for the Lynnwood Link Extension) is not likely to jeopardize the continued existence of any endangered or threatened species or result in the adverse modification or destruction of designated critical habitat.

construction, and performance of post-construction restoration, including revegetation of disturbed areas and mitigation for impacts on areas protected under local Critical Areas Ordinances.

4.1.1 Long-Term Impacts

Direct long-term impacts could occur where the project limits cross streams or stream buffers. The project limits include the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and other ancillary features. In addition, a 15-foot clear zone would be maintained on either side of the guideway to prevent damage to catenary wires from falling vegetation. Existing trees in this zone would be cleared and no trees would be planted. For the Draft EIS, all impacts within these areas are considered long-term (see explanation in Section 1.4, Assumptions). Sound Transit will re-evaluate this assumption and identify temporary construction limits during the Final EIS and/or the permitting phase.

Under any of the light rail alternatives, construction and operation of guideways, stations, and ancillary features would not be expected to have any direct effects on instream habitat. As explained in Section 1.4, Assumptions, nearly all construction is anticipated to occur outside of the OHWM of all streams and the guideways would be elevated at all open stream crossings. A possible exception to this expectation could occur in the Scriber Creek wetland complex, where the stream lacks a defined channel and it is not possible to determine the exact location of the OHWM. Construction of elevated guideways could entail the installation of support columns within the wetland area, which could include areas below the OHWM for Scriber Creek. The actual location of any such structures would not be known until later in the project design process, and their location relative to the OHWM for Scriber Creek would be determined through the local permitting process. In addition to potential direct impacts on the stream, impacts to the wetland complex could adversely affect juvenile salmonids that rear and overwinter in wetland habitats adjacent to Scriber Creek. None of the other wetlands identified in the study area is accessible to juvenile fish. The potential for such construction to adversely affect aquatic species or habitats would be avoided or minimized through the implementation of conservation measures necessary for permit compliance.

The presence of elevated guideways over stream habitat could have a beneficial effect, creating shade that helps keep water temperatures low. Operation of the light rail system would not be expected to result in any increases in nighttime illumination of fish-bearing waters (which could increase the risk of predation on juvenile salmonids) because the tracks would have no overhead lighting and the train headlights would be directed parallel to the tracks. No impacts on fish passage are anticipated because no new culverts would be added in streams with documented or potential fish habitat and no existing culverts in such streams would be extended. Construction of at-grade or elevated guideways, stations, and ancillary features above streams in culverts (e.g., Stream SSH3, a tributary to Thornton Creek in Shoreline) would not be expected to affect stream habitat. The potential for the construction of guideways, stations, and other facilities to interfere with possible future fish habitat restoration projects is addressed in Section 4.4, Indirect and Secondary Impacts.

No construction of at-grade guideways, stations, or ancillary features would occur within the regulatory buffers of any surface-flowing streams in the study area. This would not necessarily preclude all potential adverse effects on stream habitat, however. The loss of forest habitat at considerable distances from streams—even up to 200 feet—can reduce the amount of wood available for recruitment to those streams (Knutson and Naef 1997). Notably, studies conducted in western Washington, western Oregon, and southeast Alaska indicate that more than 90 percent of large woody debris input to streams from riparian areas is recruited from the areas within one-half of a site potential tree height (Murphy and Koski 1989; McDade et al. 1990; McKinley 1997; Martin et al. 1998). Based on an estimated site potential tree height of 200 feet, most potential recruitment of large woody debris to study area streams would be expected to come from the areas within regulatory buffers, and nearly all recruitment would come from within 100 feet. Construction of atgrade facilities outside of regulatory buffers, therefore, would likely result in minimal reductions in wood recruitment to study area streams.

Permanent impacts on riparian habitat may also occur where elevated guideways span areas of riparian vegetation. Construction of elevated guideways above vegetation would reduce the amount of water the vegetation receives from precipitation. In addition, guideways with low clearance (generally, less than 15 feet) may limit sunlight. In some areas, vegetation cleared from beneath elevated guideways may not grow back. The presence of elevated guideways would preclude the development of mature forest habitat in such areas, reducing the potential for the recruitment of large woody debris to nearby streams. Because the elevated guideway structures would be relatively narrow (31 feet wide) and generally more than 15 feet above the ground surface, shading impacts on riparian vegetation would be limited in most areas, although some impacts would result from shading and water interception. As learned from the Sound Transit Central Link project, herbaceous plants and shrubs are generally able to grow beneath narrow guideways that are at least 15 feet above the ground (Sound Transit 2011). Based on the nature and location of buffer impacts, as well as the current condition of the buffers themselves, no substantial degradation of riparian functions (e.g., fish and wildlife habitat, food chain support, or water temperature maintenance) or processes would likely result from project-related clearing under any of the alternatives. The riparian processes that would likely not be affected include water flow; erosion and accretion; infiltration; groundwater recharge and discharge; sediment delivery, transport, and storage; organic matter input; nutrient and pathogen removal; and stream channel formation and maintenance.

Long-term impacts could be caused by increases in the amount of impervious surface in the study area, which can increase stormwater runoff rates, volumes, and pollutant loads. These, in turn, can lead to higher peak flows and degrade water quality in streams. New impervious areas would include new tracks and guideways, stations, park-and-ride lots, and roads. In general, elevated segments would result in less new impervious area than at-grade segments because the pervious ground would

-

⁴ Site potential tree height is the average maximum height of the tallest dominant trees (200 years or older) at a given location, based on the soil and climatic conditions at that site. Site potential tree heights of 200 feet are not uncommon in the Puget Sound lowlands.

be retained underneath elevated segments in most areas. Project features that do not receive motor vehicle traffic, such as guideways (both elevated and at-grade) and stations, would not be pollution-generating impervious surfaces (PGIS). Project-related parking lots (including new park-and-ride facilities) and road realignments would receive motor vehicle traffic and would, therefore, be PGIS.

To minimize the potential impacts of increased impervious surface, stormwater detention facilities would be constructed as part of the project. The amount of area detained would be sufficient to offset any increase in impervious surface area under any of the alternatives. Based on the implementation of these BMPs, peak flows would not be expected to increase in any of the streams in the study area as a result of the project; moreover, base flows would be expected to remain similar to current conditions. Stormwater from all project-related impervious surface would receive appropriate flow control where required. In addition, PGIS associated with the project would receive water quality treatment where applicable.

In some areas, especially in Segment C, existing pollution-generating segments of I-5 and commercial parking areas would be spanned by elevated portions of light rail. In these areas, precipitation that might otherwise have fallen on pollution-generating surfaces would fall instead on the non-pollution-generating surface of the elevated guideway. The result would, in effect, be a conversion from pollution-generating to non-pollution-generating impervious surface, potentially reducing the overall amount of PGIS in the study area. Based on the water resources impact analysis, none of the alternatives would degrade water quality compared to existing conditions. In addition, the light rail system could reduce future increases in traffic volume in the study area, which would indicate the likelihood of lower levels of pollutant increases associated with motor vehicle traffic.

The light rail alternatives would be designed to comply with guidance equivalent to Ecology's *Stormwater Management Manual for Western Washington* (Ecology 2012). Sound Transit's preliminary engineering for the Lynnwood Link Extension includes development of a conceptual layout for major stormwater facilities that are sized to comply with Sound Transit's *Design Criteria Manual* (Sound Transit 2012), which requires stormwater facilities for its projects to conform to the requirements of local jurisdictions. These facilities include stormwater ponds and underground vaults. Additional measures to reduce stormwater runoff, such as low-impact development or other on-site measures, would be considered at a more advanced phase of project development. Given Sound Transit's commitment to design the project to meet the stormwater management requirements of each jurisdiction, the light rail alternatives are not expected to adversely affect surface waters.

Peak stream flows in the study area would not be expected to increase substantially under any of the alternatives because the stormwater systems built for the project would be designed to simulate predevelopment hydrology. As stated in the *Stormwater Management Manual for Western Washington*, "The Manual is intended to provide project proponents, regulatory agencies and others with technically sound stormwater management practices which are presumed to protect water quality and instream habitat – and meet the stated environmental objectives of the regulations described in this chapter." It is possible, however, that discharges from detention facilities could result in increased water

velocities and durations in receiving waters, potentially reducing the availability of forage displacing juvenile salmonids from cover (Tschaplinski and Hartman 1983).

In addition, impervious surfaces preclude natural infiltration of precipitation into the ground, decreasing groundwater recharge. Less precipitation entering groundwater aquifers might decrease dry-season base flows by decreasing water inputs to streams from groundwater sources such as springs. Dry-season base flows have been identified as one of the most important natural limiting factors controlling salmonid production in lowland Puget Sound streams.

Where low-impact development measures are implemented, some stormwater runoff from project-related impervious surfaces would be collected and infiltrated into the ground. In some areas, this could result in increased groundwater recharge compared to existing conditions (under which stormwater runoff is managed mainly through vaults and ponds that do not infiltrate). However, some soil types in the project area are not conducive to infiltration of precipitation into the ground.

It is assumed for this analysis that the risk of adverse effects on peak and base flows would correspond with the amount of proposed new impervious surface. The less impervious surface in an alternative, the lower the potential for adverse effects in a given basin. Alternatives with longer elevated guideways or more elevated stations would likely have less impact on base flows compared to alternatives with more at-grade guideway and/or road widening. Even the alternative with the highest increase in impervious surface would only have a minor impact at a basin-wide level because the light rail alternatives would affect a small proportion of the basin relative to the existing impervious surfaces within the basin.

No Build Alternative

The No Build Alternative would not have any direct long-term impacts on aquatic species or habitat. Conversely, implementing the No Build Alternative would not have potential beneficial environmental effects over the long term, such as reducing increases in motor vehicle traffic in the region, facilitating the concentration of residential and commercial growth in planned growth centers, or implementing compensatory mitigation for impacts on wetlands, streams, and their required buffers.

Segment A: Seattle to Shoreline

Table 4-1 summarizes the amount of stream (in linear feet of open [i.e., not piped] stream channel) and stream buffer area (in acres, based on the width of the regulatory stream buffer in the local jurisdiction) that would be affected by each alternative in each segment. All six alternatives for Segment A would cross Thornton Creek at the same location and would, therefore, affect equal amounts of Thornton Creek and its regulatory buffer⁵. Similarly, all six alternatives would cross the piped tributary near Ridgecrest Park (Stream SSH3) at the same location, affecting equal amounts of the regulatory buffer for that watercourse.

⁵ The segment of Thornton Creek that would be affected is in the city of Seattle within the road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

Table 4-1. Long-Term Impacts on Streams and Buffers by Project Alternative

Segment/Alternative	Stream Channel Affected (linear feet)	Stream Buffer Area Affected ^a (acres)	
Segment A: Seattle to Shoreline			
A1: At-grade/Elevated with NE 145th and NE 185th Street Stations			
A3: Mostly Elevated with NE 145th and NE 185th Street Stations			
A5: At-grade/Elevated with NE 130th, NE 155th, and NE 185th Street Stations	All Alternatives:	All Alternatives: SSH3 (<0.1)	
A7: Mostly Elevated with NE 130th, NE 155th, and NE 185th Street Stations	Thornton Creek (102)	Thornton Creek (0.6) ^b	
A10: At-grade/Elevated with NE 130th, NE 145th, and NE 185th Street Stations			
A11: Mostly Elevated with NE 130th, NE 145th, and NE 185th Street Stations			
Segment B: Shoreline to Mountlake Terrace			
B1: East Side to Mountlake Terrace Transit Center to Median	SMT1 (202)	McAleer Creek (0.6) SMT1 (0.6) SSH2 (<0.1)	
B2: East Side to Mountlake Terrace Transit Center to West Side	SMT1 (202)	McAleer Creek (0.6) SMT1 (0.6) SSH2 (<0.1)	
B2A: East Side to Mountlake Terrace Transit Center to West Side with Optional 220th Street SW Station	SMT1 (202)	McAleer Creek (0.6) SMT1 (0.6) SSH2 (<0.1)	
B4: East Side to Mountlake Terrace Freeway Station to Median	McAleer Creek (39)	McAleer Creek (1.0) SSH2 (<0.1)	
Segment C: Mountlake Terrace to Lynnwood			
C1: 52nd Avenue West to 200th Street SW	Scriber Creek (55)	Scriber Creek (0.3)	
C2: 52nd Avenue West to Lynnwood Transit Center	Scriber Creek (143) SLY1 (58)	Scriber Creek (Not applicable) ^c SLY1 (0.1)	
C3: Along I-5 to Lynnwood Park-and-Ride	Scriber Creek (130) SLY1 (81)	Scriber Creek (Not applicable) ^c SLY1 (0.1)	

^a Values presented in this table represent all affected areas inside the regulatory stream buffers within each local jurisdiction, including areas that overlap with wetlands or wetland buffers. Note that all values are preliminary estimates and most impacts would likely be temporary; see discussion in Section 1.4, Assumptions.

Segment B: Shoreline to Mountlake Terrace

Alternatives B1, B2, and B2A would all cross a piped portion of the main stem of McAleer Creek at the same location immediately east of I-5. All three alternatives would pass through regulatory buffers surrounding open segments of the stream in the cities of Mountlake Terrace and Shoreline, affecting equal amounts of those buffer areas (Table 4-1).

^b Buffer impacts are not on publicly or privately owned parcels and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

^c The portions of Scriber Creek that would be crossed by Alternatives C2 and C3 are within the wetland complex and have no defined channel. As such, no buffers could be applied to these streams for GIS analysis. Stream buffer impacts are described qualitatively in the accompanying text.

Alternative B4 would cross an open segment of McAleer Creek where it exits the culvert under I-5, spanning approximately 39 linear feet of the stream (Table 4-1). Also, because it would pass closer to the stream, this alternative would affect more of the stream buffer than Alternatives B1, B2, and B2A.

Alternatives B1, B2, and B2A would cross the northern tributary to McAleer Creek (Stream SMT1) at or near the same location and would affect approximately equal amounts of the stream and its regulatory buffer. In addition, project-related work in the parking lot for the Mountlake Terrace Transit Center under those three alternatives would cross a piped segment of Stream SMT1 and would affect the regulatory buffer of an open-channel segment upstream of the facility. All three alternatives would affect equal areas of that buffer.

Alternative B4 would enter the I-5 median south of the Mountlake Terrace Park-and-Ride facility and would not affect Stream SMT1 or any of its buffer areas.

All alternatives for Segment B would cross a piped segment of the southern tributary to McAleer Creek (Stream SSH2) at the same location and would, therefore, affect equal amounts of its regulatory buffer (Table 4-1).

Segment C: Mountlake Terrace to Lynnwood

Each of the Segment C alternatives includes one option that begins in the I-5 median before crossing north to the west side of the freeway near 52nd Avenue West (Option 1) and another option that begins on the west side of the freeway (Option 2). Neither of these options would cross streams or pass through stream buffers, so comparisons of the alternatives do not distinguish between the options.

Each alternative would cross Scriber Creek at a different location, with the elevated guideway passing over slightly different lengths of the stream and affecting slightly different areas of stream buffer (Table 4-1). By crossing the stream near the northern end of the Scriber Creek wetland complex, Alternative C1 would affect less of the stream buffer, as well as the associated wetlands and wetland buffers, compared to the other alternatives. Alternative C3, which would cross near the southern end of the wetland complex, would affect slightly more wetland area than Alternative C1. Alternative C2, which would cross the center of the wetland complex, would affect the greatest amount of stream and wetland buffer area. Although the amount of area affected would differ, the overall effects (described under Long-term Impacts, above) would be essentially the same.

Under Alternative C2, the tail track of the elevated guideway would extend over a portion of the northern tributary to Scriber Creek (Stream SLY1), crossing both the stream and its regulatory buffer. The Alternative C3 tail track would cross the same stream in a slightly different location and at an oblique angle, thereby affecting slightly more buffer area (Table 4-1). Alternative C1 would not cross Stream SLY1.

4.1.2 Construction Impacts

Similar to long-term impacts, construction-related impacts would occur where the project limits cross streams or stream buffers. Construction impacts would be temporary, however, and would be limited to the period during and immediately following project construction.

All construction of guideways, stations, and ancillary features under any of the alternatives (with the possible exception of some supporting columns for the elevated guideway through the Scriber Creek wetland complex) are anticipated to occur above the OHWM of any streams in the study area. As such, project construction would not cause disturbance of instream habitat.

The use of artificial lighting in association with nighttime construction could affect fish in study area streams. Research suggests that changes in ambient light may alter migratory behavior or affect predation rates on juvenile salmonids (Tabor et al. 2004).

Any earthwork conducted within a basin has the potential to cause sedimentation that would adversely affect the streams in the basin downstream of the work activity. The most obvious situation in which sedimentation could occur is where earthwork construction occurs in or next to a stream channel. However, any earthwork in a basin might contribute to the already serious sedimentation problems that exist in the streams in the project vicinity. This is because most stormwater in urban settings is collected in a system of pipes or ditches and conveyed directly to the nearest stream. An exception to this practice is in newer developments, where stormwater detention facilities trap much of the sediment carried by upstream sources before discharging into streams. But even in these developments, some of the finer sediments might be discharged to streams as the ponds fill with stormwater and overflow.

The types of adverse impacts from excessive sediment in streams are well documented, and salmonid ecosystems experience a wide range of adverse impacts. For example, excessive sediment might preclude salmonid spawning or successful egg incubation, or it might lower egg survival. The production and diversity of benthic invertebrates—the primary food source of juvenile salmon and resident trout—are reduced as sediment loading increases. Shelter for juvenile salmonids is decreased as the voids between rocks are filled with sediment. Pools may also become full of sediment if loading is high.

Erosion control BMPs are designed to avoid or minimize sediment delivery to streams (Appendix A). The degree to which they are effective depends on correct installation but also on unpredictable circumstances. For instance, conventional BMPs may fail when subjected to extreme rainfall or rain-on-snow events.

Any time heavy equipment is fueled or hydraulic systems are used during construction, fuel or hydraulic fluid has the potential to be spilled. Even though a Spill Prevention, Control, and Countermeasures Plan would be implemented, there is still a possibility that some of this material could be carried by stormwater and enter a stream. Because stormwater throughout a basin ends up in a stream, stormwater entering a storm drain far from a stream is eventually carried to it. Spill prevention BMPs are designed to avoid or minimize construction-related pollutants from entering

streams; however, despite precautions, a low risk still exists for release of pollutants to streams in the study area.

Within each project segment, the risk of construction impacts would be a product of the total amount of ground-disturbing activity within each basin. Construction adjacent to or within streams, wetlands, or their buffers would have the highest risk of delivering sediment and pollutants to downstream waters. As noted in Section 1.4, Assumptions, detailed construction limits are not defined at this early phase in the project design. For this analysis, potential construction limits have been estimated, identifying areas where temporary impacts on streams and stream buffers could extend beyond the analytical buffer defined for the analysis of long-term impacts.

No Build Alternative

The No Build Alternative would not have any temporary, construction-related impacts on aquatic species or habitat.

Segment A: Seattle to Shoreline

All six alternatives for Segment A would cross Thornton Creek at the same location and would, therefore, pose equal risks of construction-related impacts to the stream. The analysis of potential construction impacts did not identify any areas where temporary impacts on Thornton Creek or its buffer could extend beyond the analytical buffer defined for the analysis of long-term impacts. Because the tributary near Ridgecrest Park (Stream SSH3) is entirely within culverts within the study area, none of the alternatives would have the potential to deliver sediment or pollutants to that watercourse.

Segment B: Shoreline to Mountlake Terrace

Based on the amount of stream buffer area affected, Alternatives B1, B2, and B2A would pose equal risks of delivering sediment or pollutants to both the main stem of McAleer Creek and the northern (Stream SMT1) tributary (Table 4-1). In addition to the areas subject to long-term effects, 0.4 acre of the stream buffer for McAleer Creek could be subject to temporary, construction-related impacts under all three alternatives, as would 0.2 acre of the buffer for Stream SMT1. Although a larger area of the McAleer Creek buffer would be subject to potential long-term impacts under Alternative B4 compared to the other Segment B alternatives (Table 4-1), the analysis of potential construction impacts did not identify any areas where the temporary impacts of Alternative B4 on the McAleer Creek buffer would extend beyond the analytical buffer defined for the analysis of long-term impacts. Similarly, Alternative B4 would subject a smaller portion of the buffer on Stream SMT1 to potential long-term impacts, compared to the other Segment B alternatives (Table 4-1), and none of that buffer would be subject to potential additional construction impacts. As a result, the risk of construction-related impacts to both McAleer Creek and Stream SMT1 would likely be less under Alternative B4 than under the other alternatives. Because the southern tributary to McAleer Creek (Stream SSH2) is entirely within culverts in the study area, none of the alternatives would have the potential to deliver sediment or pollutants to that watercourse.

Segment C: Mountlake Terrace to Lynnwood

Based on the amount of wetlands, wetland buffers, and stream buffers that would fall within the project footprint along the northern tributary to Scriber Creek (Stream SLY1) and in the Scriber Creek wetland complex, Alternative C1 would have the lowest risk of construction-related impacts. The risk for Alternative C3 would be slightly higher, and that for Alternative C2 would be highest. The analysis of potential construction impacts identified approximately 0.1 acre of the Scriber Creek buffer that would be subject to potential additional construction impacts under Alternative C1, and less than 0.1 acre of the Stream SLY1 buffer that would be similarly affected under Alternatives C2 and C3. As noted above, the portions of Scriber Creek that would be crossed by Alternatives C2 and C3 are within the wetland complex and have no defined channel. As such, no buffers could be applied to these streams for GIS analysis.

4.2 Vegetation, Terrestrial Wildlife, and Wildlife Habitat

Construction of the Lynnwood Link Extension could affect vegetation in the study area, including terrestrial wildlife species associated with those habitats. Analyses in this subsection address the potential long-term, construction-related, and indirect impacts of each alternative on vegetation and wildlife. These impacts are defined as follows:

- Long-term impacts include permanent loss or degradation of terrestrial habitat (including habitat connectivity); disturbance due to increased human access, noise, and light; impacts on rare plant populations; or contributions to the spread of noxious or invasive plant species.
- Construction-related impacts include temporary loss or degradation of terrestrial habitat, or disturbance due to construction-related noise and light.
- Indirect and secondary impacts include those related to residential and commercial development near stations, or mitigation measures for other resources.

As noted in Section 3.2.3, no ESA-listed or state-listed threatened or endangered plant or wildlife species are known or expected to occur in the study area. Analyses in this section, therefore, address plant and wildlife species collectively, basing the anticipated impacts on the relationships between habitats and individual species or species groups. The following subsections describe the potential impacts on vegetation and wildlife that could result from this project. Discussions of long-term and construction-related impacts include assessments of the range of impacts that could occur for each segment and alternative. Actual impacts would depend on final alternative selection and design, construction footprint and methods, BMPs implemented during construction, and performance of post-construction restoration, including revegetation of disturbed areas and mitigation measures for areas protected under local Critical Areas Ordinances.

4.2.1 Long-Term Impacts

Direct long-term impacts would occur where the project limits cross land cover types that support vegetation or other wildlife habitat features. Clearing for project construction would also increase the risk of contributing to the spread of noxious or invasive weed species. Noise and human activity associated with operation of the light rail system may also result in long-term impacts. The project limits include the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and other ancillary features. For the Draft EIS, all impacts within these areas are considered long-term. As explained in Section 1.4 (Assumptions), analyses in this report treat the construction of both at-grade and elevated guideways and other structures as long-term impacts on vegetation and other resources within the structure's footprint. Sound Transit will reevaluate this assumption and identify temporary construction limits during the Final EIS and/or the permitting phase.

Vegetation and Wildlife Habitat Loss

The effects of project construction on vegetation and wildlife habitat would vary, depending on the land cover type within the project clearing limits. The effects on the Urban cover type, for example, would be minimal. Little or no vegetation is present in areas classified as Urban; therefore, the replacement of existing cover with guideways or other facilities would constitute a minimal change in the characteristics of such areas or their ability to support wildlife. Similarly, areas classified as Residential or Maintained Vegetation are highly modified from pre-development conditions and typically occur alongside roads and other areas with low habitat value. In addition, invasive species are common in such areas. Although project construction in most Residential or Maintained Vegetation areas would constitute a change from a vegetated area to impervious surface, the effects of such construction on vegetation and wildlife would, therefore, be minimal. (The effects of increases in impervious surface are discussed in Section 4.1.1). No areas classified as Open Water fall within the footprint of any of the project alternatives.

The two cover types in which project construction could cause changes in habitat quality are Shrub and Forest. The following subsections focus on assessing the range of impacts that could occur on these two land cover types for each segment and alternative. In both cover types, replacement of existing vegetation with project features would represent a loss of structural and biotic diversity associated with the variety of plant and wildlife species previously present in the cleared areas. In areas classified as Shrub, the potential for adverse effects would vary with site-specific conditions. For example, areas dominated by dense growth of invasive species (e.g., Himalayan blackberry, Japanese knotweed [*Polygonum cuspidatum*]) typically do not support diverse and abundant communities of vegetation and wildlife. Conversely, areas with more native species (e.g., salal, salmonberry, or red alder) typically support a greater number and variety of species.

For this analysis, the amount of Forest cover affected by each alternative is used to indicate the potential for long-term adverse effects on vegetation and wildlife. Construction of project features would have a greater likelihood of reducing the habitat quality of forested areas than other cover types. Clearing of trees, snags, and understory vegetation would cause the loss of nesting and

foraging sites for many species of birds, as well as a reduction in the availability of hiding cover for small mammals. The introduction of cleared areas through patches of contiguous forest cover would result in the fragmentation of the forested habitat. By increasing the amount of edge habitat (where sensitive wildlife species are less protected from weather extremes and are more susceptible to predation from species that are adapted to open habitats), fragmentation compounds the effects of habitat loss by reducing the quality of the remaining habitat.

Noxious Weeds

Noxious weeds and exotic plants rapidly colonize disturbed sites such as construction areas. They prevent native species from becoming re-established following ground disturbance, spread into undisturbed areas where they can affect habitat value on additional lands, and provide very poor wildlife habitat or forage. Several of the BMPs that would be implemented during project construction are intended to avoid, reduce, and control new infestations of noxious weeds (see Appendix A). Consistent and successful application of these measures would reduce potential habitat disturbance and improve existing habitats that are already disturbed.

Despite the implementation of BMPs, it is likely that some especially invasive weeds such as Himalayan blackberry could become established in some areas disturbed during construction. However, the Lynnwood Link Extension could also improve conditions where existing noxious weeds such as Himalayan blackberry, reed canarygrass, or Japanese knotweed dominate vegetated areas within the study area. Because of project construction, such areas would either be replaced with project features or disturbed and replanted with native species, increasing the potential for reestablishment of native vegetation.

Noise and Human Activity

Both noise and human activity have been demonstrated to displace wildlife from occupied habitats, interfere with the ability to hear territorial songs in birds, interfere with mating and alarm calls of amphibians and small mammals, and interfere with raptor foraging activities. Numerous studies document the avoidance of roads and similar facilities by wildlife and the disturbance of wildlife by human activity at varying distances. However, most of these studies have considered the impacts of new construction or facilities and human activities in areas where none or few of these facilities or human activities previously existed. This is not the case in the Lynnwood Link Extension study area, which is within or immediately adjacent to the I-5 corridor for nearly its entire length. In addition to the noise and vehicle traffic on the highway, regular human activity associated with residential and commercial development is a common feature of the landscape throughout the study area. Wildlife that use habitats adjacent to the project alternatives are more or less accustomed to some level of human activity and noise. Impacts would be related to changes in noise levels and the types of human activities.

In areas where the project alternatives pass through areas outside of the I-5 corridor, the construction of guideways, stations, or other facilities could constitute the introduction of a new source of disturbance in areas where wildlife species are less accustomed to noise and human

activity. Animals that are sensitive to noise, light, or other human-related disturbance may be displaced from otherwise suitable habitat, potentially leading to competition with animals that occupy suitable habitat at other, less developed sites. Such competition may produce increased stress and decreased reproductive success for affected individuals. Animals displaced from areas of suitable habitat may also be exposed to an elevated risk of predation or vehicle collisions while they are seeking new areas of suitable habitat. The degree of displacement would generally be proportionate to the change in noise levels over background conditions (which would be a product of the distance between noise sources and areas of occupied habitat), as well as the frequency, duration, and types of noise and human activity. Based on the limited amount of area that would be affected under any of the alternatives, such effects would not be expected to cause changes in the regional populations of any wildlife species.

No Build Alternative

The No Build Alternative would not have any direct long-term impacts on vegetation or wildlife. Conversely, implementing the No Build Alternative would not have potential beneficial environmental effects over the long term, such as concentrating residential and commercial development in planned growth centers. Land development in areas away from such centers could result in the degradation or loss of high-value habitat in outlying and rural areas.

Segment A: Seattle to Shoreline

As a result of the construction of guideways and stations in areas of Shrub along I-5, more of this cover type would be affected by project construction in Segment A than in either of the other two segments (Table 4-2). All six alternatives would affect approximately 10 to 11 acres of this cover type. The alternatives would also affect similar amounts of Forest cover, ranging between 1 and 2 acres. All affected areas of these two cover types would be immediately adjacent to the I-5 corridor. Impacts on these areas, therefore, are not expected to have substantial adverse effects on vegetation or wildlife resources in the study area. Most of the affected area in Segment A would consist of the Residential, Maintained Vegetation, and Urban cover types. None of the Segment A alternatives would affect any forested habitat within the priority habitat area at Northacres Park.

Segment B: Shoreline to Mountlake Terrace

Elevated portions of the guideway for Alternatives B1, B2, and B2A would pass through the patch of Forest cover (which WDFW [2012b] has identified as a priority habitat area) immediately north of the Mountlake Terrace Transit Center. Construction of a stormwater detention facility on the west side of I-5 near the Mountlake Terrace Station under Alternative B2 and Alternative B2A would affect additional Forest cover. As a result of construction in these and other portions of Segment B, Alternative B2 and Alternative B2A would each affect approximately 11 acres of Forest, compared to 5 acres under Alternative B1 (Table 4-2). Potential adverse effects of alignment construction in forested areas under these alternatives would include habitat fragmentation and loss and an elevated risk of introducing invasive species, as well as disturbance of sensitive species, as described above. Substantially less Forest cover would be affected under Alternative B4, which would enter the I-5

median south of the Mountlake Terrace Transit Center, thereby avoiding the patch of forested habitat north of the facility (Table 4-2). Alternatives B1, B2, and B4 would affect similar amounts of Shrub, ranging between 1 and 2 acres. Construction of the 220th Street SW Station and associated parking garage would affect approximately 7 acres of Shrub habitat on the north side of the street.

A portion of the 11 acres of Forest habitat that would be affected by Alternative B2 and Alternative B2A consists of a strip of Forest cover along I-5 in south Lynnwood, north of 220th Street SW. Construction of at-grade portions of the guideway in this area would remove the existing cover altogether. The current habitat value of this strip is limited by its narrow, linear shape and by its location between I-5 and adjacent residential development.

Table 4-2. Long-Term Impacts on Land Cover Types by Project Alternative

	Acres within Project Footprint, by Land Cover Type				
Segment/Alternative	Forest	Shrub	Residential	Maintained Vegetation	Urban
Segment A: Seattle to Shoreline					
A1: At-grade/Elevated with NE 145th and NE 185th Street Stations	2	10	13	9	11
A3: Mostly Elevated with NE 145th and NE 185th Street Stations	1	10	13	7	4
A5: At-grade/Elevated with NE 130th, NE 155th, and NE 185th Street Stations	2	11	14	9	7
A7: Mostly Elevated with NE 130th, NE 155th, and NE 185th Street Stations	1	11	13	6	3
A10: At-grade/Elevated with NE 130th, NE 145th, and NE 185th Street Stations	2	10	15	10	8
A11: Mostly Elevated with NE 130th, NE 145th, and NE 185th Street Stations	2	10	13	7	4
Segment B: Shoreline to Mountlake Terrace					
B1: East Side to Mountlake Terrace Transit Center to Median	5	1	<1	6	7
B2: East Side to Mountlake Terrace Transit Center to West Side	11	2	1	2	5
B2A: East Side to Mountlake Terrace Transit Center to West Side with Optional 220th Street SW Station	11	7	1	3	7
B4: East Side to Mountlake Terrace Freeway Station to Median	3	1	<1	6	5
Segment C: Mountlake Terrace to Lynnwood					
C1: 52nd Avenue West to 200th Street SW, Option 1 (Median)	1	<1	1	1	9
C1: 52nd Avenue West to 200th Street SW, Option 2 (West of I-5)	1	<1	1	0	8

Acres within Project Footprint, by Land Cover Type Maintained Segment/Alternative **Forest** Shrub Residential Vegetation Urban C2: 52nd Avenue West to Lynnwood 2 1 8 <1 -1 Transit Center, Option 1 (Median) 1 2 0 8 C2: 52nd Avenue West to Lynnwood <1 Transit Center, Option 2 (West of I-5) C3: Along I-5 to Lynnwood Park-and-1 1 0 2 16 Ride, Option 1 (Median) C3: Along I-5 to Lynnwood Park-and-2 15 <1 <1

Table 4-2. Long-Term Impacts on Land Cover Types by Project Alternative

Segment C: Mountlake Terrace to Lynnwood

Ride, Option 2 (West of I-5)

Although the Segment C alternatives and options would cross the Scriber Creek wetland complex at different locations, they would not differ substantially in the amounts of Forest and Shrub they would affect (Table 4-2). The west of I-5 option (Option 2) of Alternative C3 would affect more Forest cover than the other alternatives and options. Most of the affected area would consist of a strip of Forest and Shrub along I-5 east of 52nd Avenue West. The guideway would be elevated in this area, limiting the potential for adverse effects on vegetation and wildlife in the area. In addition, the current habitat value of this strip is limited by its narrow, linear shape and its location between I-5 and adjacent commercial development. The two options of Alternative C2, which would pass through the center of the wetland complex, would affect more Shrub than the other alternatives (Table 4-2).

Notably, under all three alternatives, habitats in the Scriber Creek wetland complex would be spanned by elevated guideways. No construction of at-grade facilities would occur in the complex. Construction of elevated guideways can reduce the amount of water and sunlight reaching the vegetation underneath. Because the guideway structure would be relatively narrow (31 feet wide) and generally more than 15 feet above the ground surface, shading impacts on vegetation would be minimal. Constructing any of the Segment C alternatives would not modify the vegetation types beneath the elevated facilities or adversely affect the wildlife communities that use those habitats.

4.2.2 Construction Impacts

Similar to long-term impacts, construction-related impacts would occur where the project limits cross land cover types that support vegetation or other wildlife habitat features. Construction impacts would be temporary, however, and would be limited to the period during and immediately following project construction.

Construction activities under the light rail alternatives would temporarily affect vegetation and wildlife in the study area. Vegetation and wildlife habitat would be temporarily affected by clearing beyond the boundaries of the project footprint (e.g., for access roads or equipment storage areas), as well as clearing beneath elevated structures. Impacts would include the loss of vegetation and

habitat, disturbance by noise and construction activity, and displacement of wildlife into potentially less suitable habitats. Wildlife would likely be displaced when construction begins. In areas of temporary vegetation clearance, wildlife species displaced by construction noise would likely return after construction is complete, provided human activity levels return to pre-construction levels. Any such return to pre-construction conditions would depend in part on the re-establishment of vegetation, however, and would not occur immediately. Herbaceous vegetation and some fast-growing shrubs would require 2 to 5 years to return to pre-project conditions. Areas of mature forest would require several decades. Species that forage on or near the ground, such as urban-dwelling small mammals or birds such as juncos and song sparrows, could return to their preferred habitats first. Species that require mature vegetation—especially those that use large shrubs and trees (e.g., wrens, chickadees, and woodpeckers)—would recolonize their preferred habitats last.

Although detailed construction limits are not defined at this early phase in the project design, potential construction limits have been estimated near streams, stream buffers, wetlands, and wetland buffers. These consist of areas where temporary impacts could extend beyond the analytical buffer defined for the analysis of long-term impacts. Additional staging areas could be identified later by the contractor, if needed. Direct construction impacts will be identified during the Final EIS and permitting phases. For the analyses in this document, it is assumed that the level of temporary construction impacts would be commensurate with the level of long-term impacts for each alternative. As with those analyses, the impact assessments focus on the Forest and Shrub land cover types, which would have the greatest potential to be adversely affected by construction of light rail facilities.

No Build Alternative

Implementation of the No Build Alternative would not have any temporary, construction-related impacts on vegetation or wildlife.

Segment A: Seattle to Shoreline

Because of the scarcity of the Forest and Shrub cover types in this portion of the study area, the alternatives would not differ substantially in their construction-related effects on vegetation and wildlife in Segment A.

Segment B: Shoreline to Mountlake Terrace

Based on the amount of Forest and Shrub cover that would fall within the project footprint, construction of Alternative B2 and Alternative B2A would have the greatest potential for construction-related impacts on vegetation and wildlife in the study area, followed by Alternative B1. Alternative B4, which would enter the I-5 median south of the Mountlake Terrace Transit Center and would, therefore, avoid impacts on most existing vegetated land cover and would have the least potential for construction-related impacts.

Segment C: Mountlake Terrace to Lynnwood

Based on the amount of the Scriber Creek wetland complex that would fall within the project footprint, construction of Alternative C2 would have the greatest potential for construction-related impacts on vegetation and wildlife in the study area. Alternative C3, which would cross near the southern end of the wetland complex, would affect slightly more of that area than Alternative C1. Based on the current habitat value of the strip of Forest and Shrub along I-5 east of 52nd Avenue West, the potential for the west of I-5 option (Option 2) of Alternative C3 to cause substantial construction-related effects on that patch of habitat would be minimal.

4.3 Wetlands

Construction of the Lynnwood Link Extension could have impacts on wetlands in the study area. These impacts can be direct (long term), indirect (long term), and temporary (construction):

- Long-term, direct impacts occur when all or a portion of a wetland is filled or excavated so that it becomes a non-wetland.
- Long-term, indirect impacts are typically disturbances that reduce or eliminate wetland functions without directly filling or excavating wetland soils. Indirect impacts occur when permanent wetland impacts result in reduction or elimination of wetland functions in the remaining wetland area, or when alterations to surface water flows separates the remnant wetland from its hydrologic source and prevents it from maintaining wetland hydrology. Reduction of wetland functions occurs when the wetland area is reduced to an extent that it is unable to provide some or all of its pre-disturbance functions. A wetland may become a complete loss when the majority of a wetland is directly affected, leaving the remaining wetland area with altered hydrologic sources and/or reduced pre-project functions.
- Impacts are considered temporary when wetland area and functions are lost for a period of time but are subsequently restored to existing conditions or better.

The following subsections describe the potential impacts on wetlands that could result from the light rail alternatives. The potential for wetland-related impacts to affect sensitive fish species is addressed in Section 4.1, Aquatic Species and Habitat. Discussions of long-term and construction-related impacts include assessing the range of impacts that could occur for each segment and alternative. Actual impacts would depend on the final alternative selection and design, construction footprint and methods, BMPs implemented during construction, performance of post-construction restoration of temporarily disturbed wetlands and buffers, and performance of compensatory mitigation for impacts on areas protected under local Critical Areas Ordinances.

4.3.1 Long-Term Impacts

Direct long-term (i.e., permanent) impacts would occur where the project limits cross wetlands or buffers. The project limits include the guideway, station footprints (including parking), roadway improvements, storm drainage ponds, and ancillary features. For the Draft EIS, all impacts within these areas are considered long term. As explained in Section 1.4 (Assumptions), analyses in this

document treat the construction of both at-grade and elevated guideways (including the area underneath) and other structures as long-term impacts on wetlands and other resources within the structure's footprint. However, based on factors such as the width and height of the elevated guideway, some of these areas may not experience long-term impacts. During the Final EIS and/or the permitting phase, Sound Transit will re-evaluate these assumptions to provide a more detailed assessment of long-term impacts and identify detailed temporary construction limits to distinguish which wetlands and buffers could be restored.

Indirect long-term impacts might also occur due to construction and operation activities. Potential indirect long-term impacts for each project alternative include the following:

- Modification of wetland and wetland buffer vegetation (e.g., conversion of forest-dominated areas to shrub-dominated area due to vegetation maintenance intended to prevent trees and branches from interfering with operation of the light rail)
- Partial shading of wetlands and buffers from shadows cast beyond the elevated structure footprint
- Water quality degradation due to runoff from paved areas to surface waters or wetlands
- Alteration of wetland hydrology (disconnection, disruption, or change in water quantity)

Potential long-term impacts on wetlands and buffers for each segment and project alternative are summarized in Table 4-3 and shown on figures in Appendix D.

Table 4-3. Long-Term Impacts on Wetlands and Buffers by Project Alternative

Segment/Alternative	Wetland Area Affected (acres)	Wetland Buffer Area Affected ^a (acres)
Segment A: Seattle to Shoreline		
A1: At-grade/Elevated with NE 145th and NE 185th Street Stations	0.7	0.8 ^b
A3: Mostly Elevated with NE 145th and NE 185th Street Stations	0.7	0.7 ^b
A5: At-grade/Elevated with NE 130th, NE 155th, and NE 185th Street Stations	0.7	1.2 ^b
A7: Mostly Elevated with NE 130th, NE 155th, and NE 185th Street Stations	0.7	1.2°
A10: At-grade/Elevated with NE 130th, NE 145th, and NE 185th Street Stations	0.7	0.7 ^b
A11: Mostly Elevated with NE 130th, NE 145th, and NE 185th Street Stations	0.7	0.7 ^b
Segment B: Shoreline to Mountlake Terrace		
B1: East Side to Mountlake Terrace Transit Center to Median	<0.1	0.6
B2: East Side to Mountlake Terrace Transit Center to West Side	0.5	1.3
B2A: East Side to Mountlake Terrace Transit Center to West Side with Optional 220th Street SW Station	1.7	0.9
B4: East Side to Mountlake Terrace Freeway Station to Median	0.1	0.7

0.5 / 0.9

0.5 / 1.0

Segment/Alternative	Wetland Area Affected (acres)	Wetland Buffer Area Affected ^a (acres)
Segment C: Mountlake Terrace to Lynnwood		
C1: 52nd Avenue West to 200th Street SW, Option 1 (Median) and Option 2 (West of I-5)	<0.1 / <0.1	0.5 / 0.9

Table 4-3. Long-Term Impacts on Wetlands and Buffers by Project Alternative

0.9 / 1.0

0.2 / 0.2

No Build Alternative

C2: 52nd Avenue West to Lynnwood Transit Center,

Option 1 (Median) and Option 2 (West of I-5)

C3: Along I-5 to Lynnwood Park-and-Ride Option 1

(Median) and Option 2 (West of I-5)

The No Build Alternative would not have any long-term impacts on wetlands or buffers in the study area. Conversely, implementing the No Build Alternative would not have potential beneficial environmental effects over the long term, such as implementing compensatory mitigation for impacts to wetlands, streams, and the regulatory buffers, or concentrating residential and commercial development in planned growth centers. Land development in areas away from such centers could cause degradation or loss of wetlands in outlying and rural areas.

Under the No Build Alternative, as well as all light rail alternatives, public agencies would continue current management practices within rights-of-way such as clearing for maintenance of vegetation and stormwater conveyance. Management activities would include periodic mowing, removal of dead or dying trees and tree limbs that could fall on the roadway, and clearing of brush that encroaches on the roadway. These activities would affect wetland vegetation and habitat by preventing trees and shrubs from becoming established in mowed areas, and preventing forested areas in the proposed right-of-way from developing natural features such as snags and downed wood.

Segment A: Seattle to Shoreline

The six Segment A alternatives are all located on the east side of I-5 from Northgate in Seattle to NE 185th Street in Shoreline, with the potential to affect nine wetlands totaling 0.7 acre (Table 4-3). Buffer impacts range from 0.7 to 1.2 acres⁶. Impact quantities show slight variations based on the rail alignment and location of stations and detention ponds. Most affected wetland and buffer areas

^a Based on local jurisdiction regulatory buffer widths (Seattle Municipal Code 25.09.160.C, Shoreline Municipal Code 20.80.330, Mountlake Terrace Municipal Code 16.15.090, and Lynnwood Municipal Code 17.10.051). Note that some impacts on wetlands and wetland buffers classified as long term would likely be temporary; see discussion in Section 1.4, Assumptions.

^b 0.5 acre of these wetland buffer impacts are within the city of Seattle, not on publicly or privately owned parcels, and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

^c 0.4 acre of these wetland buffer impacts are within the city of Seattle, not on publicly or privately owned parcels, and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

⁶ 0.4 to 0.5 acre of these wetland buffer impacts are within the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

are within the WSDOT right-of-way; they are degraded, vegetated by invasive species, and disconnected to other habitats by roadways and development.

A1: At-grade/Elevated with NE 145th and NE 185th Street Stations

Alternative A1 would result in 0.7 acre of wetland impact. Six wetlands would be considered a complete loss. The majority of each of these wetlands would be directly affected, leaving the remaining wetland area with altered hydrologic sources and/or reduced pre-project functions (although this could be considered an indirect impact, this analysis considers it likely to be concurrent with the project and therefore would be a direct impact). Four of these wetlands are located where the guideway is elevated (Wetlands WSE3, WSE5, WSE6, and WSH3); one occurs where the guideway is at-grade (Wetland WSH2), and one is at the NE 145th Street Station (Wetland WSH1). The NE 185th Street Station would not affect any wetlands. Portions of one other wetland and two potential wetlands would also be affected by elevated guideway (Wetland WSE2) or at-grade guideway (Wetlands PWSH1 and PWSH4).

The buffers of two wetlands (Wetlands WSE1 and WSE2) and two potential wetlands (Wetlands PWSH1 and PWSH4) would be affected, totaling 0.8 acre⁷. The guideway over the buffer of Wetlands WSE1 and WSE2 would be elevated, and the guideway would be at-grade through the buffers of Wetlands PWSH1 and PWSH4.

A3: Mostly Elevated with NE 145th and NE 185th Street Stations

The project limits and guideway alignment of Alternative A3 would be similar to Alternative A1 using the same station locations; however, most of the guideway would be elevated.

Alternative A3 would result in 0.7 acre of wetland impact. Similar to Alternative A1, six wetlands would be considered a complete loss with five of these located where the guideway is elevated (Wetlands WSE3, WSE5, WSE6, WSH2, and WSH3) and one at the NE 145th Street Station and associated detention ponds (Wetland WSH1). The NE 185th Street Station would not affect any wetlands. Portions of one other wetland and two potential wetlands would also be affected by the elevated guideway (Wetlands WSE2, PWSH1, and PWSH4).

This alternative (along with Alternatives A10 and A11) would affect buffers (0.7 acre⁸) the least. The buffers of two wetlands (Wetlands WSE1 and WSE2) and two potential wetlands (Wetlands PWSH1 and PWSH4) would be affected by elevated guideway.

⁷ The impacted buffers of Wetlands WSE1 and WSE2 (0.5 acre) are within the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

⁸ The impacted buffers of Wetlands WSE1 and WSE2 (0.5 acre) are within the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

A5: At-grade/Elevated with NE 130th, NE 155th, and NE 185th Street Stations

The alignment for Alternative A5 is similar to A1, but Alternative A5 has stations at NE 130th Street and NE 155th Street, instead of NE 145th Street. Alternative A5 would result in 0.7 acre of wetland impact. Five wetlands would be considered a complete loss with four of these located where the guideway is elevated (Wetlands WSE3, WSE5, WSE6, and WSH3) and one where the guideway is at-grade (Wetland WSH2). The 130th Street, NE 155th Street, and NE 185th Street Stations would not affect any additional wetlands. Wetland WSH1 would not be a complete loss because no station is proposed at NE 145th Street. Only a small portion of the wetland would be crossed by elevated guideway. Portions of one other wetland and two potential wetlands would also be affected by elevated guideway (Wetlands WSE2, PWSH1, and PWSH4).

This alternative (along with Alternative A7) would affect buffers the most. The buffers of three wetlands (Wetlands WSE1, WSE2, and WSH1) and three potential wetlands (Wetlands PWSH1, PWSH4, and PWSH5) would be affected, totaling 1.2 acres⁶. The majority (1.0 acre) of buffer impacts are associated with the elevated guideway. The other 0.2 acre of impacts are associated with the NE 155th Street Station.

A7: Mostly Elevated with NE 130th, NE 155th, and NE 185th Street Stations

Alternative A7 has a mostly elevated guideway similar to A3, but similar station choices as Alternative A5. This alternative would result in 0.7 acre of wetland impact. Similar to Alternative A5, five wetlands would be considered a complete loss with four of these located where the guideway is elevated (Wetlands WSE3, WSE5, WSE6, and WSH3) and one where the guideway is at-grade (Wetland WSH2). The NE 130th Street, NE 155th Street, and NE 185th Street Stations would not affect any additional wetlands. Wetland WSH1 would not be a complete loss because no station is proposed at NE 145th Street. Only a small portion of the wetland would be crossed by the guideway. Portions of one other wetland and two potential wetlands would also be affected by elevated guideway (Wetlands WSE2, PWSH1, and PWSH4).

This alternative (along with Alternative A5) would affect buffers the most. The buffers of three wetlands (Wetlands WSE1, WSE2, and WSH1) and three potential wetlands (Wetlands PWSH1, PWSH4, and PWSH5) would be affected, totaling 1.2 acre⁹. The majority (1.0 acre) of buffer impacts are associated with the elevated guideway. The other 0.2 acre of impacts are associated with the NE 155th Street Station.

-

⁹ The impacted buffers of Wetlands WSE1 and WSE2 (0.4 acre) are within the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

A10: At-grade/Elevated with NE 130th, NE 145th, and NE 185th Street Stations

The project limits and guideway alignment of Alternative A10 would combine elements from Alternatives A1 and A5. Alternative A10 would result in 0.7 acre of wetland impact. Six wetlands would be considered a complete loss with four of these located where the guideway is elevated (Wetlands WSE3, WSE5, WSE6, and WSH3), one where the guideway is at-grade (Wetland WSH2), and one at the NE 145th Street Station (Wetland WSH1). The NE 130th Street and NE 185th Street Stations would not affect any additional wetlands. Portions of one other wetland and two potential wetlands would also be affected by elevated guideway (Wetlands WSE2, PWSH1, and PWSH4).

This alternative (along with Alternatives A3 and A11) would affect buffers (0.7 acre¹⁰) the least. The buffers of two wetlands (Wetlands WSE1 and WSE2) and two potential wetlands (Wetlands PWSH1 and PWSH4) would be affected. All buffer impacts are associated with the elevated guideway.

A11: Mostly Elevated with NE 130th, NE 145th, and NE 185th Street Stations

The project limits and guideway alignment of Alternative A11 would be similar to A7 except that a station at NE 145th Street is proposed instead of at NE 155th Street (similar to Alternative A3).

Alternative A11 would result in 0.7 acre of wetland impact. Similar to Alternative A3, six wetlands would be considered a complete loss with five of these located where the guideway is elevated (Wetlands WSE3, WSE5, WSE6, WSH2, and WSH3) and one at the NE 145th Street Station and associated detention ponds (Wetland WSH1). The NE 130th Street and NE 185th Street Stations would not affect any additional wetlands. Portions of one other wetland and two potential wetlands would also be affected by elevated guideway (Wetlands WSE2, PWSH1, and PWSH4).

This alternative (along with Alternatives A3 and A10) would affect buffers (0.7 acre¹¹) the least. The buffers of two wetlands (Wetlands WSE1 and WSE2) and two potential wetlands (Wetlands PWSH1 and PWSH4) would be affected by the elevated guideway.

Segment B: Shoreline to Mountlake Terrace

Wetland impacts range from less than 0.1 acre (Alternative B1) to 1.7 acres (Alternative B2A). Buffer impacts range from 0.6 acre (Alternative B1) to 1.3 acres (Alternative B2) (Table 4-3).

B1: East Side to Mountlake Terrace Transit Center to Median

Alternative B1 would affect wetlands (less than 0.1 acre) and buffers (0.6 acre) the least. A small portion of Wetland WMT3 may be directly affected by the construction of stairs associated with the Mountlake Terrace Transit Center Station.

_

¹⁰ The impacted buffers of Wetlands WSE1 and WSE2 (0.5 acre) are within the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

¹¹ The impacted buffers of Wetlands WSE1 and WSE2 (0.5 acre) are within the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

The buffers of four wetlands (Wetlands WSH5, WMT1, WMT2, and WMT3) would be affected by elevated guideway and a portion of the buffer associated with Wetland WMT3 would be affected by the construction of stairs associated with the Mountlake Terrace Transit Center Station.

B2: East Side to Mountlake Terrace Transit Center to West Side and B2A: East Side to Mountlake Terrace Transit Center to West Side with Optional 220th Street SW Station

Alternative B2 would result in 0.5 acre of wetland impact. Portions of three wetlands would be affected by elevated guideway (Wetlands WMT5, WMT6, and WMT7) and a small portion (less than 0.1 acre) of one wetland (Wetland WMT3) may be directly affected by the construction of stairs associated with the Mountlake Terrace Transit Center Station.

This alternative would affect wetland buffers the most. The buffers of seven wetlands (Wetlands WSH5, WMT1, WMT2, WMT3, WMT5, WMT6, and WMT7) and one potential wetland (Wetland PWLY3) would be affected, totaling 1.3 acres. All buffer impacts would be associated with elevated guideway. In addition, a portion of the buffer associated with Wetland WMT3 would be affected by the construction of stairs associated with the Mountlake Terrace Transit Center Station.

Alternative B2A would result in the greatest amount of wetland impact. Construction of the 220th Street SW Station, I-5 ramp relocations, and associated stormwater ponds, would affect Wetlands WMT5 and WMT6 in their entirety. This would increase the total wetland impacts to 1.7 acres, while decreasing the buffer impacts to 0.9 acre.

B4: East Side to Mountlake Terrace Freeway Station to Median

Alternative B4 would affect the wetland and buffer of three wetlands (Wetlands WSH5, WMT1, and WMT2) with 0.1 acre of wetland impact and 0.7 acre of buffer impact. All wetland and buffer impacts would be associated with elevated guideway.

Segment C: Mountlake Terrace to Lynnwood

There are three alternatives, each with an option to start in the median (Option 1), or west of I-5 (Option 2), depending on the Segment B alternative. Wetland impacts range from less than 0.1 to 1.0 acre and buffer impacts range from 0.5 to 1.0 acre (Table 4-3). For each alternative, Option 1 would have less impact than Option 2. All Segment C wetland and buffer impacts are associated with elevated guideway.

C1: 52nd Avenue West to 200th Street SW

Alternative C1 would affect the wetlands the least. Alternative C1 (Option 1) would affect the wetland and buffer of one wetland (Wetland WLY4) resulting in less than 0.1 acre of wetland impact and 0.5 acre of buffer impact.

Alternative C1 (Option 2) would affect the same area of Wetland WLY4 as Option 1, in addition to a small portion (less than 0.1 acre) of Wetland WLY3, totaling less than 0.1 acre of impact. The buffer of these wetlands along with the buffer of Wetland PWLY3 would be affected, resulting in a loss of 0.9 acre.

C2: 52nd Avenue West to Lynnwood Transit Center

Alternative C2 would affect the wetlands the most. Alternative C2 (Option 1) would affect the wetland and buffer of one wetland (Wetland WLY4) resulting in 0.9 acre of wetland impact and 0.5 acre of buffer impact.

Alternative C2 (Option 2) would affect the same area of Wetland WLY4 as Option 1, in addition to a small portion (less than 0.1 acre) of Wetland WLY3, totaling 1.0 acre of impact. Buffers of these two wetlands along with the buffer of Wetland PWLY3 would be affected, resulting in a loss of 0.9 acre.

C3: Along I-5 to Lynnwood Park-and-Ride

Alternative C3 (Option 1) would affect the wetland and buffer of one wetland and one potential wetland (Wetlands WLY4 and PWLY1) resulting in 0.2 acre of wetland impact and 0.5 acre of buffer impact.

Alternative C3 (Option 2) would affect the same areas of Wetlands WLY4 and PWLY1 as Option 1, in addition to a small portion (less than 0.1 acre) of Wetland WLY3, totaling 0.2 acre of impact. Buffers of these three wetlands, along with the buffer of Wetland PWLY3, would be affected, resulting in a loss of 1.0 acre.

4.3.2 Construction Impacts

Wetlands could incur long-term temporary and short-term temporary impacts associated with construction:

- Long-term temporary impacts on wetlands occur when functions are affected in such a way that they can be restored to pre-impact performance, or will eventually be restored over time, but not within a year or so.
- Short-term temporary impacts last for a limited time, and functions return to pre-impact performance fairly soon (about 1 year or within one growing season of the impact).

The duration of construction impacts on emergent wetlands is generally short term while the impact duration on forested and scrub-shrub wetlands is typically long term. The amount of area that would be subject to long-term temporary versus short-term temporary impacts was not determined for this analysis because the boundaries of wetland vegetation types (emergent, scrub-shrub, and forested) have not yet been delineated. Such delineations would occur during the Final EIS and/or the permitting phase of this project. It is assumed that areas temporarily affected during construction (access roads, staging areas, etc.) would be restored to pre-project conditions after construction.

Potential construction impacts include vegetation clearing and temporary site grading and filling for access. Although detailed construction limits are not defined at this early phase in the project design, potential construction limits have been estimated near streams, stream buffers, wetlands, and wetland buffers. Temporary impacts on wetlands and wetland buffers are summarized in Table 4-4. In addition, some impacts on wetlands and wetland buffers that are categorized as long term would

likely be temporary; see the discussion in Section 1.4, Assumptions. Construction impacts would be re-evaluated during the Final EIS and permitting phases.

Table 4-4. Construction Impacts on Wetlands and Buffers by Project Alternative

Segment/Alternative	Wetland Area Affected (acres)	Wetland Buffer Area Affected ^a (acres)
Segment A: Seattle to Shoreline		
A1: At-grade/Elevated with NE 145th and NE 185th Street Stations	-	-
A3: Mostly Elevated with NE 145th and NE 185th Street Stations	-	-
A5: At-grade/Elevated with NE 130th, NE 155th, and NE 185th Street Stations	-	-
A7: Mostly Elevated with NE 130th, NE 155th, and NE 185th Street Stations	-	-
A10: At-grade/Elevated with NE 130th, NE 145th, and NE 185th Street Stations	-	-
A11: Mostly Elevated with NE 130th, NE 145th, and NE 185th Street Stations	-	-
Segment B: Shoreline to Mountlake Terrace		
B1: East Side to Mountlake Terrace Transit Center to Median	<0.1	0.4
B2: East Side to Mountlake Terrace Transit Center to West Side	0.2	0.6
B2A: East Side to Mountlake Terrace Transit Center to West Side with Optional 220th Street SW Station	<0.1	0.4
B4: East Side to Mountlake Terrace Freeway Station to Median	-	-
Segment C: Mountlake Terrace to Lynnwood		
C1: 52nd Avenue West to 200th Street SW, Option 1 (Median) and Option 2 (West of I-5)	<0.1 / <0.1	0.2 / 0.2
C2: 52nd Avenue West to Lynnwood Transit Center, Option 1 (Median) and Option 2 (West of I-5)	0.3 / 0.3	0.1 / 0.1
C3: Along I-5 to Lynnwood Park-and-Ride Option 1 (Median) and Option 2 (West of I-5)	0.1 / 0.1	0.2 / 0.2

^a Based on local jurisdiction regulatory buffer widths (Seattle Municipal Code 25.09.160.C, Shoreline Municipal Code 20.80.330, Mountlake Terrace Municipal Code 16.15.090, and Lynnwood Municipal Code 17.10.051).

Temporary construction impacts on the function of wetlands could occur within or adjacent to the construction limits for all light rail alternatives. Such impacts would be qualitative in nature and cannot be quantified. Examples of impacts to functions include soil compaction, accidental spills, noise and anthropogenic disturbance, potential increase of sediment input, and introduction of invasive species.

No Build Alternative

The No Build Alternative would not have any construction impacts on wetlands or buffers in the project vicinity. However, under the No Build Alternative as well as all light rail alternatives, public agencies would continue current management practices within rights-of-way such as clearing associated with maintenance of vegetation and stormwater conveyance (see long-term impacts discussion).

Segment A: Seattle to Shoreline

General construction limits beyond the project footprint were not identified for Segment A due to the alignment's location. It is assumed that because most of the alignment and associated features for the Segment A alternatives are situated on or adjacent to currently developed areas, no additional construction areas in wetlands or buffers would be required outside of the analytical buffer that was used to estimate long-term impacts. As noted in Section 1.4, Assumptions, not all areas within that analytical buffer would be subject to long-term impacts; some areas would be subject only to temporary impacts during construction. It was assumed for this analysis that the level of temporary construction impacts on vegetation would be commensurate with the level of long-term impacts. A similar assumption applies to impacts to wetlands and wetland buffers in Segment A. Based on that assumption, the construction-related effects of all six Segment A alternatives on wetlands would likely be the same, given that the long-term impacts would be the same for all six alternatives (Table 4-3). As for effects on wetland buffers, the long-term impacts of Alternatives A3, A10, and A11 on buffers would be less than those of the other alternatives, so the construction-related effects of these three alternatives would similarly be less than those of the other alternatives. Alternative A1 would have slightly more impacts and Alternatives A5 and A7 would likely have the most construction-related impacts on buffers.

Segment B: Shoreline to Mountlake Terrace

Alternative B4 would likely affect wetlands and buffers the least during temporary construction activities whereas Alternative B2 would likely have the most construction impact. Alternatives B1 and B2A would have similar acreages of construction impacts on wetlands and buffers.

Segment C: Mountlake Terrace to Lynnwood

Alternative C1 would likely affect the wetlands the least during construction whereas Alternative C2 would have the most impact. This is due, in large part, to the construction of a temporary roadway or placement of fill in the wetland area for the alternative, which could increase the impacts beyond the levels assumed for the permanent facility. Options 1 and 2 for the Segment C alternatives would have similar construction-related impacts on wetlands and buffers.

4.4 Indirect and Secondary Impacts

Indirect and secondary impacts include those related to residential and commercial development near stations, or impacts on other resources from mitigation measures. Indirect impacts also include potential interference with possible future habitat restoration projects. For example, the presence of guideways, stations, or other facilities near streams could affect the potential replacement of existing fish passage barriers by limiting options for locations and types of fish-passable crossing structures.

Under any of the light rail alternatives, the potential for development near stations to adversely affect ecosystem resources would be limited by several factors. First, all proposed stations would be located in areas that are already densely developed. Second, any new development in these areas would be subject to review under local Critical Areas Ordinances, which would trigger the implementation of mitigation measures and practices aimed at avoiding or minimizing the potential for adverse effects on wetlands, aquatic species and habitat, and other natural resources such as fish and wildlife habitat conservation areas.

In most locations, the potential for construction of the light rail alternatives to interfere with possible future fish habitat restoration projects would be minimal because project features would be designed and located to avoid streams. Construction would occur above stream OHWMs and the guideways would be elevated at open stream crossings. Exceptions could occur at three stream crossings. First, as discussed in Section 4.1.1, Long-Term Impacts, Scriber Creek lacks a defined channel where it passes through the wetland complex near the Lynnwood Transit Center. It is not possible, therefore, to determine the exact location of the OHWM. All three Segment C alternatives would be elevated where they pass over or near the wetland complex, but construction of elevated guideways could entail the installation of support columns within the wetland area. Based on the absence of human-made fish passage barriers within the wetland complex, however, it is unlikely that any fish passage improvement projects would be planned in that area.

The second location where construction of the light rail alternatives could interfere with possible future stream habitat restoration projects is at the crossing of Stream SSH3. Construction of an atgrade guideway under any of at the Segment A alternatives could limit options for future habitat restoration projects at that site. Based on the site's location immediately adjacent to and upstream of I-5, however, the potential for any such projects to be proposed at that location is low. In addition, as noted in Section 3.1.2, Streams in the Study Area, that watercourse is unlikely to be considered potential fish habitat.

The last location where construction of the light rail alternatives could interfere with possible future fish habitat restoration projects the is at the crossing of Stream SMT1, which has been identified as potential fish habitat. Construction of an elevated guideway under alternatives B1, B2, or B2A could limit options for future habitat restoration projects at that site. South of 236th Street SW, all three of those alternatives run parallel and adjacent to the mapped stream course for approximately 200 feet. The design of any future stream habitat restoration projects at that location could be complicated by the presence of support columns for the elevated guideway.

During the Final EIS, Sound Transit will review available GIS data from local municipalities and identify culverts along documented and potential fish-bearing streams in the study area. That assessment will be used to further inventory locations where fish access improvement projects may occur in the future.

Actions taken to mitigate for impacts on other resources may have beneficial impacts on wetlands and aquatic species and habitats. For example, many jurisdictional wetlands in the study area are surrounded by heavily developed areas or are otherwise isolated from stream networks. Some mitigation measures for these wetlands could take the form of wetland habitat improvement or restoration in areas that contribute more directly to the functioning of stream systems, including those that support fish. To the extent that this occurs, such mitigation efforts could have a beneficial effect on aquatic species and habitats.

4.5 Cumulative Impacts

NEPA defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Past actions and development have greatly changed the landscape in the study area and surrounding vicinity. Present and reasonably foreseeable future actions, including other transportation or infrastructure projects and other planned or pending land use actions or developments in the project vicinity could contribute to cumulative impacts on ecosystem resources in the study area. Impacts could include habitat loss, filling or clearing, altering hydrologic sources, or increasing pollutants and sedimentation in wetlands and streams. Not all reasonably foreseeable actions have the potential to result in adverse effects on the environment. For example, WSDOT and WDFW formed a cooperative program in 1991 to inventory and assess fish passage barriers on WSDOT facilities statewide. Culvert replacement and retrofitting projects through that program may improve fish access to streams in study area.

Several proposed site development projects could have some effect on ecosystem resources in the study area. These include a site in Mountlake Terrace south of 236th Street SW and the Mountlake Terrace Transit Center that is envisioned by the City of Mountlake Terrace to accommodate higher-density development. The Edmonds School District master plan includes developing a bus base and administration center north of I-5 and east of 52nd Avenue West in Lynnwood. Construction of this facility could affect ecosystem resources such the Scriber Creek wetland complex. Sound Transit, in a separate project funded through the Sound Transit 2 plan, is considering an operations and maintenance satellite facility alternative at the same location. The potential facility would be largely on previously developed parcels but a portion would extend into the Scriber Creek wetland complex. The impacts of these projects may include loss or degradation of vegetation, wildlife habitat, streams, wetlands, and associated buffer areas. These impacts would be both short term (e.g., temporary disturbance during construction) and long term (e.g., conversion of vegetated areas to impervious surface).

The potential for future projects to cause adverse effects on ecosystem resources would be limited. Any projects or land use actions would be subject to regulatory review and/or permitting under federal, state, and local regulations. Those review and permitting processes would trigger implementation of measures to avoid or minimize impacts on ecosystem resources. Such processes would also result in compensatory mitigation for any unavoidable impacts to streams or stream buffers, wetlands, or wetland buffers. If combined with the effects of the Lynnwood Link Extension, there would be higher cumulative effects on ecosystem resources than if the impacts of each project were considered on its own. However, if avoidance and mitigation measures such as those described below are applied for all projects, the effects would be reduced. Coordination among the project proponents could also help reduce impacts.

4.6 Potential Mitigation Measures

Sound Transit's policy [Executive Order No. 1, Establishing a Sustainability Initiative for Sound Transit (2007)] on ecosystem mitigation is to avoid impacts on environmentally sensitive resources as much as possible, and to provide adequate mitigation for unavoidable impacts to ensure no net loss of ecosystem function and acreage as a result of agency projects. The Lynnwood Link Extension would mitigate impacts on ecosystem resources in accordance with the mitigation sequencing requirements established by NEPA, the CWA, and local Critical Areas Ordinances.

According to NEPA (40 Code of Federal Regulations [CFR] paragraphs 1508.20), the sequence of mitigation is as follows:

- a) Avoiding the impact altogether by not taking a certain action or parts of an action
- b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation
- c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- e) Compensating for the impact by replacing or providing substitute resources or environments

Avoidance and Minimization

The avoidance and minimization of impacts was a guiding principle in the preliminary design of project alternatives. Sound Transit would comply with standard specifications, BMPs, and applicable federal, state, and local mitigation requirements during design, construction, and post-construction activities. BMPs typically required for avoidance and minimization of impacts on ecosystem resources are provided in Appendix A.

Restoration of Construction Impacts

Immediately following construction in each project segment, Sound Transit would begin restoring temporarily disturbed wetlands, streams (if any work occurs below the OHWM of any streams), and buffer areas. The length of time that would be required for site restoration to effectively replace habitat functions would vary. Temporarily disturbed wetlands, streams, and their buffers would be

restored to pre-construction conditions where feasible and planted with appropriate native species when construction activities are finished.

Compensatory Mitigation

For any wetland, stream, and buffer impacts that could not be avoided or adequately minimized, Sound Transit would replace the area and functions lost through compensatory mitigation. As appropriate, Sound Transit would apply the federal Final Compensatory Mitigation Rule (40 CFR Part 230); appropriate current available agency regulations; guidelines established jointly by Ecology, the U.S. Army Corps of Engineers, and U.S. Environmental Protection Agency in *Wetland Mitigation in Washington State* (Ecology et al. 2006); and local Critical Areas Ordinances for the cities of Seattle, Shoreline, Mountlake Terrace, and Lynnwood.

Long-term impacts on wetlands and buffers could be mitigated by one or more of the following approaches:

- Approved mitigation bank
- King County in-lieu fee program
- Project-specific mitigation developed by Sound Transit

Also, Sound Transit would consider opportunities to establish mitigation in advance of the impacts from future construction of the Lynnwood Link Extension.

Approved Mitigation Bank

Currently, there are no existing approved mitigation banks in the project area basins. Although it is possible that a bank could become certified with service in the project area in the future, mitigation banking projects take considerable lead time for planning and approval.

King County In-Lieu Fee Program (Mitigation Reserves Program)

King County has developed an in-lieu fee program called the Mitigation Reserves Program, which was approved by the U.S. Army Corps of Engineers in March 2012 (King County 2012b). The program includes service areas within King County for the Thornton Creek basin and McAleer Creek basin in the Cedar River/Lake Washington watershed. Sound Transit would discuss this program with the Cities of Seattle and Shoreline to determine whether this program could be applicable to the Lynnwood Link Extension.

Project-specific Mitigation Developed by Sound Transit

Both the *Wetland Mitigation in Washington State* guidance and local codes require that wetland mitigation be completed at specific replacement ratios relative to the category of the wetland affected and the type of mitigation proposed (i.e., wetland creation, restoration, enhancement, or preservation) (Tables 4-5 through 4-9). These replacement ratios are guidelines from which case-by-case consideration start. To determine the appropriate mitigation ratios for this project, the project team may propose adjustments to these guidelines to consider unique project circumstances.

Table 4-5. Recommended Wetland Mitigation Ratios for Projects in Western Washington ^a

Category of Wetland Impacts	Re-establishment or Creation	Rehabilitation Only	Re-establishment or Creation (R/C) and Rehabilitation (RH)	Re-establishment or Creation (R/C) and Enhancement (E)	Enhancement Only
Category II	3:1	6:1	1:1 R/C and 4:1 RH	1:1 R/C and 8:1 E	12:1
Category III	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category IV	1.5:1	3:1	1:1 R/C and 1:1 RH	1:1 R/C and 2:1 E	6:1

^a Ecology et al. (2006)

Table 4-6. City of Seattle Wetland Mitigation Ratios^a

Category of Wetland Impacts	Restoration or Creation	Enhancement
Category II	3:1	16:1
Category III	2:1	8:1
Category IV	1.5:1	6:1

^a Seattle Municipal Code 25.09.160.E.5. Only applicable to development on publicly or privately owned parcels.

Table 4-7. City of Shoreline Wetland Mitigation Ratios^a

Category of Wetland Impacts	Creation	Enhancement
Type II	3:1	12:1
Type III	2:1	8:1
Type IV	1.5:1	6:1

^a Shoreline Municipal Code, Table 20.80.350D

Table 4-8. City of Mountlake Terrace Wetland Mitigation Ratios^a

Category of Wetland Impacts	Creation	Enhancement
	Forested 3:1	6:1
Category II	Scrub/Shrub 2:1	4:1
	Emergent 2:1	4:1
	Forested 3:1	6:1
Category III	Scrub/Shrub 2:1	4:1
• •	Emergent 2:1	4:1
Category IV	1.25:1	2.5:1

^a Mountlake Terrace Municipal Code 16.15.110.C.2

Table 4-9. City of Lynnwood Wetland Mitigation Ratios^a

Category of Wetland Impacts	Creation or Restoration	Enhancement ^b
Category II	3:1	-
Category III	2:1	-
Category IV	1.5:1	-

^a Lynnwood Municipal Code 17.10.055

b Ratios not specified for enhancement

Compensatory mitigation would also be provided for long-term temporary impacts and conversion of wetlands from one type to another (e.g., forested wetland to emergent or scrub-shrub wetland). Generally, compensation for long-term temporary impacts is one-quarter of the typical ratios for long-term (permanent) impacts and one-half for conversion of wetlands. Impacts on buffers would generally be replaced at a minimum ratio of 1:1 using buffer enhancement.

The mitigation approach to compensate for unavoidable impacts caused by the project may consist of on-site mitigation, off-site mitigation, or a combination of the two. Opportunities for wetland mitigation occur in the study area and within the greater project vicinity.

In cooperation with resource agencies, Sound Transit would develop plans to mitigate the effects of the project on wetlands and buffers. Site selection would emphasize a watershed approach. To the extent possible, compensatory mitigation sites would be identified and compensate for lost values in-kind. It is environmentally and economically desirable to maximize the ecological functions at sites by consolidating as many mitigation requirements as possible at the least number of mitigation sites. It may be necessary to use several sites and approaches to mitigation given the size of this light rail project, the variety of impacts, complexity of identifying mitigation opportunities, and satisfying mitigation requirements.

Potential project-specific mitigation sites would be selected according to the federal Final Compensatory Mitigation Rule (40 CFR Part 230) and joint guidance developed by Ecology, the U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency (Hruby et al. 2009), which discuss the implementation of a watershed approach to selecting mitigation sites. This approach allows for a greater degree of flexibility in selecting mitigation sites and potentially greater value created for the watershed than the previous regulatory focus on on-site mitigation. Current potential sites under consideration for project-specific mitigation are described below.

North Seattle Community College Campus

Various opportunities for wetland restoration and enhancement may be present on the North Seattle Community College Campus, although other projects proposed in the vicinity may reduce the area available.

City of Seattle or Seattle Public Utilities Potential Projects

Sound Transit could fund projects identified by Seattle Public Utilities on Seattle-owned property, such as at the confluence of the North and South Branches of Thornton Creek (near 35th Avenue NE and NE 110th Street), or near the South Branch Thornton Creek riparian corridor northeast of the intersection of NE 103rd Street and Roosevelt Way NE.

Jackson Park Golf Course/5th Avenue NE

Potential wetland and riparian mitigation could be accomplished along the east side of the 5th Avenue NE right-of-way and the Jackson Park Golf Course, particularly along the North Branch of Thornton Creek.

NE 155th Street Station Vicinity

Wetland creation may be possible south of the new NE 155th Street Station near the proposed stormwater pond in the vicinity of Wetlands PWSH4 and PWSH5.

Ballinger Lake Golf Course

The City of Mountlake Terrace will be transitioning the Ballinger Lake Golf Course to a passive park/open space, which could create wetland restoration opportunities.

Scriber Creek Wetland Complex (Wetland WLY4)

Wetland and stream mitigation opportunities are present in the Scriber Creek vicinity near the Lynnwood Transit Center on parcels that are under both public and private ownership, including parcels that could be acquired by Sound Transit because they intersect with areas needed for the light rail right-of-way. These mitigation opportunities may include wetland creation, restoration, or enhancement.

5 REFERENCES

- Audubon Society. 2011. Database search of Christmas Bird Count data for the Seattle survey area, 2000-2010. Available at: http://birds.audubon.org/historical-results. Database accessed September 19, 2011.
- Brinson, M.M. 1993. A Hydrogeomorphic Classification for Wetlands. Wetlands Research Program Technical Report WRP-DE-4. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.
- Celedonia, M. T., R. A. Tabor, S. Sanders, D. W. Lantz, and I. Grettenberger. 2008. Movement and Habitat Use of Chinook Salmon Smolts and Two Predatory Fishes in Lake Washington and the Lake Washington Ship Canal 2004-2005 Acoustic Tracking Studies. U.S. Fish and Wildlife Service. Lacey, WA. 116 pages.
- City of Lynnwood. 2004. Final Supplemental Environmental Impact Statement for the Lynnwood City Center Sub-area Plan. September 9, 2004. Available at: http://www.lynnwoodeconomicdevelopment.org/CityCenter.ashx?p=1489.
- City of Seattle. 2007. State of the Waters 2007. Volume I: Seattle Watercourses. Available at: http://www.ci.seattle.wa.us/util/Services/Drainage_&_Sewer/Keep_Water_Safe_&_Clean/RestoreOurWaters/ProgramDocuments/index.htm. Accessed March 13, 2012.
- Corps (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-70/31, U.S. Fish and Wildlife Service. Washington, D.C.
- Ecology (Washington State Department of Ecology), U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. 2006. Wetland Mitigation in Washington State Part 1: Agency Polices and Guidance (Version 1) and Part 2: Developing Mitigation Plans (Version 1). Washington State Department of Ecology Publication #06-06-011a and b. Olympia, WA. March 2006.
- Ecology (Washington State Department of Ecology). 2008. Washington State's water quality assessment and 303(d) list: current EPA-approved assessment. Available at: http://www.ecy.wa.gov/programs/wq/303d/2008/index.html. Accessed April 10, 2012.
- Ecology (Washington State Department of Ecology). 2012. Stormwater Management Manual for Western Washington, Volumes I V. Publication Number 12-10-030. Prepared by Washington State Department of Ecology Water Quality Program. Olympia, Washington. August 2012.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, Environmental Laboratory, Department of the Army, Waterways Experiment Station. Vicksburg, MS.

- ESA Adolfson. 2010. Sound Transit 2 Mitigation: Impact Summary and Analysis Memorandum. December 3, 2010. Prepared for Sound Transit. Seattle, WA.
- Sound Transit. 2011. East Link Light Rail Project, Seattle, Washington: Final Environmental Impact Statement. Appendix H3, Ecosystems Technical Report. Prepared by CH2M HILL. Seattle, WA.
- Hendry, A.P., T.P. Quinn, and F.M. Utter. 1996. Genetic Evidence for the Persistence and Divergence of Native and Introduced Sockeye Salmon (*Oncorhynchus nerka*) within Lake Washington, Washington. Canadian Journal of Fisheries and Aquatic Sciences 53:823-832.
- Hruby, T. 2004. Washington State Wetland Rating System for Western Washington Revised. Washington State Department of Ecology Publication #04-06-025. Olympia, WA.
- Hruby, T., K. Harper, and S. Stanley. 2009. Selecting Wetland Mitigation Sites Using a Watershed Approach. Washington State Department of Ecology Publication #09-06-032. Olympia, WA.
- Jackson, S.D. 2003. Ecological Considerations in the Design of River and Stream Crossings. In: Proceedings of the International Conference on Ecology and Transportation, edited by C. Leroy Irwin, Paul Garrett, and K.P. McDermott. Raleigh, NC: Center for Transportation and the Environment, North Carolina State University. 10 pp.
- Johnson, D.H. and T.A. O'Neil (managing directors). 2001. Wildlife-habitat Relationships in Oregon and Washington. Oregon State University Press. Corvallis, OR.
- Jones and Stokes. 2000. Stream Habitat Analysis. Report 2 Salmonid Habitat Assessment. Report prepared for the City of Lynnwood, WA. October 2000.
- Kerwin, J. 2001. Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (Water Resource Inventory Area 8). Report prepared for the Washington Conservation Commission. Olympia, WA. September 2001.
- King County Department of Natural Resources. 2000. Literature Review and Recommended Sampling Protocol for Bull Trout in King County. Seattle, WA. Available at: http://your.kingcounty.gov/dnrp/library/2000/kcr848.pdf.
- King County. 2012a. Streams water quality monitoring data Thornton Creek (0434) and McAleer Creek (A432). King County Water and Land Resources Division, Streams Monitoring Program. Available at: http://green.kingcounty.gov/WLR/Waterres/StreamsData/StreamList.aspx. Accessed March 13, 2012.
- King County. 2012b. Mitigation Reserves Program King County, Washington. Available at: http://www.kingcounty.gov/environment/waterandland/wetlands/mitigation-credit-program.aspx.
- Knutson, K. L., and V. L. Naef. 1997. Management recommendations for Washington's priority habitats: riparian. Washington Department of Fish and Wildlife, Olympia. 181pp.
- Martin, D. J., M. E. Robinson, and R. A. Grotefendt. 1998. The effectiveness of riparian buffer zones for protection of salmonid habitat in Alaska coastal streams. Alaska Forest Association, Ketchikan, AK. 85 p.

- McDade, M. H., F. J. Swanson, W. A. McKee, J. F. Franklin, and J. Van Sickle. 1990. Source distances for coarse woody debris entering small streams in western Oregon and Washington. Canadian Journal of Forest Research. Volume 20, pages 326 to 330.
- McKinley, M. 1997. Large woody debris source distances for western Washington Cascade streams. Unpublished report. Undergraduate senior research project, College of Forest Resources, University of Washington, Seattle, WA. 36 pages.
- McMillan, B. 2007. The Spawning Survey Findings from Seattle's Thornton, Piper's, Longfellow, Fauntleroy and Taylor Creeks, September 21, 2006 to January 24, 2007. Also including the cumulative spawning survey data from 1999-2006 and Des Moines Creek in 2003 and 2004. Prepared by the Wild Fish Conservancy for Seattle Public Utilities. April 2007.
- Murphy, M. L. and K. V. Koski. 1989. Input and depletion of woody debris in Alaska streams and implications for streamside management. North American Journal of Fisheries Management. Volume 9(4), pages 427 to 436.
- Opperman, H., K.M. Cassidy, T. Aversa, E.S. Hunn, and B. Senturia. 2006. Sound to Sage: Breeding Bird Atlas of Island, King, Kitsap, and Kittitas Counties, Washington. Published at http://www.soundtosage.org by the Seattle Audubon Society. Version 1.1. September 2006.
- Otak et al. 2009. Greater Lake Ballinger/McAleer Creek Watershed Study Draft Strategic Action Plan. Prepared by Otak, Inc., Golder Associates, Inc., Clear Creek Solutions, Inc., and EnviroIssues. May 2009.
- Snohomish County. 2002. Swamp Creek Drainage Needs Report. DNR No. 2. Prepared by Snohomish County Public Works, Surface Water Management Division. Everett, WA.
- Sound Transit. 2006. North Link Light Rail Transit Project Final Supplemental Environmental Impact Statement. Seattle, WA.
- Sound Transit (Central Puget Sound Regional Transit Authority). 2012. Design Criteria Manual. Revision 1. Seattle, WA. February 2012.
- Tetra Tech/KCM. 2004a. Thornton Creek and West Lake Washington basins characterization report. Report prepared for the City of Shoreline. May 2004.
- Tetra Tech/KCM. 2004b. McAleer Creek and Lyon Creek basins characterization report. Report prepared for the City of Shoreline. May 2004.
- Tabor, R.A., G.S. Brown, and V.T. Luiting. 2004. The effect of light intensity on sockeye salmon fry migratory behavior and predation by cottids in the Cedar River, Washington. North American Journal of Fisheries Management, 24: 128-145.
- Tabor, R.A., D.W. Lantz, and S.T. Sanders. 2010. Distribution and habitat use of fish in Seattle's streams: Final Report, 2005 and 2006. U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office. Lacey, WA. 122 pages.
- Tschaplinski, P. J., and G. F. Hartman. 1983. Winter distribution of juvenile coho salmon (*Oncorhynchus kisutch*) before and after logging in Carnation Creek, British Columbia, and some implications for overwinter survival. Canadian Journal of Fisheries and Aquatic Sciences 40:452-461.

- Thornton Creek WMC. 2001. Thornton Creek Draft Watershed Action Plan. Thornton Creek Watershed Management Committee and City of Seattle. May 2001.
- Trotter, P.C. 2000. Headwater fishes and their uppermost habitats: a review as background for stream typing. Timber, Fish, and Wildlife Report TFW-ISAG1-00-001 to Washington Department of Natural Resources, Olympia, Washington.
- USFWS (U.S. Fish and Wildlife Service). 2012. Listed and Proposed Endangered and Threatened Species and Critical Habitat; Candidate Species; and Species of Concern in King County and Snohomish County, Washington. Available at: http://www.fws.gov/wafwo/speciesmap_new.html. Accessed September 11, 2012.
- WDFW (Washington Department of Fish and Wildlife). 1999. Bull trout of the Snohomish River system. Washington Department of Fish and Wildlife, Mill Creek, Washington.
- WDFW (Washington Department of Fish and Wildlife). 2011. Progress Performance Report for the WSDOT Fish Passage Inventory. June 2011. Available at: http://www.wsdot.wa.gov/Environment/Biology/FP/fishpassage.htm.
- WDFW (Washington Department of Fish and Wildlife). 2012a. SalmonScape fish database and mapping application. Available at: http://wdfw.wa.gov/mapping/salmonscape/index.html.
- WDFW (Washington Department of Fish and Wildlife). 2012b. PHS on the Web: An interactive map of WDFW priority habitats and species information for project review. Available at: http://wdfw.wa.gov/mapping/phs/.
- WDFW (Washington Department of Fish and Wildlife). 2012c. Salmonid Stock Inventory (SaSI) 2002. Olympia, WA. Available at: http://wdfw.wa.gov/conservation/fisheries/sasi/. Updated August 13, 2012.
- WDFW (Washington Department of Fish and Wildlife). 2013. Salmon and steelhead species in Washington: population status. Available at: https://fortress.wa.gov/dfw/score/score/species/species.jsp. Accessed May 1, 2013.
- Weitkamp, D.E., and G.T. Ruggerone. 2000. Factors Affecting Chinook Salmon Populations, Background Report. Prepared by Parametrix, Inc., Natural Resources Consultants, and Cedar River Associates for City of Seattle, Washington. 224 pp.
- Williams, R.W., R.M. Laramie, and J.J. Ames. 1975. A Catalog of Washington Streams and Salmon Utilization, Volume 1, Puget Sound Region. Washington Department of Fisheries. Olympia, WA.

APPENDIX A

Best Management Practices for Ecosystem Resources

APPENDIX A – BEST MANAGEMENT PRACTICES FOR ECOSYSTEM RESOURCES

This description of measures is a compilation of best management practices (BMPs) that can be used to avoid and minimize temporary construction and long-term impacts of the Lynnwood Link Extension on sensitive ecosystem resources. These BMPs are either required by state or federal agencies to obtain permits required for the project or may be required to comply with typical permit conditions. They are based on Sound Transit's knowledge of permit requirements and experience with conducting environmental compliance and permitting for numerous other projects in the Puget Sound area.

Construction Best Management Practices

General Best Management Practices for All Sensitive Areas

Sound Transit or its construction contractor would work within construction limits marked with fencing and signage. The intent is to prevent unintended impacts on riparian vegetation, wetlands, woodlands, and other sensitive sites outside of the construction limits. The construction limits would be clearly marked with high-visibility construction fencing and signage prior to any ground-disturbing or construction-related activities. There would be no direct site disturbance outside of the construction limits.

Soil or rock stockpiles, excavated materials, or excess soil materials would be prevented from eroding into sensitive habitats, including stream channels, wetlands, and riparian areas outside of the construction limits by high water or storm runoff. Sound Transit or its construction contractor would develop a Temporary Erosion and Sediment Control (TESC) plan that would be implemented during construction. This TESC plan would address potential erosion during construction. Examples of BMPs that would be implemented under the TESC plan include silt fences; protective ground covers such as straw, plastic sheeting, or jute mats; and straw bales in drainage features. The contractor would implement the plan before discharging or allowing runoff from the site. Monitoring requirements specified in the TESC would provide feedback to ensure that the erosion control practices are operating properly and effectively. BMPs would limit soil compaction in sensitive areas. For example, tracked equipment rather than tire-based equipment may be used in areas that are sensitive to adverse effects from soil compaction. Temporary work bridges could be used in extremely sensitive areas, such as the Scriber Creek wetland complex.

Fish and Aquatic Habitat Protection

If a Hydraulic Project Approval (HPA) is required, all work would comply with the terms and conditions set forth in the HPA issued for the project by the Washington Department of Fish and Wildlife (WDFW). The HPA program is the vehicle through which WDFW regulates activities that affect the bed or flow of waters of the state for the protection of fish life. An HPA is required for construction or structural work associated with any bridge structure or culvert construction within or below the OHWM of waters of the state.

Seasonal restrictions (i.e., work windows) applied to work conducted below the OHWM would be as required by an HPA issued by WDFW and by the Section 404 permit issued by the U.S. Army Corps of Engineers (Corps). In accordance with typical requirements of an HPA, when large woody debris must be moved to allow the reasonable use of an over-water or in-water facility, the large woody debris would be returned to the water downstream, where it would continue to provide aquatic habitat function. To reduce the risk of adverse effects on migrating salmonids during project construction, Sound Transit would require construction contractors to direct lighting away from fish-bearing waters and to place hoods or shields on lights, as needed, to minimize the amount of backlight or dispersed light cast toward the water's surface.

If any culverts need to be installed or extended on fish-bearing or potentially fish-bearing streams, design and construction would comply with Washington Administrative Code (WAC) 220-110-070 (http://wdfw.wa.gov/hab/engineer/w2201170.htm) regarding fish passage requirements. Any affected streambeds, stream banks adjacent to culverts, and at the stream relocation reach, would be permanently restored after in-water work with plantings of native or approved woody and herbaceous species within 1 year of completion of each phase of construction. Bank protection would follow the guidelines set forth in WDFW's *Integrated Streambank Protection Guidelines* (http://wdfw.wa.gov/hab/ahg/ispgdoc.htm).

Water Quality Protection

The federal Clean Water Act (CWA) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES) permit program, which is administered by the U.S. Environmental Protection Agency (EPA). EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 of the Revised Code of Washington, which defines the authority and obligations of the Washington State Department of Ecology (Ecology) in administering the wastewater discharge permit program.

Ecology's construction stormwater general permit is required for certain construction activities. The goal of the permit program is to reduce or eliminate stormwater pollution and other impacts on surface waters.

The project must complete a Notice of Intent (NOI) for coverage under the permit. The project would also develop a Construction Stormwater Pollution Prevention Plan that implements BMPs for identifying, reducing, eliminating, or preventing sediment and erosion problems on site. The Construction Stormwater Pollution Prevention Plan would include a TESC; Spill Prevention, Control, and Countermeasures Plan; Concrete Containment and Disposal Plan; Dewatering Plan; and a Fugitive Dust Plan.

Any materials placed below the OHWM (e.g., cobble or boulders for energy dissipation at culvert ends, streambed gravel or other substrates) would be relatively clean and handled in a way to minimize turbidity. Methods would be used such that it is not expected the project would exceed state water quality standards at the point of compliance (WAC 173-201A) when flow is restored to the work site. To the fullest extent practicable, culverts would be installed, modified, and/or

replaced in isolation from stream flow (if there is flow during the work window) by means of a temporary bypass flume, diversion culvert, or by temporarily pumping flow around the in-water work zone. Any temporary dewatering of the in-water work zone would be preceded by work area isolation and fish removal/relocation (as necessary). Fish handling would be conducted by a trained and qualified biologist. Turbid water produced during the course of in-water work would be prevented from discharging to fish-bearing waters or wetlands. Turbid wastewater may be routed to temporary or permanent detention facilities, or to upland areas that provide adequate rates of infiltration.

In accordance with conditions of a typical HPA, heavy equipment used during the course of inwater work would operate from above the OHWM wherever possible. Use of equipment below the OHWM would be limited to that necessary to gain position for work. Drive mechanisms would not enter or operate below the OHWM, except under the terms of the HPA issued by WDFW.

Uncured concrete and/or concrete byproducts would be prevented from coming in contact with streams or water conveyed directly to streams during construction. Any water having direct contact with uncured concrete would be contained and treated or removed from the site (as appropriate) to prevent discharge to streams or wetlands.

If any permanent footings or drilled or pile-driven shafts are installed below the OHWM, installation would be conducted in a manner consistent with Section 404 and other permits issued for the project by the Corps and other parties (as applicable). When constructing drilled shafts, the contractor would ensure that all drilling equipment, drill recovery and recycling pits, and any waste or spoil produced are properly contained to prevent discharge of drill wastes or fluids to any surface water or wetlands.

In accordance with typical Section 401 permit requirements, turbidity would be monitored if inwater work occurs when water is flowing in the streams. Equipment (excluding track-mounted equipment, large cranes, and other relatively immobile equipment) would be refueled and maintenance activities conducted at a distance from the nearest wetlands, ditches, and flowing or standing water approved by regulatory permits. Appropriate spill prevention measures and fuel containment systems would be designed and implemented to completely contain a potential spill as specified in the Spill Prevention, Control, and Countermeasures Plan. If flooding of the work area is expected to occur within 24 hours, all equipment and material would be evacuated from near-stream construction sites. An exception would be for efforts to avoid or minimize resource damage. All equipment that is used for in-stream or in-wetland work would be cleaned prior to operations below the OHWM. Wash water would not be discharged directly into any water body without pretreatment.

Vegetation and Wildlife Protection

The measures listed below would be implemented before and during project construction to avoid or minimize effects on vegetation and wildlife resources. These strategies would be implemented along with others designed to avoid or minimize effects on other resources, such as streams,

wetlands, and soils. The additional strategies would be expected to provide more protection to vegetation and wildlife resources within and adjacent to streams and wetlands.

- Limit construction activity to a relatively small area immediately adjacent to the existing cleared area to minimize vegetation clearing and leave as much vegetation undisturbed as possible.
- As appropriate, restore areas temporarily affected by construction to pre-construction conditions or better through replanting or reseeding.
- Prepare and implement a revegetation plan that emphasizes the use of native species as appropriate.
- In accordance with the Migratory Bird Treaty Act, consult with USFWS on methods to implement during construction to avoid impacts on migratory birds. Such methods could include conducting vegetation clearing outside of the breeding season.

Control of Noxious and Invasive Species

The most effective means of reducing the introduction and spread of noxious and invasive species are weed control and restoration of disturbed construction sites with native plant species suitable for the type of site disturbed. Weed control prevention is important before and during construction. Per federal, state, and local requirements and guidance, Sound Transit would implement appropriate measures to minimize risk of introduction and spread of noxious and invasive species.

Design and Operation Best Management Practices

The project would install permanent stormwater runoff treatment and flow control facilities where needed to comply with Sound Transit's *Design Criteria Manual* (Sound Transit 2012).

The project would incorporate stormwater conveyance and flow control facilities that promote infiltration where applicable.

The project would select, design, and install runoff treatment BMPs that are best suited to the site conditions and best capable of achieving the required levels of treatment (subject to negotiation with the local jurisdiction and/or Ecology). These could include natural or engineered dispersion BMPs; biofiltration BMPs such as vegetated filter strips, biofiltration swales, or ecology embankments; wetpool BMPs; and infiltration BMPs.

The project would route drainage to maintain existing stream basin contributing areas.

The project would implement pesticide application techniques, in accordance with current Ecology water quality agreements, to minimize the impact on aquatic and terrestrial environments.

APPENDIX B

Wetland Identification and Survey Report





Lynnwood Link Extension

Technical Report Wetland Identification and Survey

401 South Jackson Street Seattle, WA 98104-2826

March 2013



Table of Contents

1	Intro	duction	1-1			
	1.1	Project Overview	1-1			
	1.2	Purpose of Report	1-1			
	1.3	Study Area	1-1			
2	Meth	nods	2-1			
	2.1	Data Gathered	2-1			
		2.1.1 Agency Coordination	2-1			
		2.1.2 Maps and Existing Documentation	2-2			
	2.2	Field Reconnaissance Survey	2-2			
	2.3	Wetland Identification				
		2.3.1 Hydrology	2-3			
		2.3.2 Soils	2-3			
		2.3.3 Vegetation	2-4			
	2.4	Wetland Classification and Rating	2-4			
3	Resu	ılts	3-1			
	3.1	Seattle	3-5			
	3.2	Shoreline				
	3.3	Mountlake Terrace				
	3.4	3.4 Lynnwood				
4	Refe	rences	4-1			
I IS	Γ OF Τ	ABLES				
		e 2-1. Key to Plant Indicator Status Categories	2.4			
		e 2-2. Wetland Categories and Buffer Requirements for Wetlands Located in the	4-4			
	Table	Lynnwood Link Extension Study Area	2-5			
	Table	e 3-1. Summary of Field-Identified Wetlands within the Lynnwood Link	2 0			
		Extension Study Area	3-1			
	Table	e 3-2. Summary of Potential Wetlands within the Lynnwood Link Extension				
		Study Area	3-2			
LIS	Γ OF FI	GURES				
	Figur	e 3-1a. Wetlands and Streams in Study Area	3-2			
		e 3-1b. Wetlands and Streams in Study Area				
	Figur	re 3-1c. Wetlands and Streams in Study Area	3-4			

List of Appendices

- A Wetland Field Reconnaissance Dates
- B Photographs
- C Wetland Determination Data Forms
- D Wetland Rating Forms

ACRONYMS AND ABBREVIATIONS

Dep Depressional

DNR Washington State Department of Natural Resources

Ecology Washington State Department of Ecology

EIS Environmental Impact Statement

FTA Federal Transit Authority

GIS geographic information system

GPS global positioning system

HGM hydrogeomorphic

I-5 Interstate 5

NEPA National Environmental Policy Act

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory

PAB palustrine aquatic bed PEM palustrine emergent

PFO palustrine forested

PHS Priority Habitats and Species

PSS palustrine scrub-shrub

PUB palustrine unconsolidated bottom

Riv Riverine Slope Slope

Sound Transit Central Puget Sound Regional Transit Authority

SR State Route

U.S. Fish and Wildlife Service

WDFW Washington Department of Fish and Wildlife
WSDOT Washington State Department of Transportation

1 INTRODUCTION

1.1 Project Overview

The proposed Lynnwood Link Extension would begin at Northgate in north Seattle and end at the Lynnwood Transit Center, and would be about 8.5 miles long. The project area is bounded by Puget Sound to the west and Lake Washington to the east, and is within the cities of Seattle and Shoreline in King County, and Mountlake Terrace and Lynnwood in Snohomish County. The corridor generally follows Interstate 5 (I-5), the major north-south route through Washington State, and serves a large commuter market that travels toward the city of Seattle or north to Everett, where many of the region's jobs are located.

The Lynnwood Link Extension alternatives would extend light rail from the planned north terminus of the Northgate Link Extension at Northgate, and continue north along I-5 to the city of Lynnwood. The full range of alternatives are still being determined as the Draft EIS process progresses, but the project anticipates alternatives that provide a variety of alignment and station locations, generally along I-5, for an elevated and at-grade double-track light rail line from Northgate to the Lynnwood Transit Center. The anticipated range of alternatives will be analyzed by Central Puget Sound Regional Transit Authority (Sound Transit) and Federal Transit Authority (FTA) in the Draft EIS.

1.2 Purpose of Report

This wetland identification and survey report was prepared to describe the wetlands within the Lynnwood Link Extension corridor to support the National Environmental Policy Act (NEPA) review process. This report will help facilitate agency review by providing detailed descriptions of project area wetlands including classifications, ratings, and buffers within each of the four municipalities. Wetland data gathered were used to assist the design of project alternatives.

1.3 Study Area

The study area for wetlands encompasses the areas within 200 feet of either side of the project alternatives or features. Descriptions also include those wetlands that are partly within or cross through the study area.

2 METHODS

The Lynnwood Link Extension wetland identification and survey involved agency coordination and review of existing information, as well as on-site field reconnaissance. Wetlands were identified in the field reconnaissance survey area (defined as public rights-of-way administered by the Washington State Department of Transportation (WSDOT) or other public agencies) using criteria provided in the Corps of Engineers Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0 (2010). Wetland boundary delineations were not conducted as part of this effort. Instead, wetland boundaries were estimated in the field and mapped using global positioning system (GPS) which were incorporated into the project geographic information system (GIS).

Wetlands that extend beyond the field reconnaissance survey area and other potential wetlands outside of the WSDOT or other public rights-of-way that appear to meet the wetland criteria were also incorporated into the GIS data base. Ground-truthing and data collection were not possible for these areas because no rights of entry were obtained for properties outside of the field reconnaissance survey area. Potential wetlands were identified by visual observation from public areas during the field reconnaissance; current local, state, and federal wetland maps; and critical area report figures or plans. Boundaries of potential wetlands were added to the project GIS database by incorporating GIS layers prepared by others or estimating and digitizing boundaries over aerial photographs. All wetlands in the study area will be delineated during the Final Environmental Impact Statement (EIS) and/or permitting phase of this project.

2.1 Data Gathered

Sound Transit conducted a review of existing literature and data to identify and characterize potentially affected wetlands in and near the project area. Existing documentation and information were compiled and reviewed first so that the field reconnaissance effort could focus on verifying data and filling information gaps. This information included published and unpublished reports, maps, Web sites, aerial photographs, and communication with local municipality staff familiar with wetlands within the project vicinity. The data sources are listed below.

2.1.1 Agency Coordination

Sound Transit contacted the following local jurisdictions:

- City of Seattle
- City of Shoreline
- City of Mountlake Terrace
- City of Lynnwood

2.1.2 Maps and Existing Documentation

Sound Transit reviewed the following resources:

- National Wetlands Inventory (NWI) data (U.S. Fish and Wildlife Service [USFWS])
- Natural Resources Conservation Service (NRCS) Soil Survey maps
- Priority Habitats and Species (PHS) data (Washington Department of Fish and Wildlife [WDFW])
- Washington State Department of Natural Resources (DNR) Natural Heritage Program database
- Critical Area Maps from local jurisdictions (Cities of Seattle, Shoreline, Mountlake Terrace, Lynnwood, King County, and Snohomish County)
- Sound Transit 2 Mitigation: Impact Summary and Analysis memorandum and GIS data (ESA Adolfson 2010)
- Aerial photography of the project corridor
- Regulatory compliance documents, such as the North Link Final Supplemental Environmental Impact Statement (Sound Transit 2006), Critical Areas Studies, wetland delineation reports, and stream studies by other agencies or consulting firms, as available

2.2 Field Reconnaissance Survey

Following the review of existing documentation and information, Sound Transit conducted a detailed field reconnaissance survey to confirm wetlands that could be affected. The field reconnaissance survey was conducted to identify, map, and describe wetlands within public rights-of-way administered by the WSDOT or other public agencies within the study area. In preparation for the field reconnaissance, a set of maps was developed showing data from local jurisdiction critical area maps, the NWI, and the Sound Transit 2 Mitigation: Impact Summary and Analysis (ESA Adolfson 2010). Existing data and the study area boundary were overlaid on aerial photographs at a scale of 1:24,000 (1 inch = 200 feet). Field investigations were performed between March 9 and July 23, 2012 (Appendix A). Photographs of each wetland were taken during the field reconnaissance (Appendix B).

Portions of wetlands that extend beyond the field reconnaissance survey area and other potential wetlands outside of the field reconnaissance survey area were identified based on visual observation from public areas during the field reconnaissance; current local, state, and federal wetland maps; critical area reports; and aerial photograph examination. These areas outside of the field reconnaissance survey area that appear to possess all three wetland indicators are included in this study.

2.3 Wetland Identification

Vegetation, soil, and hydrology conditions were documented as necessary at representative locations (sample plots) using methods outlined in the Corps of Engineers Wetland Delineation Manual

(1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0 (2010). These sample plots were identified in the field with labeled flagging and documented using a GPS unit. Both wetland and upland sample plots were documented. Wetland determination data forms were developed for all wetlands within the WSDOT or other public rights-of-way. Observations of existing conditions and characteristics were recorded for each wetland and associated buffer. Wetlands in the study area may have more than one USFWS class (PFO, PSS, PEM, PAB, or PUB). Typically, data would be collected at representative sample plots within each USFWS class, with a paired upland sample plot. However, for this level of review, only one sample plot was established per wetland. A paired upland sample plot was also established for each wetland (except for Wetlands WSE6 and WSE8 which had limited upland between the wetland boundary and roadway, consisting mostly of fill). Additional data may need to be collected when wetland delineations are to be performed during the Final EIS and/or permitting phase of this project. Wetland boundaries were estimated and mapped using GPS, and documented wetlands from other projects or sources will be included in the EIS wetland findings.

Each wetland identified in the study area received a unique identifier that is tracked in a GIS database. Wetlands were named based on whether they were field-identified wetlands ("W") or not field-identified/potential wetlands ("PW"), the city they are located in (Seattle = SE, Shoreline = SH, Mountlake Terrace = MT, or Lynnwood = LY), and the order they were encountered in the field (1,2,3, etc.). For example, Wetland WSE2 is the second field-identified wetland in Seattle. The field reconnaissance was conducted moving generally from south to north through the study area.

2.3.1 Hydrology

The project area was examined for evidence of hydrology. An area is considered to have wetland hydrology when soils are ponded or saturated consecutively 12.5 percent of the growing season. In King County (Seattle), the growing season generally lasts from the beginning of February (February 7) to the beginning of December (December 8) for a total of 304 days (USDA, NRCS 2010a), so ponding or saturation must be present for approximately 38 consecutive days. Primary indicators of hydrology include surface inundation and saturated soils. Secondary indicators of hydrology include drainage patterns, watermarks on vegetation, water-stained leaves, and oxidized root channels.

2.3.2 Soils

Generally, an area must have hydric soils to be considered a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper portion. Biological activities in saturated soil result in reduced concentrations of oxygen that in turn result in a preponderance of organisms that use anaerobic processes for metabolism. Over time, anaerobic biological processes result in certain soil color patterns, which are used as indicators of hydric soil. Typically, low-chroma colors are formed in the matrix of hydric soil. Bright-colored redoximorphic features form within the matrix under a fluctuating water table. Other important hydric soil indicators include organic matter accumulations

in the surface horizon, reduced sulfur odors, and organic-matter staining in the subsurface. Soils were examined by excavating sample pits to a depth of 18 inches or more to observe the soil profiles, colors, and textures. Munsell color charts (Gretag Macbeth 2000) were used to describe the soil colors.

2.3.3 Vegetation

The dominant plants and their wetland indicator status were evaluated to determine whether the vegetation is hydrophytic. Hydrophytic vegetation is generally defined as vegetation adapted to prolonged saturated soil conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants must be facultative, facultative wetland, or obligate, according to the plant indicator status category assigned to each plant species by the U.S. Fish and Wildlife Service (USFWS) (Reed 1988, 1993). Table 2-1 provides the definitions of the indicator status categories.

Plant Indicator Status Category Symbol Definition **Obligate Wetland Plants** OBL Plants that almost always (>99% of the time) occur in wetlands but may rarely (<1% of the time) occur in non-wetlands **Facultative Wetland Plants FACW** Plants that often (67% to 99% of the time) occur in wetlands but sometimes (1% to 33% of the time) occur in non-wetlands **Facultative Plants** FAC Plants with a similar likelihood (33% to 66% of the time) of occurring in both wetlands and non-wetlands Facultative Upland Plants **FACU** Plants that sometimes (1% to 33% of the time) occur in wetlands but occur more often (67% to 99% of the time) in non-wetlands **Upland Plants** UPL Plants that rarely (<1% of the time) occur in wetlands and almost always (> 99% of the time) occur in non-wetlands

Table 2-1. Key to Plant Indicator Status Categories

Source: Environmental Laboratory (1987).

The scientific and common names for plants follow the currently accepted nomenclature. Most of the names are consistent with Plants of the Pacific Northwest Coast (Pojar and MacKinnon 1994) and the PLANTS Database (USDA, NRCS 2012b). During the field investigations by project biologists, dominant plant species were observed and recorded on field data sheets for each data plot (Appendix C).

2.4 Wetland Classification and Rating

Wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). Hydrogeomorphic classifications were assigned to wetlands using the Corps methods established in a Hydrogeomorphic Classification System for Wetlands (Brinson 1993). Wetlands were rated according to local jurisdiction critical area ordinances (CAOs) and the revised Washington State Wetland Rating System for Western

Washington (Hruby 2004) (Appendix D). Buffer widths were assigned to wetlands based on local jurisdiction CAO requirements (Table 2-2).

Table 2-2. Wetland Categories and Buffer Requirements for Wetlands Located in the Lynnwood Link Extension Study Area

Local Rating System	Wetland Category/Type	Required Buffer Width (feet)
City of Seattle ^a	1	100-200
	II	60-85
	III	50
	IV	No buffer
City of Shoreline ^b	1	150
	II	115
	III	65
	IV	35
City of Mountlake Terrace ^c	1	300
	II	100
	III	65
	IV	50
City of Lynnwood ^d	I	110
	II	110
	III	75
	IV	40

^a Based on Seattle Municipal Code (MC) 25.09.160.A and 25.09.160.C (buffer widths determined by habitat function scores). Only applicable to development on publicly or privately owned parcels.

^b Based on Shoreline MC 20.80.320 and 20.80.330 (Standard buffer widths shown)

 $^{^{\}rm c}$ Based on Mountlake Terrace MC 16.15.080 and 16..15.090

^d Based on Lynnwood MC 17.10.050 and 17.10.051 (Standard buffer widths shown)

3 RESULTS

Sound Transit identified 35 wetlands in the study area. Of these, 24 were identified during field surveys within the field reconnaissance survey area (Table 3-1; Figures 3-1a to 3-1c) and 11 were identified as potential wetlands outside of the field reconnaissance survey area via existing documentation and public vantage points (Table 3-2; Figures 3-1a to 3-1c). Ground-truthing and data collection were not possible for the areas identified as potential wetlands because no rights of entry were obtained for properties outside of the field reconnaissance survey area. One of the field-identified wetlands is a constructed stormwater feature that was historically wetland (Wetland WSE2), and one wetland (Wetland WSH1) contains a ditched swale. Additional sites were investigated but were dropped from analysis after determining that they were constructed stormwater ponds, not wetlands. Of the field-identified wetlands, one wetland is rated a Category II, 18 are rated Category III, and 5 are rated Category IV according to the Washington State Wetland Rating System for Western Washington – Revised (Hruby 2004). Existing conditions of wetlands are described below, organized by local jurisdiction.

Table 3-1. Summary of Field-Identified Wetlands within the Lynnwood Link Extension Study Area

W-1118	Sizeb	USFWS	LIOM OL d	Facilia and Dating and	Land Datin of	Buffer Width ^g
Wetland	(acres)	Class ^c	HGM Class ^d	Ecology Rating ^e	Local Rating ^f	(feet)
WSE1	0.44 ^h	PFO	Riv	III	III	60
WSE2	0.42	PSS,PAB	Dep	IV	IV	50
WSE3	0.21	PFO,PEM	Dep,Slope	III	III	60
WSE4	0.09	PFO	Dep	III	III	60
WSE5	0.16	PFO	Dep	III	III	60
WSE6	0.06	PSS	Dep	III	III	60
WSE7	0.14	PSS,PEM	Dep	III	III	60
WSE8	0.63 ^h	PFO,PSS	Dep	III	III	60
WSH1	0.06	PFO,PSS,PEM	Dep,Slope	III	III	65
WSH2	0.09 ^h	PEM	Dep,Slope	IV	IV	35
WSH3	0.03	PEM	Slope	IV	IV	35
WSH4	0.11 ^h	PFO,PEM	Dep,Slope	III	III	65
WSH5	0.37	PFO	Dep	III	III	65
WMT1	0.29	PFO	Dep	III	III	65
WMT2	0.17	PFO	Riv,Slope	III	III	65
WMT3	0.01	PFO	Dep	III	III	65
WMT4	0.43 ^h	PFO,PSS	Dep,Slope	III	III	65
WMT5	0.36	PFO,PEM	Dep	III	III	65
WMT6	1.24	PFO	Dep	III	III	65
WMT7	0.41 ^h	PFO	Dep	IV	IV	50
WMT8	0.01	PFO	Slope	IV	IV	50

Table 3-1. Summary of Field-Identified Wetlands within the Lynnwood Link Extension Study Area (continued)

Wetland ^a	Size ^b (acres)	USFWS Class ^c	HGM Class ^d	Ecology Rating ^e	Local Rating ^f	Buffer Width ^g (feet)
WLY3	0.08	PSS	Dep	III	III	75
WLY4	17.00 ^h	PFO,PSS,PEM	Riv,Dep	II	II	110
WLY6	0.05	PFO	Dep	III	III	75

a Wetlands are identified with alphanumeric codes: WYYn. W stands for wetland; YY = two-letter code for local jurisdiction (SE = Seattle, SH = Shoreline, MT = Mountlake Terrace, LY = Lynnwood); n = sequential identification number.

Table 3-2. Summary of Potential Wetlands within the Lynnwood Link Extension Study Area

Wetland ^a	Size ^b (acres)	USFWS Class ^c	HGM Class ^d	Ecology Rating ^e	Local Rating ^f	Buffer Width ^g (feet)
PWSH1	0.05	PEM	Slope	unknown	III	65
PWSH3	0.10	PFO,PEM	unknown	unknown	III	65
PWSH4	0.19	PFO	Slope	unknown	III	65
PWSH5	0.07	PEM	Slope	unknown	III	65
PWMT1	0.02	PEM	Slope	III	III	65
PWMT2	0.02	PFO	Dep	III	III	65
PWLY1	0.07	PSS	Dep	III	III	75
PWLY2	0.26	PFO	Dep	III	III	75
PWLY3	0.07	PEM	Dep	III	III	75
PWLY4	0.03	PFO	Dep	III	III	75
PWLY5	0.03	PUB	Dep	III	III	75

a Potential wetlands are identified with alphanumeric codes: PWYYn. PW stands for potential wetland; YY = two-letter code for local jurisdiction (SE = Seattle, SH = Shoreline, MT = Mountlake Terrace, LY = Lynnwood); n = sequential identification number.

b Wetland size was determined by estimating and mapping wetland boundaries within the field reconnaissance survey area using GPS which were incorporated into the project GIS. Aerial photographs and visual observations from public vantage points in the field were used to determine the area of wetlands extending outside of the field reconnaissance survey area. Acreage represents the entire wetland area.

^c Cowardin et al. (1979). USFWS = U.S. Fish and Wildlife Service. PAB = palustrine aquatic bed; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub

^d Brinson (1993)

^e Hruby (2004). HGM = Hydrogeomorphic; Dep = Depressional; Riv = Riverine; Slope = Slope

f Seattle MC 25.09.160.A, only applicable to development on publicly or privately owned parcels (Wetlands WSE1-WSE8), Shoreline MC 20.80.320 (Wetlands WSH1-WSH5), Mountlake Terrace MC 16.15.080 (Wetlands WMT1-WMT8), Lynnwood MC 17.10.050 (WLY3, WLY4, and WLY6)

⁹ Seattle MC 25.09.160.C, only applicable to development on publicly or privately owned parcels (Wetlands WSE1-WSE8), Shoreline MC 20.80.330 (Wetlands WSH1-WSH5), Mountlake Terrace MC 16.15.090 (Wetlands WMT1-WMT8), Lynnwood MC 17.10.051 (WLY3, WLY4, and WLY6)

h Wetland extends outside of the field reconnaissance survey area.

b Wetland size was estimated using aerial photographs and visual observations from public vantage points in the field. Acreage represents the entire wetland area

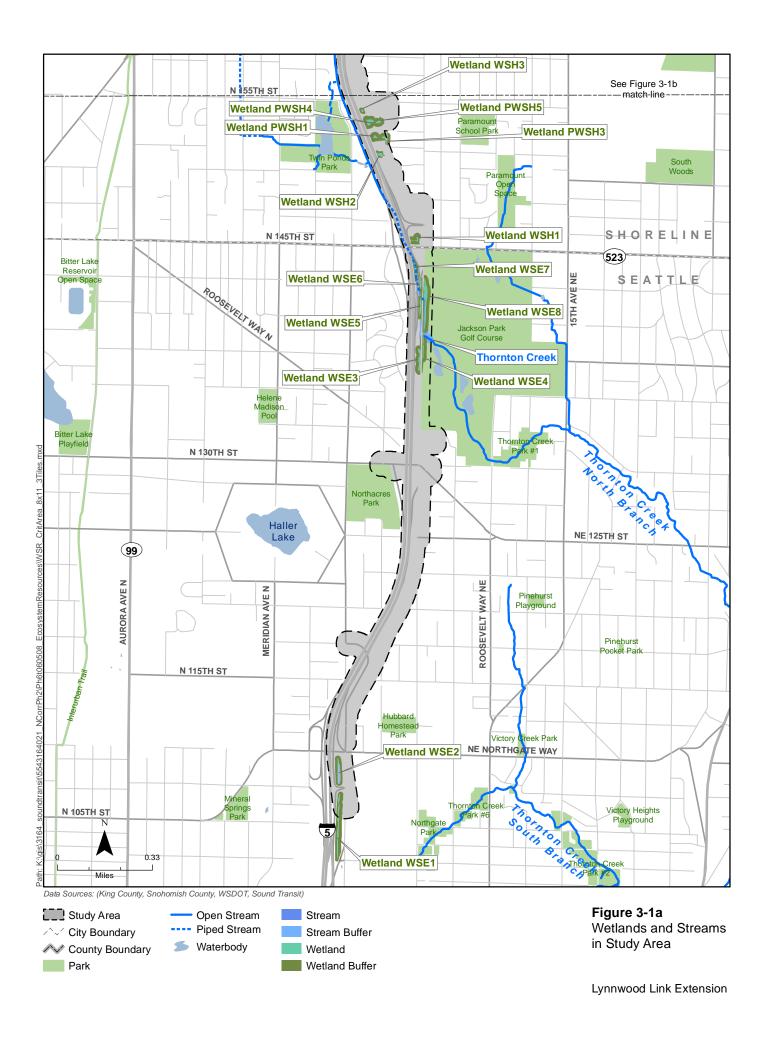
^C Cowardin et al. (1979). USFWS = U.S. Fish and Wildlife Service. PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrubshrub; PUB = palustrine unconsolidated bottom

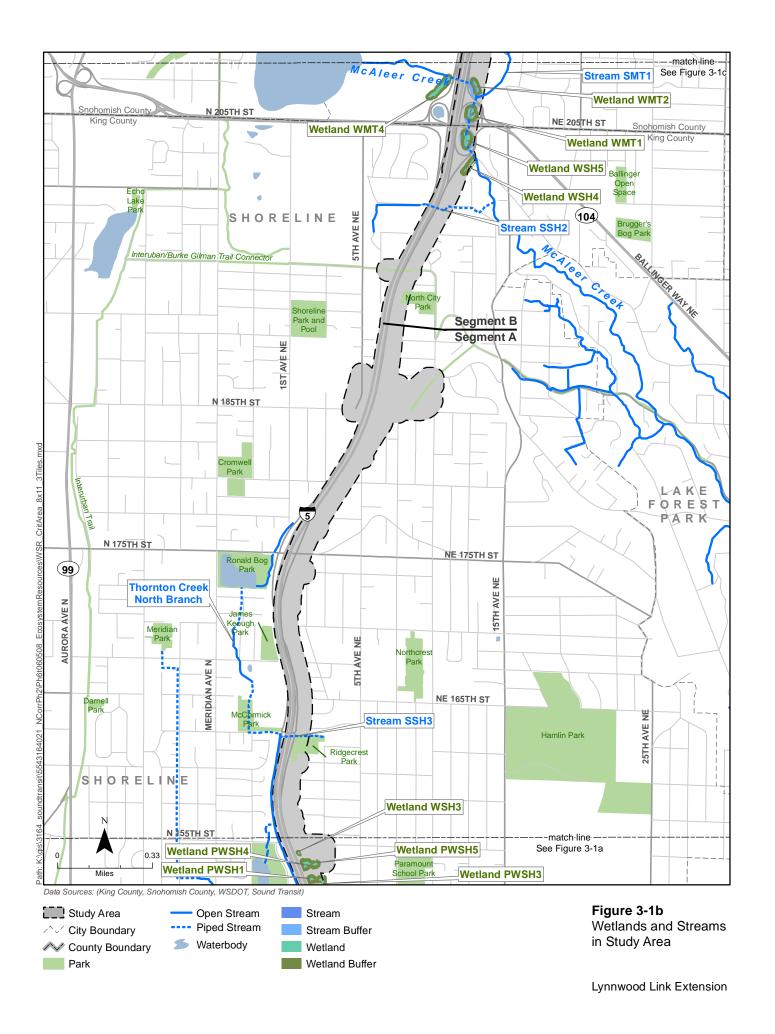
^d Brinson (1993). HGM = Hydrogeomorphic; Dep = Depressional; Riv = Riverine; Slope = Slope

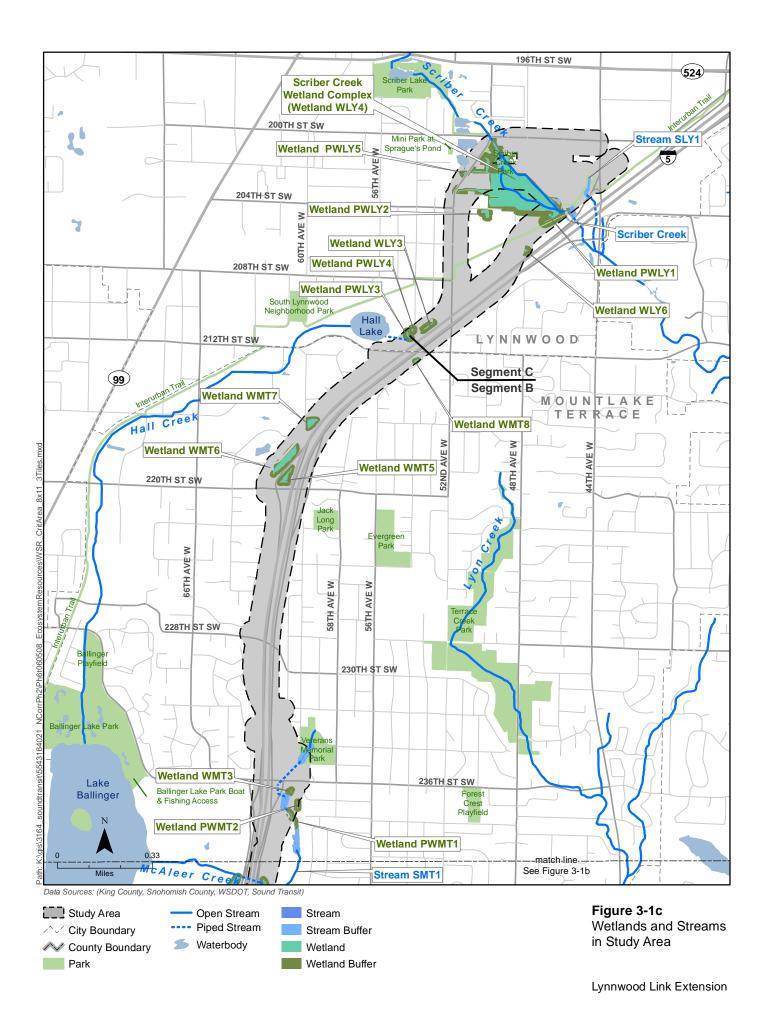
^e Hruby (2004). Sound Transit did not rate wetlands because they are outside of the field reconnaissance area. Ratings are based on ratings provided in existing documentation. If existing documentation did not provide a rating, then it was listed as unknown.

f Shoreline MC 20.80.320 (Wetlands PWSH1-PWSH5), Mountlake Terrace MC 16.15.080 (Wetlands PWMT1-PWMT2), Lynnwood MC 17.10.050 (PWLY1-PWLY5)

⁹ Shoreline MC 20.80.330 (Wetlands PWSH1-PWSH5), Mountlake Terrace MC 16.15.090 (Wetlands PWMT1-PWMT2), Lynnwood MC 17.10.051 (PWLY1-PWLY5)







3.1 Seattle

Wetland WSE1¹

Size: Approximately 0.44 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Riverine

Sample Plots: WSE1-SP1 and WSE1-SP2

Wetland WSE1 is located in a linear depression east of the I-5 off-ramp, west of 1st Avenue NE, and south of NE 107th Street at Northgate, extending south of the field survey and study areas (see Figure 3-1a). This wetland is part of the headwaters of the South Branch of Thornton Creek (City of Seattle 2007). Wetland WSE1 was identified as Wetland A for the Northgate Link Extension (North Link) project. Sample Plot WSE1-SP1 characterizes the wetland and Sample Plot WSE1-SP2 characterizes the adjacent upland.

Wetland hydrology is supported primarily by surface water from a stormwater pond to the north (Wetland WSE2), which is conveyed via a pipe under the I-5 on- and off-ramps. Two additional pipes also convey stormwater runoff from local roadways, although no water was present in these pipes during the field investigation. Saturation at the surface was observed along the perimeter of the wetland with channelized flowing water through the center. The channel is well-defined throughout the length of the wetland continuing south out of the study area. Water from this wetland flows south, then flows in stormwater pipes under NE 100th Street to the east, ultimately into the South Branch of Thornton Creek. Water depth likely varies significantly and can change quickly.

Wetland WSE1 contains a forested community. Vegetation within the wetland is dominated by Pacific willow (*Salix lucida*), Sitka willow (*Salix sitchensis*), red-osier dogwood (*Cornus sericea*), and Himalayan blackberry (*Rubus armeniacus*). Oregon ash (*Fraxinus latifolia*), watercress (*Nasturtium officinale*), and climbing nightshade (*Solanum dulcamara*) were also observed.

Soil was examined to a depth of 26 inches and consists of two layers. The top layer is a 5-inch very dark brown (10YR 2/2) gravelly silt loam. The lower layer is a bluish-gray (10B 6/1) sand. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSE1 consists of roadways and steep vegetated fill slopes. The upper slopes are generally maintained grasses and disturbance-tolerant forbs. The lower slopes consists of western redcedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), pine (*Pinus* spp.), tall Oregon grape (*Mahonia aquifolium*), western swordfern (*Polystichum munitum*), red-osier dogwood,

¹ This wetland is in the city of Seattle within the road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

Indian plum (Oemleria cerasiformis), common hawthorn (Crataegus monogyna), and Himalayan blackberry. Many of these native plants may have been planted.

Wetland WSE1 is classified as palustrine forested under the USFWS system, and riverine under the hydrogeomorphic (HGM) system. Wetland WSE1 is rated Category III according to the City of Seattle (Seattle MC 25.09.160.A) and Washington State Department of Ecology (Ecology). The wetland scored 40 points on Ecology's rating form (16 points for water quality, 16 points for hydrologic functions, and 8 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower levels of habitat function (Seattle MC 25.09.160.C).

Wetland WSE2²

Size: Approximately 0.42 acre

City of Seattle and Ecology Rating: Category IV

USFWS Classification: Palustrine Scrub-Shrub/Palustrine Aquatic Bed

HGM Classification: Depressional

Sample Plots: WSE2-SP1 and WSE2-SP2

Wetland WSE2 is currently a stormwater pond located east of the I-5 on-ramp, west of 1st Avenue NE, between NE 107th Street and North Northgate Way (see Figure 3-1a). Historically, part of this area was wetland prior to the State Route (SR) 5 Northgate Interchange Revision project (WSDOT 1993). The pond was created in wetland, therefore would be regulated as a wetland, not solely as a constructed stormwater feature. This wetland is part of the headwaters of the South Branch of Thornton Creek (City of Seattle 2007). The wetland is located entirely within the field survey area. Sample Plot WSE2-SP1 characterizes the wetland and Sample Plot WSE2-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by stormwater runoff from various pipes around the wetland. Saturation at the surface was observed along the boundary with inundation throughout the majority of the wetland. Water from this wetland flows south through Wetland WSE1, then flows in stormwater pipes under NE 100th Street to the east, ultimately into the South Branch of Thornton Creek. Water depth likely varies significantly and can change rapidly.

Wetland WSE2 contains scrub-shrub and aquatic bed vegetation in the majority of the inundated area with a scrub-shrub fringe near the boundary. Vegetation within the aquatic bed community includes several unidentified species, possibly pondweed (*Potamogeton* sp.). Vegetation within the scrub-shrub community includes young black cottonwood (*Populus balsamifera*), Sitka willow, Pacific willow, red-osier dogwood, birch (*Betula* sp.), small-fruited bulrush (*Scirpus microcarpus*), softstem bulrush (*Scirpus tabernaemontani*), and common rush (*Juncus effusus*). Some broadleaf cattail (*Typha latifolia*) and reed canarygrass (*Phalaris arundinacea*) are also located along the edge of the wetland.

² This wetland is in the city of Seattle within the road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

Soil was examined to a depth of 19 inches and consists of two layers. The top layer is a 16-inch dark greenish gray (10Y 4/1) and very dark gray (10YR 3/1) gravelly sandy loam. The lower layer is a dark gray (N 4/) and very dark gray (10YR 3/1) silt loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSE2 consists of roadways and steep vegetated fill slopes dominated primarily by non-native and invasive species. The majority of the buffer consists of western redcedar, Douglas fir (*Pseudotsuga menziesii*), Pacific madrone (*Arbutus menziesii*), Scotch broom (*Cytisus scoparius*), juniper (*Juniperus* sp.), pine, and Himalayan blackberry. Many of these plants appear to have been planted. The upper slopes are generally maintained grasses and disturbance-tolerant forbs.

Wetland WSE2 is classified as palustrine scrub-shrub/palustrine aquatic bed under the USFWS system, and depressional under the HGM system. Wetland WSE2 is rated a Category IV according to the City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 27 points on Ecology's rating form (6 points for water quality, 10 points for hydrologic functions, and 11 points for habitat functions) (Appendix D). The City of Seattle requires a standard 50-foot buffer for Category IV wetlands (Seattle MC 25.09.160.C).

Wetland WSE3³

Size: Approximately 0.21 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Forested/Palustrine Emergent

HGM Classification: Depressional/Slope Sample Plots: WSE3-SP1 and WSE3-SP2

Wetland WSE3 is located east of I-5 and west of 5th Avenue NE, west of the Jackson Golf Course (see Figure 3-1a). The wetland is located entirely within the field survey area near the I-5 right-of-way fence, ranging from the lower portion of the I-5 fill slope down to the toe. Sample Plot WSE3-SP1 characterizes the wetland and Sample Plot WSE3-SP2 characterizes the adjacent upland.

Wetland hydrology is primarily supported by stormwater runoff from I-5. A concrete-lined ditch, situated along the east side of the wetland and adjacent to 5th Avenue NE, conveys water to Wetland WSE3 and provides an outlet where water is eventually piped under 5th Avenue NE to North Branch of Thornton Creek. Wetland WSE3 likely also has a high groundwater table. Small areas of inundation in micro-depressions were observed, as well as saturation of soils.

Wetland WSE3 contains forested and emergent communities. Vegetation within the forested community includes red alder (*Alnus rubra*) and salmonberry (*Rubus spectabilis*) with some reed

³ This wetland is in the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

canarygrass. One birch and one western redcedar were also present. Vegetation within the emergent community is dominated by reed canarygrass.

Soil was examined to a depth of 18 inches and consists of two layers. The top layer is a 10-inch black (10YR 2/1) silt loam. The lower layer is a very dark gray (10YR 3/1) gravelly sandy loam with grayish brown (10YR 5/2) gravelly sandy loam inclusions that have yellowish brown (10YR 5/8) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The vegetated buffer surrounding Wetland WSE3 consists of a relatively narrow band between the wetland and roads (I-5 and 5th Avenue NE). Maintained grasses and shrubs (primarily Himalayan blackberry) cover most of the buffer, with a forested area to the north. Species include ornamental maples (*Acer* sp.), Himalayan blackberry, Scotch broom, maintained grasses and forbs, western swordfern, and common hawthorn.

Wetland WSE3 is classified as palustrine forested/palustrine emergent under the USFWS system, and is a depressional/slope wetland under the HGM system. Wetland WSE3 is rated a Category III according to the City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 33 points on Ecology's rating form (14 points for water quality, 10 points for hydrologic functions, and 9 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower level of habitat function (Seattle MC 25.09.160.C).

Wetland WSE4⁴

Size: Approximately 0.09 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WSE4-SP1 and WSE4-SP2

Wetland WSE4 is located in a ditch east of 5th Avenue NE and west of the Jackson Park Golf Course (see Figure 3-1a). The wetland is located entirely within the field survey area. Sample Plot WSE4-SP1 characterizes the wetland and Sample Plot WSE4-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by stormwater runoff and a high groundwater table. Saturation and inundation were observed in the wetland, and drainage patterns have formed as well. The wetland drains to the North Branch of Thornton Creek.

Wetland WSE4 contains a forested community. Vegetation within the wetland includes western redcedar, Pacific willow, red alder, salmonberry, water parsley (*Oenanthe sarmentosa*), giant horsetail (*Equisetum telmateia*), and common ladyfern (*Athyrium filix-femina*). Himalayan blackberry and English ivy (*Hedera helix*) occur along the edge.

-

⁴ This wetland is in the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

Soil was examined to a depth of 18 inches and consists of three layers. The top layer is a 5-inch black (10YR 2/1) mucky loam. The middle layer is a dark gray (10YR 4/1) fine sandy loam with brown (10YR 4/3) redoximorphic features. The lower layer is a very dark gray (5Y 3/1) gravelly sandy loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSE4 consists of shrubs immediately adjacent to the wetland, maintained road right-of-way further to the west, a golf course to the east, and trees and shrubs to the north and south. The buffer includes salmonberry, Himalayan blackberry, laurel, and western redcedar.

Wetland WSE4 is classified as palustrine forested under the USFWS system and depressional under the HGM system. Wetland WSE4 is rated a Category III according to the City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 38 points on Ecology's rating form (14 points for water quality, 16 points for hydrologic functions, and 8 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower level of habitat function (Seattle MC 25.09.160.C).

Wetland WSE55

Size: Approximately 0.16 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WSE5-SP1 and WSE5-SP2

Wetland WSE5 is located east of I-5 and west of 5th Avenue NE, west of the Jackson Golf Course (see Figure 3-1a). The wetland crosses the I-5 right-of-way fence, ranging from the lower portion of the I-5 fill slope down to the toe. Wetland WSE5 is located entirely within the field survey area. Sample Plot WSE5-SP1 characterizes the wetland and Sample Plot WSE5-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high groundwater table and precipitation. Saturation and inundation were observed in the wetland. No inlet was observed. The northern portion of the wetland drains to Thornton Creek.

Wetland WSE5 contains a forested community. Vegetation within the wetland includes red alder, giant horsetail, common ladyfern, reed canarygrass, common rush, small-fruited bulrush, climbing nightshade, bitter dock (*Rumex obtusifolius*), and Himalayan blackberry. A ponded area near the road contained American speedwell (*Veronica americana*), broadleaf cattail, creeping buttercup (*Ranunculus repens*), and twoheaded water-starwort (*Callitriche heterophylla*).

⁵ This wetland is in the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

Soil was examined to a depth of 19 inches and consists of one layer. The soil is a black (10YR 2/1) gravelly sandy loam with cobbles. The soils have a high concentration of organics and partially decomposed debris throughout the profile. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer is narrow, composed of vegetated fill slopes for I-5 and 5th Avenue NE. Species include red alder, Himalayan blackberry, English ivy, English holly (*Ilex aquifolium*), Douglas fir, and maintained disturbance-tolerant grasses and forbs. There is no functioning buffer to the east (roadway).

Wetland WSE5 is classified as palustrine forested under the USFWS system and depressional under the HGM system. Wetland WSE5 is rated a Category III according to the City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 34 points on Ecology's rating form (14 points for water quality, 10 points for hydrologic functions, and 10 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower level of habitat function (Seattle MC 25.09.160.C).

Wetland WSE66

Size: Approximately 0.06 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Scrub-Shrub

HGM Classification: Depressional

Sample Plots: WSE6-SP1

Wetland WSE6 is a shallow, linear depression located east of the northbound I-5 off-ramp for NE 145th Street and west of 5th Avenue NE, west of the Jackson Golf Course (see Figure 3-1a). The wetland is located entirely within the field survey area. Sample Plot WSE6-SP1 characterizes the wetland.

Wetland hydrology is supported by precipitation, stormwater runoff, and a high groundwater table. There are no inlets or outlets to Wetland WSE6. Small pockets of inundation in micro-depressions and saturated soils were observed.

Wetland WSE6 contains a scrub-shrub community. Vegetation within the wetland is dominated by rose spirea (*Spiraea douglasii*) and reed canarygrass. Common ladyfern, Himalayan blackberry, and one birch are also present.

Soil was examined to a depth of 18 inches and consists of two layers. The top layer is a 9-inch black (10YR 2/1) gravelly silt loam. The lower layer is a dark grayish brown (10YR 4/2) gravelly sandy loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

-

⁶ This wetland is in the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

The buffer surrounding Wetland WSE6 consists primarily of maintained disturbance-tolerant species of grasses and forbs within the I-5 right-of-way along with Himalayan blackberry and rose spirea. A small area to the south contains red alder, Douglas fir, and Himalayan blackberry. The buffers are narrow and composed of vegetation on the shoulders of I-5 and 5th Avenue NE.

Wetland WSE6 is classified as palustrine forested under the USFWS system and riverine under the HGM system. Wetland WSE6 is rated a Category III according to the City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 37 points on Ecology's rating form (12 points for water quality, 18 points for hydrologic functions, and 7 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower level of habitat function (Seattle MC 25.09.160.C).

Wetland WSE7⁷

Size: Approximately 0.14 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Scrub-Shrub/Palustrine Emergent

HGM Classification: Depressional

Sample Plots: WSE7-SP1 and WSE7-SP2

Wetland WSE7 is a shallow, linear depression located east of the I-5 mainline and west of a transit off-ramp, just south of NE 145th Street (see Figure 3-1a). The wetland is located entirely within the field survey area. Sample Plot WSE7-SP1 characterizes the wetland and Sample Plot WSE7-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by precipitation, stormwater runoff, and a high groundwater table. There are no inlets to Wetland WSE7. A catch basin is located at the south end of the wetland providing an outlet. Areas of inundation and saturated soils were observed in the wetland.

Wetland WSE7 contains scrub-shrub and emergent communities. Vegetation within the scrub-shrub community is dominated by Himalayan blackberry with some broadleaf cattail intermixed. Vegetation within the emergent community is mostly broadleaf cattail, small-fruited bulrush, common rush, and common duckweed (*Lemna minor*). Some maintained grasses and forbs, along with reed canarygrass, are also present in the emergent community.

Soil was examined to a depth of 20 inches and consists of two layers. The top layer is a 6-inch black (10YR 2/1) silt loam. The lower layer is a black (10YR 2/1) gravelly sandy loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSE7 is mowed right-of-way dominated by disturbance-tolerant grasses and forbs. Some Himalayan blackberry is also growing within the buffer.

⁷ This wetland is in the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

Wetland WSE7 is classified as palustrine scrub-shrub/palustrine emergent under the USFWS system and depressional under the HGM system (Brinson 1993). Wetland WSE7 is rated a Category III according to the City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 37 points on Ecology's rating form (18 points for water quality, 10 points for hydrologic functions, and 9 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower level of habitat function (Seattle MC 25.09.160.C).

Wetland WSE8⁸

Size: Approximately 0.63 acre

City of Seattle and Ecology Rating: Category III

USFWS Classification: Palustrine Forested/Palustrine Scrub-Shrub

HGM Classification: Depressional

Sample Plots: WSE8-SP1

Wetland WSE8 is located east of 5th Avenue NE and west of the Jackson Park Golf Course, extending out of the field survey area to the east (see Figure 3-1a). Sample Plot WSE8-SP1 characterizes the wetland.

Wetland hydrology is supported by stormwater runoff and a high groundwater table. Saturation and inundation were observed in the wetland. Surface water flows south in a ditch within the wetland. No inlet was apparent, but the wetland drains to Thornton Creek. Flowing water, inundation, and saturated soils were observed during the site investigation.

Wetland WSE8 contains forested and scrub-shrub communities. Vegetation within the forested community is dominated by young red alder, Sitka willow, Pacific willow, salmonberry, and rose spirea. Vegetation within the scrub-shrub community is dominated by salmonberry, Himalayan blackberry, and rose spirea. Other species observed include common ladyfern, creeping buttercup, giant horsetail, and climbing nightshade.

Soil was examined to a depth of 22 inches and consists of three layers. The top layer is a 10-inch black (10YR 2/1) very mucky loam. The middle layer is a very dark gray (10YR 3/1) very mucky loam from 10 to 20 inches. The lower layer is a very dark greenish gray (10Y 3/1) gravelly sand. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSE8 is dominated by disturbance-tolerant species of grasses and forbs to the west within the maintained roadside and maintained grasses to the west (golf course). Unmaintained areas of the buffer consist of red alder, Himalayan blackberry, English holly, English ivy, and western swordfern.

Wetland WSE8 is classified as palustrine forested/palustrine scrub-shrub under the USFWS system, and depressional under the HGM system. Wetland WSE8 is rated a Category III according to the

⁸ Portions of this wetland are in the city of Seattle within road right-of-way (not on a publicly or privately owned parcel) and may not be subject to the City of Seattle Critical Areas Ordinance (Seattle Municipal Code 25.09).

City of Seattle (Seattle MC 25.09.160.A) and Ecology. The wetland scored 41 points on Ecology's rating form (18 points for water quality, 10 points for hydrologic functions, and 13 points for habitat functions) (Appendix D). The City of Seattle requires a standard 60-foot buffer for Category III wetlands with lower level of habitat function (Seattle MC 25.09.160.C).

3.2 Shoreline

Wetland WSH1

Size: Approximately 0.06 acre

City of Shoreline Rating: Type III

Ecology Rating: Category III

USFWS Classification: Palustrine Forested/Palustrine Scrub-shrub/Palustrine Emergent

HGM Classification: Depressional/Slope Sample Plots: WSH1-SP1 and WSH1-SP2

Wetland WSH1 is located east of I-5, north of NE 145th Street, and west of 5th Avenue NE, in a maintained area of the I-5 right-of-way (see Figure 3-1a). The western portion is a ditched swale associated with I-5 stormwater conveyance and the eastern portion is a grassy slope. This wetland is located entirely within the field survey area. Sample Plot WSH1-SP1 characterizes the wetland and Sample Plot WSH1-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high groundwater table and stormwater runoff. The sloped portion of the wetland was saturated with drainage patterns during the site investigation, while the ditched portion was inundated with flowing water. The outlet of Wetland WSH1 is a catch basin located at the southeastern corner of the wetland. Stormwater flows through the ditched portion of the wetland, along the southern boundary.

Wetland WSH1 contains forested, scrub-shrub, and emergent communities. The forested community is dominated by one large black cottonwood and some red alders. The western portion of the wetland is a shrub community dominated by black cottonwood saplings. The emergent community is dominated by maintained grasses and forbs, including common rush, colonial bentgrass (*Agrostis capillaris*), red fescue (*Festuca rubra*), tall fescue (*Schedonorus phoenix*), small-fruited bulrush, giant horsetail, water horsetail (*Equisetum fluviatile*), creeping buttercup, American speedwell, and other rush and sedge species (*Juncus* sp. and *Carex* sp.). Common cattail and Himalayan blackberry are located around the outlet.

Soil was examined to a depth of 18 inches and consists of two layers. The top layer is an 8-inch very dark gray (10YR 3/1) silt loam. The lower layer is a dark gray (2.5Y 4/1) gravelly sandy loam with light olive brown (2.5Y 5/6) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSH1 consists primarily of maintained grass, especially to the northwest, but also includes Himalayan blackberry and giant horsetail. Himalayan blackberry is dominant to the east and overhangs the wetland boundary. Few trees are present in the buffer.

Wetland WSH1 is classified as palustrine forested, palustrine scrub-shrub, and palustrine emergent under the USFWS system, and depressional/slope under the HGM system. According to the City of Shoreline, Wetland WSH1 is rated a Type III (Shoreline MC 20.80.320). According to Ecology's wetland rating system, the wetland is rated a Category III based on its score. The wetland scored 34 points on Ecology's rating form (10 points for water quality, 12 points for hydrologic functions, and 12 points for habitat functions) (Appendix D). The City of Shoreline requires a standard 65-foot buffer for Type III (Shoreline MC 20.80.330).

Wetland WSH2

Size: Approximately 0.09 acre

City of Shoreline Rating: Type IV

Ecology Rating: Category IV

USFWS Classification: Palustrine Emergent

HGM Classification: Depressional/Slope

Sample Plots: WSH2-SP1 and WSH2-SP2

Wetland WSH2 is located on a gentle slope and shallow depression east of I-5, west of the highway sound wall and 3rd Avenue NE, and south of NE 152nd Street, extending east of the field survey area (see Figure 3-1a). Sample Plot WSH2-SP1 characterizes the wetland and Sample Plot WSH2-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high ground water table and surface water from outside of the field survey area to the east, beyond the sound wall. The wetland was saturated and inundated during the site investigation. Drainage patterns were visible. Water flows to the west into a ditch along I-5.

Wetland WSH2 contains an emergent community. Vegetation within the wetland includes grasses and forbs, as well as common rush, small-fruited bulrush, reed canarygrass, and creeping buttercup. A large weeping willow (*Salix babylonica*) overhangs the sound wall.

Soil was examined to a depth of 20 inches and consists of two layers. The top layer is an 11-inch very dark brown (10YR 2/2) gravelly sandy loam with very dark brown (7.5YR 2.5/3) and dark reddish brown (5YR 3/4) redoximorphic features. The lower layer is a very dark gray (2.5Y 3/1) compacted silt loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSH2 consists primarily of maintained grasses and forbs in the I-5 right-of-way. There are some trees, including western redcedar to the east.

Wetland WSH2 is classified as palustrine emergent under the USFWS system, and depressional/slope under the HGM system. According to the City of Shoreline, Wetland WSH2 is

rated a Type IV (Shoreline MC 20.80.320). According to Ecology's wetland rating system, the wetland is rated a Category IV based on its score. The wetland scored 27 points on Ecology's rating form (12 points for water quality, 10 points for hydrologic functions, and 5 points for habitat functions) (Appendix D). The City of Shoreline requires a standard 35-foot buffer for Type IV (Shoreline MC 20.80.330).

Wetland WSH3

Size: Approximately 0.03 acre

City of Shoreline Rating: Type IV

Ecology Rating: Category IV

USFWS Classification: Palustrine Emergent

HGM Classification: Slope

Sample Plots: WSH3-SP1 and WSH3-SP2

Wetland WSH3 is located east of I-5, just south of NE 155th Street, and west of the fire station (see Figure 3-1a). This wetland generally slopes east to west, located entirely within the field survey area. Sample Plot WSH3-SP1 characterizes the wetland and Sample Plot WSH3-SP2 characterizes the adjacent upland.

Wetland hydrology is primarily supported by precipitation. Surface runoff from the fire station parking lot may also contribute. The wetland drains west to a ditch within the I-5 right-of-way. Inundation and saturated soils were observed during the field investigation.

Wetland WSH3 contains an emergent community. Vegetation within the wetland is dominated by reed canarygrass, but also includes one western redcedar, some Himalayan blackberry, and giant horsetail.

Soil was examined to a depth of 19 inches and consists of two layers. The top layer is a 5-inch dark grayish brown (10YR 4/2) gravelly sandy loam. The lower layer is a dark grayish brown (10YR 4/2) gravelly sandy loam with cobbles with dark brown (7.5YR 3/4) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSH3 consists of a narrow slope dominated by reed canarygrass to the north and south. The buffer to the west is the I-5 fill slope, dominated by Himalayan blackberry, Douglas firs, and maintained grasses. To the east there is a narrow row of landscaping trees along the edge of the parking lot of the fire station.

Wetland WSH3 is classified as palustrine emergent under the USFWS system, and slope under the HGM system. According to the City of Shoreline, Wetland WSH3 is rated a Type IV (Shoreline MC 20.80.320). According to Ecology's wetland rating system, the wetland is rated a Category IV based on its score. The wetland scored 29 points on Ecology's rating form (16 points for water quality, 8 points for hydrologic functions, and 5 points for habitat functions) (Appendix D). The City of Shoreline requires a standard 35-foot buffer for Type IV wetlands (Shoreline MC 20.80.330).

Wetland WSH4

Size: Approximately 0.11 acre

City of Shoreline Rating: Type III

Ecology Rating: Category III

USFWS Classification: Palustrine Forested/Palustrine Emergent

HGM Classification: Depressional/Slope Sample Plots: WSH4-SP1 and WSH4-SP2

Wetland WSH4 is located east of the I-5 off-ramp to SR 104 and west of Forest Park Drive NE, extending northeast of the field survey and study areas (see Figure 3-1b). This linear wetland is near the I-5 right-of-way fence, ranging from the lower portion of the I-5 fill slope down to the toe. Sample Plot WSH4-SP1 characterizes the wetland and Sample Plot WSH4-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high ground water table and seeps. The seeps are located along the northwest boundary of the wetland. No specific inlet was observed in the wetland. Water flows to the northeast in a swale at the edge of the I-5 right-of-way, draining to McAleer Creek. Inundation and saturated soils were observed during the field investigation.

Wetland WSH4 contains forested and emergent communities. Vegetation within the forested community includes red alder, salmonberry, reed canarygrass, common ladyfern, fowl mannagrass (*Glyceria striata*), creeping buttercup, Himalayan blackberry, and giant horsetail. The vegetation within the emergent community includes giant horsetail, common ladyfern, Himalayan blackberry, American speedwell, common duckweed, and twoheaded water-starwort.

Soil was examined to a depth of 20 inches and consists of two layers. The top layer is a 4-inch black (10YR 2/1) silt loam with organics. The lower layer is a very dark brown (10YR 2/2) sand. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer on the slope, north and west of Wetland WSH4 consists of Douglas fir, Himalayan blackberry, and Indian plum. The buffer consists of maintained residential yards, roads, and driveways to the south and east.

Wetland WSH4 is classified as palustrine forested and palustrine emergent under the USFWS system, and depressional/slope under the HGM system. According to the City of Shoreline, Wetland WSH4 is rated a Type III (Shoreline MC 20.80.320). According to Ecology's wetland rating system, the wetland is rated a Category III based on its score. The wetland scored 34 points on Ecology's rating form (14 points for water quality, 10 points for hydrologic functions, and 10 points for habitat functions) (Appendix D). The City of Shoreline requires a standard 65-foot buffer for Type III wetlands (Shoreline MC 20.80.330).

Wetland WSH5

Size: Approximately 0.37 acre

City of Shoreline Rating: Type III

Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WSH5-SP1 and WSH5-SP2

Wetland WSH5 is in a deep depression associated with McAleer Creek, surrounded by roadway fill slopes. It is located entirely within the field survey area east of I-5 inside the northbound on-ramp cloverleaf south of SR 104 (see Figure 3-1b). Sample Plot WSH5-SP1 characterizes the wetland and Sample Plot WSH5-SP2 characterizes the adjacent upland. .

Wetland hydrology is supported by McAleer Creek, stormwater drainages, and a shallow groundwater table. Seeps and drainage patterns were also observed along the slopes of the wetland. The primary inlet and outlet are large culverts associated with McAleer Creek. Both the wetland and stream drain to the south.

Wetland WSH5 contains a forested community. Vegetation within the wetland includes red alder, black cottonwood, birch, rose spirea, Scouler's willow (*Salix scouleriana*), salmonberry, reed canarygrass, small-fruited bulrush, giant horsetail, creeping buttercup, common ladyfern, and fringed willowherb (*Epilobium ciliatum*).

Soil was examined to a depth of 19 inches and consists of two layers. The top layer is a 10-inch very dark grayish brown (10YR 3/2) sandy loam. The lower layer is a very dark gray (2.5Y 3/1) gravelly sand with dark yellowish brown (10YR 3/6) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WSH5 consists of coniferous and deciduous trees. Species include Douglas fir, black cottonwood, red alder, western redcedar, and ornamental cherry (*Prunus* sp.) Understory vegetation consists of Himalayan blackberry, rose spirea, Indian plum, English holly, trailing blackberry (*Rubus ursinus*), western swordfern, giant horsetail, and English ivy. Additionally, a narrow band of maintained herbaceous vegetation is located near the roadways.

Wetland WSH5 is classified as palustrine forested under the USFWS system, and depressional under the HGM system. According to the City of Shoreline, Wetland WSH5 is rated a Type III (Shoreline MC 20.80.320). According to Ecology's wetland rating system, the wetland is rated a Category III based on its score. The wetland scored 30 points on Ecology's rating form (12 points for water quality, 6 points for hydrologic functions, and 12 points for habitat functions) (Appendix D). The City of Shoreline requires a standard 65-foot buffer for Type III wetlands (Shoreline MC 20.80.330).

3.3 Mountlake Terrace

Wetland WMT1

Size: Approximately 0.29 acre

City of Mountlake Terrace and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WMT1-SP1 and WMT1-SP2

Wetland WMT1 is in a deep depression associated with McAleer Creek surrounded by roadway fill slopes. It is located entirely within the field survey area east of I-5 inside of the cloverleaf northbound off-ramp, north of SR 104 (see Figure 3-1b). Sample Plot WMT1-SP1 characterizes the wetland and Sample Plot WMT1-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by McAleer Creek, stormwater runoff, shallow groundwater table, and seeps. Saturation at the surface was commonly observed throughout the wetland, especially near the base of slopes. The wetland also contains inundated micro-depressions and drainage channels. Large amounts of stormwater were observed flowing from a pipe southwest of the wetland, down a rock-lined channel to Wetland WMT1 and McAleer Creek. The primary inlet and outlet are large culverts associated with McAleer Creek. The stream channel is well-defined throughout most of the wetland. The wetland drains to McAleer Creek, which flows to the south (to Wetland SH5).

Wetland WMT1 contains a forested community dominated by red alder, black cottonwood, salmonberry, Himalayan blackberry, twinberry honeysuckle (*Lonicera involucrata*), rose spirea, common ladyfern, giant horsetail, and creeping buttercup. Other species observed include birch, western hemlock (*Tsuga heterophylla*), English holly, Indian plum, pale yellow iris (*Iris pseudacorus*), reed canarygrass, largeleaf avens (*Geum macrophyllum*), fringed willowherb, climbing nightshade, and western swordfern.

Soil was examined to a depth of 18 inches and consists of three layers. The top layer is a 5-inch very dark grayish brown (10YR 3/2) silt loam. The middle layer is a 4-inch dark gray (10YR 4/1) gravelly sandy loam with dark yellowish brown (10YR 4/6) redoximorphic features. The lower layer is a dark gray (10YR 4/1) very sandy loam with dark yellowish brown (10YR 4/6) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT1 consists of coniferous and deciduous trees. Species include Douglas fir, black cottonwood, red alder, birch, and bitter cherry (*Prunus emarginata*). Understory vegetation consists of Himalayan blackberry, rose spirea, Indian plum, English holly, western swordfern, and giant horsetail. Additionally, a narrow band of maintained herbaceous vegetation is located near the roadways.

Wetland WMT1 is classified as palustrine forested under the USFWS system, and depressional under the HGM system. Wetland WMT1 is rated a Category III according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 30 points on Ecology's rating form (12 points for water quality, 6 points for hydrologic functions, and 12 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 65-foot buffer for Category III (Mountlake Terrace MC 16.15.090).

Wetland WMT2

Size: Approximately 0.17 acre

City of Mountlake Terrace and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Riverine/Slope

Sample Plots: WMT2-SP1 and WMT2-SP2

Wetland WMT2 is located east of I-5, northeast of the northbound I-5 on-ramp from SR 104 and southeast of Gateway Place (see Figure 3-1b). This wetland is on a steep slope extending down to McAleer Creek, located entirely within the field survey area. Sample Plot WMT2-SP1 characterizes the wetland and Sample Plot WMT2-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by McAleer Creek and seeps. Areas of saturation and inundation were observed in the wetland. The stream channel is well-defined throughout most of the wetland. McAleer Creek flows from the northwest (from the Nile Shrine Golf Course west of I-5) to the south in a pipe under the northbound I-5 on-ramp.

Wetland WMT2 contains a forested community. Vegetation on the slope consists of black cottonwood, red alder, Himalayan blackberry, trailing blackberry, and scouring rush (*Equisetum hyemale*). Vegetation in and adjacent to McAleer Creek includes black cottonwood, salmonberry, Himalayan blackberry, pale yellow iris, creeping buttercup, reed canarygrass, and giant horsetail.

Soil was examined to a depth of 12 inches and consists of two layers. The top layer is a 6-inch very dark grayish brown (10YR 3/2) sandy loam. The lower layer is a dark grayish brown (2.5Y 4/2) gravelly sandy loam. There is an extremely compacted restrictive layer at 12 inches. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT2 consists generally of steep vegetated slopes. Species include Douglas fir, red alder, bitter cherry, Himalayan blackberry, trailing blackberry, and western swordfern.

Wetland WMT2 is classified as palustrine forested under the USFWS system, and riverine/slope under the HGM system. Wetland WMT2 is rated a Category III according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 43 points on Ecology's rating form (16 points for water quality, 16 points for hydrologic functions, and 11 points

for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 65-foot buffer for Category III (Mountlake Terrace MC 16.15.090).

Wetland WMT3

Size: Approximately 0.01 acre

City of Mountlake Terrace and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WMT3-SP1 and WMT3-SP2

Wetland WMT3 is in a small, shallow depression east of I-5, east of the northbound I-5 off-ramp, west of 237th Street SW, and south of 236th Street SW (see Figure 3-1c). The wetland is located entirely within the field survey area. Sample Plot WMT3-SP1 characterizes the wetland and Sample Plot WMT3-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high ground water table. Soil saturation was observed at 13 inches below the surface and water-stained leaves were present. There may also be some periods of inundation. It is a closed depression and therefore has no inlet or outlet.

Wetland WMT3 has a forested community consisting of red alder, western redcedar, salmonberry, common ladyfern, western skunk cabbage (*Lysichiton americanus*), and giant horsetail. A single bitter cherry tree, a single western hemlock tree, western swordfern, and salal (*Gaultheria shallon*) are growing in hummocks.

Soil was examined to a depth of 18 inches and consists of two layers. The top layer is an 11-inch very dark gray (10YR 3/1) silt loam. The lower layer is a black (10YR 2/1) silt loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT3 consists of a mixed forest. Species include bitter cherry, red alder, western redcedar, Douglas fir on the upper slopes, western hemlock, Himalayan blackberry, Indian plum, salmonberry, cherry laurel (*Prunus laurocerasus*), red elderberry (*Sambucus racemosa*), giant horsetail, and English ivy.

Wetland WMT3 is classified as palustrine forested under the USFWS system, and is depressional under the HGM system. Wetland WMT3 is rated a Category III according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 39 points on Ecology's rating form (16 points for water quality, 14 points for hydrologic functions, and 9 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 65-foot buffer for Category III (Mountlake Terrace MC 16.15.090).

Size: Approximately 0.43 acre

City of Mountlake Terrace and Ecology Rating: Category III

USFWS Classification: Palustrine Forested/Palustrine Scrub-shrub

HGM Classification: Depressional/Slope Sample Plots: WMT4-SP1 and WMT4-SP2

Wetland WMT4 is located in a depression west of I-5 and west of the southbound I-5 off-ramp to SR 104. The wetland extends west of the study area onto the Nile Shrine Golf Course and is approximately 0.43 acre (see Figure 3-1b). Sample Plot WMT4-SP1 characterizes the wetland and Sample Plot WMT4-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high groundwater table, and potentially stormwater runoff from I-5. The wetland drains north to McAleer Creek. Drainage patterns were observed and water was flowing during the site investigation. The wetland is seasonally inundated and saturated.

Wetland WMT4 contains forested and scrub-shrub communities. Vegetation within the wetland is dominated by red alder, salmonberry, common ladyfern, and Himalayan blackberry. Other species present include twinberry honeysuckle, reed canarygrass, western swordfern, giant horsetail, water horsetail, and false lily of the valley (*Maianthemum dilatatum*).

Soil was examined to a depth of 18 inches and consists of three layers. The top layer is a 5-inch very dark brown (10YR 2/2) loam. The middle layer is an 11-inch very dark gray (10YR 3/1) gravelly sand. The lower layer is a very dark gray (5Y 3/1) and dark greenish gray (10GY 4/1) very sandy loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT4 consists of narrow areas of forest to the east and west of the wetland. A large retaining wall disrupts the buffer to the east and a golf course is located to the west. The golf course beyond the forested strip to the west is maintained grasses. The forested buffer consists of red alder, western redcedar, salmonberry, Indian plum, Himalayan blackberry, English holly, English ivy, and giant horsetail.

Wetland WMT4 is classified as palustrine forested under USFWS system, and depressional under the HGM system. Wetland WMT4 is rated a Category III according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 34 points on Ecology's rating form (16 points for water quality, 6 points for hydrologic functions, and 12 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 65-foot buffer for Category III (Mountlake Terrace MC 16.15.090).

Size: Approximately 0.36 acre

City of Mountlake Terrace and Ecology Rating: Category III

USFWS Classification: Palustrine Forested/Palustrine Emergent

HGM Classification: Depressional

Sample Plots: WMT5-SP1 and WMT5-SP2

Wetland WMT5 is located in a shallow depression west of I-5, east of the southbound I-5 off-ramp to 220th Street SW, and north of 220th Street SW (see Figure 3-1c). The wetland is located entirely within the field survey area. Sample Plot WMT5-SP1 characterizes the wetland and Sample Plot WMT5-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high groundwater table and stormwater runoff. Saturation at the surface was observed along the perimeter of the wetland with pockets of inundation through the center of the wetland. The wetland drains to a catch basin located in the northern portion of the wetland.

Wetland WMT5 contains a forested community and an emergent community. The forested community is dominated by red alder, black cottonwood, quaking aspen (*Populus tremuloides*), twinberry honeysuckle, red-osier dogwood, and Sitka willow; whereas, the emergent community is dominated by reed canarygrass. Other species observed include birch, climbing nightshade, common rush, and fringed willowherb.

Soil was examined to a depth of 18 inches and consists of three layers. The top layer is a 4-inch very dark grayish brown (10YR 3/2) sandy loam. The middle layer is a 3-inch dark greenish gray (10Y 4/1) clay loam. The lower layer is a greenish gray (10Y 5/1) gravelly sandy loam. The two lower layers are very compacted. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT5 consists of steep vegetated slopes and maintained road shoulders. The upper slopes, near the roadways, are generally maintained grasses and disturbance-tolerant forbs. The lower portion of the buffer consists of red alder, Douglas fir, black cottonwood, Himalayan blackberry, snowberry (*Symphoricarpos*), twinberry honeysuckle, western redcedar, and forsythia (*Forsythia suspensa*).

Wetland WMT5 is classified as palustrine forested under the USFWS system, and depressional under the HGM system. Wetland WMT5 is rated a Category III according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 30 points on Ecology's rating form (14 points for water quality, 7 points for hydrologic functions, and 9 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 65-foot buffer for Category III (Mountlake Terrace MC 16.15.090).

Size: Approximately 1.24 acres

City of Mountlake Terrace and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WMT6-SP1 and WMT6-SP2

Wetland WMT6 is located on a slope and depression northeast of Mountlake Terrace City Hall. It is located west of I-5, southeast of 60th Avenue West, and west of the southbound I-5 off-ramp to 220th Street SW (see Figure 3-1c). The wetland is located entirely within the field survey area. Sample Plot WMT6-SP1 characterizes the wetland and Sample Plot WMT6-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by groundwater. Pockets of saturation and inundation were irregularly located throughout the wetland. The wetland has hummocks and micro-depressions as well as a slope. The groundwater was expressing in the lower portions of the slope and draining to a catch basin in a ditch northwest of the wetland.

Wetland WMT6 contains a forested community. Vegetation within the wetland includes red alder, Pacific willow, black cottonwood, salmonberry, Himalayan blackberry, red-osier dogwood, giant horsetail, small-fruited bulrush, western skunk cabbage, spreading woodfern (*Dryopteris expansa*), and common ladyfern. Creeping buttercup, watercress, and American speedwell are dominant outside the right-of-way fence along 60th Avenue West.

Soil was examined to a depth of 18 inches and consists of two layers. The top layer is a 7-inch black (10YR 2/1) silt loam. The lower layer is a greenish gray (10G 5/1) gravelly sandy loam. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT6 consists of forested areas and maintained lawn. The buffer to the southeast on the I-5 prism slope consists of Douglas fir, big-leaf maple, Himalayan blackberry, Indian plum, and giant horsetail. The buffer near City Hall and I-5 are generally maintained grasses and disturbance-tolerant forbs with some landscaped trees.

Wetland WMT6 is classified as palustrine forested under the USFWS system, and depressional under HGM system. Wetland WMT6 is rated a Category III according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 30 points on Ecology's rating form (14 points for water quality, 7 points for hydrologic functions, and 9 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 65-foot buffer for Category III (Mountlake Terrace MC 16.15.090).

Size: Approximately 0.41 acre

City of Mountlake Terrace and Ecology Rating: Category IV

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WMT7-SP1 and WMT7-SP2

Wetland WMT7 is a relatively flat depression west of the I-5 fill slope, east of 60th Avenue West, and northeast of Wetland WMT6 (see Figure 3-1c). The wetland extends outside of the field survey and study areas. Sample Plot WMT7-SP1 characterizes the wetland and Sample Plot WMT7-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high groundwater table. The predominant hydrologic regime is saturated soils and the outlet of the wetland is located on the west side of the wetland outside of the field survey and study areas. It appears to drain into a culvert that flows to the northwest under 60th Avenue West.

Wetland WMT7 contains a forested community. Vegetation within the wetland includes red alder, Sitka willow, Pacific willow, salmonberry, Himalayan blackberry, and twinberry honeysuckle.

Soil was examined to a depth of 26 inches and consists of three layers. The top layer is a 10-inch black (10YR 2/1) organic layer. The middle layer is a 7-inch very dark brown (10YR 2/2) organic layer. The lower layer is a very dark gray (10YR 3/1) silt loam with organic matter inclusions. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer to the north, west, and south of Wetland WMT7 consists of red alder, western redcedar, and salmonberry. There is a narrow forested area on the steep slope of the I-5 road prism to the east that consists of big-leaf maple, European mountain ash (*Sorbus aucuparia*), Douglas fir, Himalayan blackberry, Indian plum, and western swordfern. A narrow band of generally maintained grasses and disturbance-tolerant forbs is located immediately adjacent to I-5.

Wetland WMT7 is classified as palustrine forested under the USFWS system, and depressional under the HGM system (Brinson 1993). Wetland WMT7 is rated a Category IV according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 27 points on Ecology's rating form (12 points for water quality, 7 points for hydrologic functions, and 8 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 50-foot buffer for Category (Mountlake Terrace MC 16.15.090).

Size: Approximately 0.01 acre

City of Mountlake Terrace and Ecology Rating: Category IV

USFWS Classification: Palustrine Forested

HGM Classification: Slope

Sample Plots: WMT8-SP1 and WMT8-SP2

Wetland WMT8 is located in a swale southeast of I-5, northwest of an apartment complex, and south of 212th Street SW (see Figure 3-1c). The wetland is located entirely within the field survey area. Sample Plot WMT8-SP1 characterizes the wetland and Sample Plot WMT8-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by a high groundwater table. No inlet or outlet was observed in the wetland. Water was flowing slowly from the south to the north during the site investigation. Inundation, saturation, water-stained leaves, and algae were all observed in the wetland. The water likely goes subsurface and drains to a nearby stormwater drainage.

Wetland WMT8 contains a forested community. Vegetation within the wetland includes salmonberry, common ladyfern, western skunk cabbage, Himalayan blackberry, piggy-back-plant (*Tolmiea menziesii*), giant horsetail, and English ivy. Red alder is growing along the edge, overhanging the wetland.

Soil was examined to a depth of 19 inches and consists of three layers. The top layer is a 5-inch very dark gray (10YR 3/1) loam. The middle layer is a dark gray (5Y 4/1) gravelly sandy loam with olive brown (2.5Y 4/3) redoximorphic features from 5 to 9 inches. The lower layer is a dark greenish gray (10Y 4/1) gravelly sandy loam with dark yellowish brown (10YR 3/4) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WMT8 is forested and consists of red alder, Douglas fir, big-leaf maple, European mountain ash, western redcedar, Himalayan blackberry, Indian plum, salmonberry, English ivy, and western swordfern.

Wetland WMT8 is classified as palustrine forested under USFWS system, and depressional under the HGM system. Wetland WMT8 is rated a Category IV according to the City of Mountlake Terrace (Mountlake Terrace MC 16.15.080) and Ecology. The wetland scored 15 points on Ecology's rating form (4 points for water quality, 3 points for hydrologic functions, and 8 points for habitat functions) (Appendix D). The City of Mountlake Terrace requires a standard 50-foot buffer for Category IV (Mountlake Terrace MC 16.15.090).

3.4 Lynnwood

Wetland WLY3

Size: Approximately 0.08 acre

City of Lynnwood and Ecology Rating: Category III

USFWS Classification: Palustrine Scrub-shrub

HGM Classification: Depressional

Sample Plots: WLY3-SP1 and WLY3-SP2

Wetland WLY3 is in a linear depression northwest of I-5 and south of the end of 53rd Avenue West (see Figure 3-1c). The wetland is located entirely within the field survey area. Sample Plot WLY3-SP1 characterizes the wetland and Sample Plot WLY3-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by surface water from a culvert under 52nd Avenue and a high groundwater table. Saturation at the surface was observed along the perimeter of the wetland with flowing water through the center of the wetland. A well-defined, ditched channel is present through some of the wetland. The wetland drains to a lifted culvert located near the southwest end of the wetland.

Wetland WLY3 contains a scrub-shrub community. Vegetation within the wetland is dominated by rose spirea with some Himalayan blackberry.

Soil was examined to a depth of 20 inches and consists of one layer. The soil is a black (10YR 2/1) silt loam. High levels of organic content were observed in the soil. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WLY3 consists of steep forested slopes to the southeast and disturbed residential properties to the northwest. Vegetation in the buffers consists of Douglas fir, big-leaf maple, Indian plum, and western swordfern.

Wetland WLY3 is classified as palustrine scrub-shrub under the USFWS system, and depressional under the HGM system. Wetland WLY3 is rated a Category III according to the City of Lynnwood (Lynnwood MC 17.10.050) and Ecology. The wetland scored 35 points on Ecology's rating form (18 points for water quality, 8 points for hydrologic functions, and 9 points for habitat functions) (Appendix D). The City of Lynnwood requires a standard 75-foot buffer for Category III wetlands (Lynnwood MC 17.10.051).

Wetland WLY4

Size: Approximately 17.00 acres

City of Lynnwood and Ecology Rating: Category II

USFWS Classification: Palustrine Forested/Palustrine Scrub-shrub/Palustrine Emergent

HGM Classification: Riverine/Depressional Sample Plots: WLY4-SP1 and WLY4-SP2

Wetland WLY4 is a large wetland/stream complex associated with Scriber Creek, located southeast of Cedar Valley Road, northeast of 204th Street SW, and southwest of the Lynnwood Transit Center (see Figure 3-1c). The wetland extends outside of the field survey and study areas. Sample Plot WLY4-SP1 characterizes the wetland and Sample Plot WLY4-SP2 characterizes the adjacent upland.

Wetland hydrology is supported primarily by Scriber Creek, which enters the wetland from the north. A high groundwater table and stormwater runoff likely contribute to the hydrology as well. Saturation of soils, inundation, a permanently flowing stream, and open water ponds were observed in areas of Wetland WLY4. The channel of Scriber Creek is well-defined near the northern and southern boundaries, becoming less-defined in between. The wetland and Scriber Creek drain southeast, out of the study area.

Wetland WLY4 contains forested, scrub-shrub, and emergent communities. The forested areas are dominated by black cottonwood, Pacific willow, and reed canarygrass, with lesser amounts of western redcedar, Sitka spruce, and salmonberry. The shrub community consists primarily of rose spirea, red-osier dogwood, twinberry honeysuckle, and Sitka willow. Indian plum, western skunk cabbage, and water parsley are also present. Reed canarygrass dominates the emergent community. The southern portion of the wetland adjacent to the Interurban Trail is actively maintained.

Soil was examined to a depth of 20 inches and consists of one layer. The soil is a black (10YR 2/1) mucky silt. High levels of organic content in various stages of decomposition were observed in the soil. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WLY4 is generally very narrow, often forested. The wetland is in an urban setting and much of the buffer is a narrow line of trees located between the wetland and developed areas, such as parking lots, trails, or residential and commercial structures. Vegetation includes Douglas fir, western redcedar, red alder, black cottonwood, Himalayan blackberry, red-osier dogwood, English holly, Portugal laurel (*Prunus lusitanica*), western swordfern, English ivy, maintained grasses, and other disturbance-tolerant species. Plantings, a split rail fence, and Native Growth Protection Area (NGPA) signs were observed in the vicinity of the private property to the south along the wetland edge.

Wetland WLY4 is classified as palustrine forested/palustrine scrub-shrub/palustrine emergent under the USFWS system, and riverine/depressional under the HGM system. Wetland WLY4 is rated a Category II according to the City of Lynnwood (Lynnwood MC 17.10.050) and Ecology. The wetland scored 67 points on Ecology's rating form (26 points for water quality, 20 points for

hydrologic functions, and 21 points for habitat functions) (Appendix D). The City of Lynnwood requires a standard 110-foot buffer for Category II wetlands (Lynnwood MC 17.10.051).

Wetland WLY6

Size: Approximately 0.05 acre

City of Lynnwood and Ecology Rating: Category III

USFWS Classification: Palustrine Forested

HGM Classification: Depressional

Sample Plots: WLY6-SP1 and WLY6-SP2

Wetland WLY6 is located in a depression northwest of I-5 and northeast of 208th Street SW (see Figure 3-1c). The wetland is located entirely within the field survey area. Sample Plot WLY6-SP1 characterizes the wetland and Sample Plot WLY6-SP2 characterizes the adjacent upland.

Wetland hydrology is supported by stormwater runoff from under 208th Street SW and a high groundwater table. Wetland WLY6 likely has a seasonal flooded and seasonal saturated hydroperiods. Wetland hydrology indicators observed include small pockets of inundation and soil saturation. No inlet or outlet was located during the field investigation.

Wetland WLY6 contains a forested community dominated by Pacific willow and twinberry honeysuckle. Other vegetation within the wetland includes red alder, Himalayan blackberry, sedge, common ladyfern, and reed canarygrass.

Soil was examined to a depth of 18 inches and consists of three layers. The top layer is a 4-inch very dark gray (10YR 3/1) silt loam with yellowish red (5YR 4/6) redoximorphic features. The middle layer is a 5-inch dark gray (5Y 4/1) clay loam with strong brown (7.5YR 4/6) redoximorphic features. The lower layer is a dark gray (5Y 4/1) clay loam with fewer strong brown (7.5YR 4/6) redoximorphic features. Soils in the wetland are not mapped by the NRCS (identified as Urban land).

The buffer surrounding Wetland WLY6 to the west is narrow, consisting of disturbance-tolerant grasses and forbs associated with the maintained right-of-way for 208th Street SW. The buffer to the north is dominated by black cottonwood and Himalayan blackberry with a few red elderberry and one Douglas fir, extending into a fallow field. The buffer to the south and east contains a gravel access road and is vegetated primarily with Himalayan blackberry and Scotch broom with a few trees and some grasses. Much of the buffer is disturbed by a gravel access road and 208th Street SW.

Wetland WLY6 is classified as palustrine forested under USFWS system, and depressional under the HGM system. Wetland WLY6 is rated a Category III according to the City of Lynnwood (Lynnwood MC 17.10.050) and Ecology. The wetland scored 39 points on Ecology's rating form (24 points for water quality, 7 points for hydrologic functions, and 8 points for habitat functions) (Appendix D). The City of Lynnwood requires a standard 75-foot buffer for Category III wetlands (Lynnwood MC 17.10.051).

4 REFERENCES

- Brinson, M.M. 1993. A Hydrogeomorphic Classification for Wetlands. Wetlands Research Program Technical Report WRP-DE-4. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.
- City of Seattle. 2007. State of the Waters 2007. Volume I: Seattle Watercourses. Available at: http://www.ci.seattle.wa.us/util/Services/Drainage_&_Sewer/Keep_Water_Safe_&_Clean/RestoreOurWaters/ProgramDocuments/index.htm. Accessed March 13, 2012.
- Corps (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, MS.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-70/31, U.S. Fish and Wildlife Service, Washington, DC.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, Environmental Laboratory, Department of the Army, Waterways Experiment Station, Vicksburg, MS.
- ESA Adolfson. 2010. Sound Transit 2 Mitigation: Impact Summary and Analysis Memorandum. December 3, 2010. Prepared for Sound Transit. Seattle, WA.
- Gretag Macbeth. 2000. Munsell soil color charts. New Windsor, NY.
- Hruby, T. 2004. Washington State Wetland Rating System for Western Washington Revised. Washington State Department of Ecology Publication #04-06-025. Olympia, WA.
- Pojar, Jim, and Andy MacKinnon (eds.). 1994. Plants of the Pacific Northwest coast. Vancouver, BC: Lone Pine.
- Reed, P.B. 1988. National list of plant species that occur in wetlands: Southwest (Region 7). National Wetlands Inventory, U.S. Fish and Wildlife Service, Washington, D.C. Biological Report 88 (26.7).
- Reed, P.B. 1993. 1993 supplement to national list of plant species that occur in wetlands: Northwest region (Region 9). U.S. Fish and Wildlife Service, Washington, D.C. Biological Report 88(26.9).
- Sound Transit. 2006. North Link Light Rail Transit Project Final Supplemental Environmental Impact Statement. Seattle, WA.
- USDA, NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 2012a. Climate Analysis for Wetlands by County (http://www.wcc.nrcs.usda.gov/climate/wetlands.html). Portland, OR.

- USDA, NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 2012b. The PLANTS Database (http://plants.usda.gov). National Plant Data Team, Greensboro, NC.
- WSDOT (Washington State Department of Transportation). 1993. SR 5 Northgate I/C Revision from NE 107th Street. XL-0627. Biology/Wetland Report. April, 1993.

APPENDIX A

Wetland Field Reconnaissance Dates

Wetlands	Date of Field Investigation	Location
WSE1	3/9/12	I-5 ROW, west of 1st Avenue NE & south of on & off ramps
WSE2	3/12/12	I-5 ROW, west of 1st Avenue NE & south of Northgate Way
WSE3	3/14/12	I-5 ROW, between I-5 and 5th Avenue NE
WSE4	3/14/12	Between 5th Avenue NE and Jackson Park Golf Course
WSE5	3/19/12	I-5 ROW, between I-5 and 5th Avenue NE
WSE6	3/19/12	I-5 ROW, between I-5 off-ramp and 5th Avenue NE
WSE7	3/19/12	I-5 ROW, between I-5 and Transit off-ramp
WSE8	3/21/12	Between 5th Avenue NE and Jackson Park Golf Course
WSH1	3/15/12	I-5 ROW, west of 5th Avenue NE and north of NE 145th Street
WSH2	3/15/12	I-5 ROW and extending east, west of 3rd Avenue NE
WSH3	3/15/12	I-5 ROW, south of NE 155th Street, west of fire station
WSH4	3/21/12	I-5 ROW, east of I-5 off ramp to SR 104
WSH5	3/21/12	I-5 ROW, in cloverleaf south of SR 104
WMT1	3/27/12	I-5 ROW, in cloverleaf north of SR 104
WMT2	3/27/12	I-5 ROW, east of I-5 on ramp from SR 104
WMT3	3/28/12	I-5 ROW, east of I-5 off ramp to 236th Street SW
WMT4	3/29/12	I-5 ROW, east of I-5 south off ramp to SR 104
WMT5	4/3/12	I-5 ROW, west of I-5 south off ramp to 220th Street SW
WMT6	4/3/12	I-5 ROW, east of I-5 south off ramp to 220th Street SW
WMT7	4/3/12	I-5 ROW, east of 60th Avenue W
WMT8	4/3/12	I-5 ROW, east of I-5 and south of 212th Street SW
WLY3	4/5/12	I-5 ROW, northwest of I-5 and southwest of 52nd Avenue W
WLY4	4/9/12	Scriber Creek Park, southwest of Lynnwood Transit Center
WLY6	4/17/12	Northwest of I-5 and east of 208th Street SW

APPENDIX B

Photographs



Photograph 1. Wetland WSE1 facing north.



Photograph 2. Wetland WSE2 from north berm, facing north.



Photograph 3. Wetland WSE3, looking south at sample plot WSE3-SP1.



Photograph 4. Wetland WSE4, looking northeast at sample plot WSE4-SP1.



Photograph 5. Wetland WSE5 along 5th Avenue NE, facing south.



Photograph 6. Wetland WSE6, facing northeast.



Photograph 7. Wetland WSE7 from the south end, facing north.



Photograph 8. Wetland WSE8 from east of Thornton Creek, south of 5th Avenue NE crossing.



Photograph 9. Wetland WSH1 looking northeast at sample plot WSH1-SP1.



Photograph 10. Wetland WSH2 from the south end, facing north.



Photograph 11. Wetland WSH3 from the south side, facing north.



Photograph 12. Wetland WSH4 from the south end, facing north.



Photograph 13. Wetland WSH5 from the north end, facing southeast.



Photograph 14. Wetland WMT1 facing east side from culvert under SR 104 (McAleer Creek on left side of photograph).



Photograph 15. Wetland WMT2 from McAleer Creek, facing east.



Photograph 16. Wetland WMT3 looking north at sample plot WMT3-SP1.



Photograph 17. Wetland WMT4 from retaining wall, facing west.



Photograph 18. Wetland WMT5 from the center, facing south.



Photograph 19. Wetland WMT6 from the east side, facing west-southwest.



Photograph 20. Wetland WMT7 from the southeast, looking at sample plot WMT7-SP1.



Photograph 21. Wetland WMT8 from north looking south.



Photograph 22. Wetland WLY3 facing west.



Photograph 23. Wetland WLY4 near 200th Street SW and Cedar Valley Road, facing southeast (Scriber Creek on left side of photograph).



Photograph 24. Wetland WLY6 from access road, facing north-northeast.

APPENDIX C

Wetland Determination Data Forms

Project Site:	Lynnwood Link	Extension				City/Coun	nty: <u>Se</u>	attle/King		Sampling I	Date:	3/9/	12	
Applicant/Owner:	Sound Transit							Sta	ate: WA	Sampling I	Point:	WS	E1-SF	<u> 1</u>
Investigator(s):	M. Maynard, C.	Worsley					5	Section, To	wnship, Rang	je: <u>S29, T</u>	26N, 4E			
Landform (hillslope, ter	rrace, etc.): <u>t</u>	oe of slope			Loca	I relief (conc	ave, conv	vex, none):	concave		Slope	e (%):	<u>5</u>	
Subregion (LRR):	<u>A</u>		Lat: 47.7	0557516	600		Long	: -122.329	01515600		Datum:	NAD8	<u>3</u>	
Soil Map Unit Name:	Urban land								NWI class	sification:	<u>PFO</u>			
Are climatic / hydrologi	ic conditions on	the site typical for	this time of	year?	Υe	es 🗆	No	☐ (If	no, explain in	n Remarks.))			
Are Vegetation □,	Soil □,	or Hydrology	☐, signific	cantly dist	urbed	? Are "l	Normal C	Circumstanc	es" present?		Yes	\boxtimes	No	
Are Vegetation □,	Soil □,	or Hydrology	□, natura	lly proble	matic?	(If ne	eded, ex	plain any ar	nswers in Rer	marks.)				
SUMMARY OF FIN	DINGS - Atta	ch site map sh	owing sa	npling p	ooint	locations,	transe	cts, impor	rtant featur	es, etc.				
Hydrophytic Vegetation	n Present?		Yes 🗵	No										
Hydric Soil Present?			Yes 🗵	No		Is the Samp within a We		a			Yes	\boxtimes	No	
Wetland Hydrology Pre	esent?		Yes 🗵	No		within a vve	tianu i							
Remarks: Sample pl		he edge of the we	tted channe	l on the e	ast sid	le								
rtemants. Cample pr	ot is located at the	ne eage of the we	ntou chamic		uot oic									
VEGETATION – Us	se scientific n	ames of plants	5											
Tree Stratum (Plot size			Absolute	Domina		Indicator	Domin	ance Test	Worksheet:					
1. Salix lucida	- <u></u> ,		% Cover 90	Species	<u>s?</u>	Status FACW	l							
Fraxinus latifolia			<u>30</u> 10	<u>ves</u> no		FACW		er of Domina re OBL, FA	CW, or FAC:		<u>2</u>			(A)
3.			10	110		<u>I ACW</u>								
4.								Number of Dos Alles Across Alles			<u>3</u>			(B)
			100	= Total	Cover									
$50\% = \underline{50}$, $20\% = \underline{20}$ Sapling/Shrub Stratum	(Plot size: 5M)		100	= 10(a)	Cover			nt of Domina re OBL. FA0	ant Species CW, or FAC:		<u>66</u>			(A/B)
1. <u>Cornus sericea</u>	<u>r (Fiot Size. <u>Sivi</u>)</u>		<u>60</u>	VAS		FACW	-		worksheet:					
2			<u>00</u>	<u>yes</u>		<u>I AOW</u>	lievan		% Cover of:		Multip	v bv:		
3							OBL sp		70 Cover or.		x1 =	у Бу.		
								species			x2 =		_	
4 5							FAC sp	•			x3 =			
				= Total	Caa.								_	
50% = <u>30</u> , 20% = <u>12</u>	014)		<u>60</u>	= 10(a)	Cover			species			x4 =	_	_	
Herb Stratum (Plot siz	.e: <u>2IVI</u>)						UPL sp	pecies			x5 =			
1							Columi	n Totals:		(A)			(E	3)
2									Prevalence I	Index = B/A	\ =			
3							Hydro	phytic Vege	etation Indic	ators:				
4							□ 1	– Rapid Te	est for Hydrop	ohytic Vege	tation			
5							⊠ 2	? - Dominan	ce Test is >50	0%				
6							□ 3	- Prevalend	ce Index is <3	3.0 ¹				
7							□ 4	- Morpholo	gical Adaptat	tions ¹ (Prov	ide suppor	ting		
8								data in Re	emarks or on	a separate	sheet)			
9							□ 5	- Wetland I	Non-Vascular	r Plants ¹				
10								Problematic	Hydrophytic \	Vegetation ¹	(Explain)			
11							1							
50% =, 20% = _				= Total	Cover				ic soil and we disturbed or					
Woody Vine Stratum (Plot size: <u>5M</u>)						·	,						
1. Rubus armeniacus	<u>S</u>		<u>60</u>	<u>yes</u>		<u>FACU</u>	l							
2							Hydro		V.			Al e		
50% = <u>30</u> , 20% = <u>12</u>			<u>60</u>	= Total	Cover		Vegeta Preser		Υe	7 3		No		
% Bare Ground in Her	b Stratum	_												
Remarks: T	he 1988 Region	9 National Wetla	nd Plant List	and 1993	3 Supp	lement were	e used for	r this deline	ation.					
omano.	-													

Depth	Matrix				Redox Feat	ures								
(inches) Co	olor (moist)	%	Color (noist)	%	Type ¹	Loc ²	Texture			Remark	(S		
<u>0-5</u>	10YR 2/2	<u>100</u>		_				gr silt loa	<u></u>					
<u>5-26</u>	10B 6/1	<u>100</u>		_				sand						
				_										
				_					· —					
				_					· —					
				_										
				_										
				_										
	tration, D=Deplet					ated Sand	Grains. ² Lo		Pore Lining, I					
lydric Soil Indica	ators: (Applicabl	e to all L	RRs, unles	s otherw	vise noted.)			Indic	cators for Pro	blematic	Hydric	Soils ³ :		
Histosol (A1)			Sand	dy Redox (S5)				2 cm Muck	(A10)				
Histic Epipe	don (A2)			Strip	ped Matrix (S6)				Red Parent	t Material	(TF2)			
Black Histic	(A3)			Loan	my Mucky Miner	al (F1) (ex	cept MLRA 1)		Very Shallo	ow Dark S	urface (1	F12)		
☐ Hydrogen S	ulfide (A4)			Loan	my Gleyed Matri	x (F2)			Other (Expl	lain in Rei	marks)			
☐ Depleted Be	low Dark Surface	e (A11)		Depl	leted Matrix (F3)									
	Surface (A12)			Redo	ox Dark Surface	(F6)		3			,			
=	y Mineral (S1)			Depl	leted Dark Surfa	ce (F7)			cators of hydro etland hydrolo					
Sandy Gleye	ed Matrix (S4)			Redo	ox Depressions	(F8)			nless disturbe			,		
lestrictive Layer	(if present):													
ype:														
epth (inches):							Hydric Soils Pr	esent?		Yes	\boxtimes	No		
Remarks:														
HYDROLOGY	gy Indicators:													
HYDROLOGY Vetland Hydrolog		required:	; check all tl	nat apply)			Second	dary Indicator	s (2 or mo	ore requi	red)		
HYDROLOGY Vetland Hydrolo Primary Indicators	(minimum of one	e required	; check all tl		r) er-Stained Leave	es (B9)			dary Indicator Water-Stained			red)		
HYDROLOGY Vetland Hydrolog Primary Indicators	(minimum of one tter (A1)	e required		Wate	•	, ,	В)	□ V		Leaves (B9)	red)		
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation ((minimum of one tter (A1) Table (A2)	required		Wate	er-Stained Leave	, ,	В)) (Water-Stained (MLRA 1, 2, 4 Drainage Patte	Leaves (A, and 4E erns (B10	B9) B)	red)		
HYDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation ((minimum of one ater (A1) Table (A2) A3)	e required		Wate (exc Salt	er-Stained Leave	4A, and 4	В)) (Water-Stained	Leaves (A, and 4E erns (B10	B9) B)	red)		
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark	(minimum of one ater (A1) Table (A2) A3)	e required		Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11)	4A, and 4 s (B13)	В)))]	Water-Stained (MLRA 1, 2, 4 Drainage Patte	Leaves (A, and 4E erns (B10) /ater Tabl	(B9) (B) (b) (c))	
HYDROLOGY Wetland Hydrologorimary Indicators Surface Wa High Water Saturation (Water Mark	(minimum of one liter (A1) Table (A2) A3) s (B1) eposits (B2)	e required		Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc	4A , and 4 s (B13) dor (C1)	B) Living Roots (C3)) (Water-Stained (MLRA 1, 2, 4 Orainage Patte Ory-Season W	I Leaves (A, and 4E erns (B10) / ater Tabl ible on Ae	B9) B) (C2) Perial Image))	
HYDROLOGY Vetland Hydrologo Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D	(minimum of one otter (A1) Table (A2) A3) s (B1) leposits (B2) its (B3)	· required		Wate (exc Salt Aqua Hydr Oxid	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc	4A , and 4 s (B13) dor (C1) res along L	Living Roots (C3)		Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi	Leaves (A, and 4E erns (B10 / ater Tabl ible on Ae Position (D	B9) B) (C2) Perial Image)	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi	(minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4)	e required		Wate (exc Salt Aqua Hydr Oxid	ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Octived Rhizospher	4A, and 4 s (B13) dor (C1) res along L d Iron (C4)	Living Roots (C3)		Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P	I Leaves (A, and 4E erns (B10 /ater Tabl ible on Ae Position (D ard (D3)	B9) B) (C2) Perial Image)	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi	(minimum of one iter (A1) Table (A2) A3) s (B1) eeposits (B2) its (B3) r Crust (B4) ts (B5) I Cracks (B6)			Wate (exc Salt Aqua Hydr Oxid Pres	ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Od lized Rhizospher eence of Reduce	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled	Living Roots (C3)) I Soils (C6)	V	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita	I Leaves (A, and 4E erns (B10) / ater Tabl ible on Ae Position (D ard (D3)	(B9) (B9)	gery (C9)	
HYDROLOGY Vetland Hydrologous Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposition Algal Mat or Iron Deposition Surface Soition	(minimum of one later (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4) ts (B5)			Wate (exc Salt Aqua Hydr Oxid Pres Reca Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc dized Rhizospher eence of Reduce eent Iron Reduction	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	Living Roots (C3)) I Soils (C6)	V	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T	I Leaves (A, and 4E erns (B10 / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6	B9) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9)	
HYDROLOGY Vetland Hydrology Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposit Iron Deposit Surface Soit Inundation V Sparsely Ve	(minimum of one other (A1) Table (A2) A3) s (B1) leposits (B2) its (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I	magery (I		Wate (exc Salt Aqua Hydr Oxid Pres Reca Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc lized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	Living Roots (C3)) I Soils (C6)	V	Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo	I Leaves (A, and 4E erns (B10 / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6	B9) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9)	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve	(minimum of one other (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I egetated Concave	magery (I	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Od lized Rhizospher ence of Reduce ent Iron Reduction ated or Stresses er (Explain in Re	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	Living Roots (C3)) I Soils (C6)	V	Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo	I Leaves (A, and 4E erns (B10 / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6	B9) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9))	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve	(minimum of one other (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I egetated Concave	magery (I		Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc lized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	Living Roots (C3)) I Soils (C6)	V	Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo	I Leaves (A, and 4E erns (B10 / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6	B9) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9)	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve	(minimum of one other (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I egetated Concave esent? Yes	magery (I	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Reca Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Od lized Rhizospher ence of Reduce ent Iron Reduction ated or Stresses er (Explain in Re	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	Living Roots (C3)) I Soils (C6)) (LRR A)	V	Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo	I Leaves (A, and 4E erns (B10 / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6	B9) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9)	
High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation	(minimum of one other (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I egetated Concave esent? Yes ent? Yes ent? Yes	magery (I	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc dized Rhizospher sence of Reduce ent Iron Reductivated or Stresses er (Explain in Re	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1 marks)	Living Roots (C3)) I Soils (C6)) (LRR A)	V (Water-Stained (MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo	I Leaves (A, and 4E erns (B10 /ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6 dummocks	B9) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	(C9) No	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Iron Deposi Surface Soi Inundation V Sparsely Vetrield Observation Surface Water Presentation Pre	(minimum of one other (A1) Table (A2) A3) s (B1) reposits (B2) reposits (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I regetated Concavens: resent? resent? Yes reposits (Yes fringe)	magery (I	B7) (B8) No \(\bar{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\\ \text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\texi{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\titt{\text{\teti}\text{\text{\text{\text{\texi{\texi{\texi{\texi{\texi\tinit\}\titt{\text{\texi{\texi{\texi{\texi\tin\tint{\texi}\texititit{\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi	Wate (exc Salt Aqua Hydr Oxid Pres Reca Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc dized Rhizospher sence of Reduce ent Iron Reduction ated or Stresses er (Explain in Re Depth (inches): Depth (inches):	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1 marks) surface surface	Living Roots (C3)) I Soils (C6)) (LRR A) Wet	V (Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave H	I Leaves (A, and 4E erns (B10 /ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6 dummocks	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9		
HYDROLOGY Wetland Hydrology Primary Indicators Surface Wa High Water Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Vereid Observation Surface Water Presentation Presentation	(minimum of one other (A1) Table (A2) A3) s (B1) reposits (B2) reposits (B3) r Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I regetated Concavens: resent? resent? Yes reposits (Yes fringe)	magery (I	B7) (B8) No \(\bar{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\\ \text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\texi{\text{\texi{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\titt{\text{\teti}\text{\text{\text{\text{\texi{\texi{\texi{\texi{\texi\tinit\}\titt{\text{\texi{\texi{\texi{\texi\tin\tint{\texi}\texititit{\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi	Wate (exc Salt Aqua Hydr Oxid Pres Reca Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate rogen Sulfide Oc dized Rhizospher sence of Reduce ent Iron Reduction ated or Stresses er (Explain in Re Depth (inches): Depth (inches):	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1 marks) surface surface	Living Roots (C3)) I Soils (C6)) (LRR A) Wet	V (Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave H	I Leaves (A, and 4E erns (B10 /ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6 dummocks	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	gery (C9		

Project Site: Lynnwoo	od Link Extension				City/Cou	nty: <u>Seattl</u>	e/King	Sampli	ng Date:	3/9/	12	
Applicant/Owner: Sound T	<u>ransit</u>						State: W/	<u>A</u> Sampli	ng Point:	WS	E1-SF	22
Investigator(s): M. Mayn	nard, C. Worsley					Sec	ction, Township,	Range: S25	9, 26N, 4E			
Landform (hillslope, terrace, etc	.): slope			Loc	al relief (cond	cave, convex	k, none): <u>conc</u>	cave	Slope	e (%):	<u>20</u>	
Subregion (LRR): A		Lat: 4	7.70558	<u>3299100</u>		Long:	-122.329079959	000	Datum:	NAD8	<u>3</u>	
Soil Map Unit Name: <u>Urban I</u>	<u>land</u>						NW	l classification	n: <u>upland</u>			
Are climatic / hydrologic condition	ons on the site typical for	this time	of year?	? '	Yes 🗆] No	☐ (If no, exp	lain in Rema	rks.)			
Are Vegetation ☐, Soil	□, or Hydrology	☐, sign	nificantly	/ disturbe	d? Are	"Normal Circ	cumstances" pre	sent?	Yes	\boxtimes	No	
Are Vegetation □, Soil	☐, or Hydrology	☐, natu	urally pr	oblemation	c? (If ne	eeded, expla	in any answers	in Remarks.)				
SUMMARY OF FINDINGS -	– Attach site map sl	nowina s	sampli	na poin	t locations	. transects	s. important fe	eatures, et	C.			
Hydrophytic Vegetation Present	-	Yes		lo 🛛		,	, ,					
Hydric Soil Present?		Yes		lo 🛛	Is the Sam within a W				Yes		No	\boxtimes
Wetland Hydrology Present?		Yes		lo 🛛	within a w	etianor						
Remarks: The sample plot is I	located on the west side	of the we	tland or	the hill o	slone to the I-	5 off-ramp						
Tremains. The sample plot is i	ocated on the west side	or the we	tiana on	1 110 11111	siope to the r	o on ramp.						
VEGETATION - Use scien	tific names of plants					1						
Tree Stratum (Plot size: 10M)		Absolute % Cover		minant ecies?	Indicator Status	Dominan	ce Test Worksh	neet:				
1. Crataegus monogyna		30	yes		FACU	Number o	of Dominant Spec	cies	4			(4)
2. Thuja plicata		<u>8</u>	yes	<u> </u>	<u>FAC</u>		OBL, FACW, or		<u>1</u>			(A)
3. <u>Pseudotsuga menziesii</u>		<u>2</u>	<u>no</u>		<u>FACU</u>	Total Num	nber of Dominan	ıt	2			(D)
4				_		Species A	Across All Strata:	:	<u>3</u>			(B)
50% = 20, 20% = 8		<u>40</u>	= T	otal Cov	er	Percent of	f Dominant Spec	cies	<u>33</u>			(A/B)
Sapling/Shrub Stratum (Plot siz	e: <u>5M</u>)					That Are (OBL, FACW, or	FAC:	<u>55</u>			(7/15)
1				_		Prevalenc	ce Index works	heet:				
2				_			Total % Cove	er of:	Multip	y by:		
3			_	_		OBL spec	ies	_	x1 =		_	
4				_		FACW sp	ecies		x2 =			
5			_	_		FAC spec	ies	_	x3 =			
50% =, 20% =			= T	otal Cov	er	FACU spe	ecies		x4 =		_	
Herb Stratum (Plot size: 2M)						UPL spec	ies		x5 =			
1			_	_		Column T	otals:	(A)			(E	3)
2			_	_			Prevale	ence Index =	B/A =			
3				_		Hydrophy	ytic Vegetation	Indicators:				
4			_	_		□ 1-I	Rapid Test for H	lydrophytic V	egetation			
5				_		2-0	Dominance Test	is >50%				
6				_		□ 3-F	Prevalence Index	x is <u><</u> 3.0 ¹				
7				_			Morphological Ad			ting		
8				_			data in Remarks	or on a sepa	rate sheet)			
9				_		□ 5-V	Wetland Non-Va	scular Plants	1			
10				_		☐ Prob	olematic Hydropl	hytic Vegetat	ion ¹ (Explain)			
11				_		1, ,,						
50% =, 20% =			= T	otal Cov	er		s of hydric soil a it, unless disturb					
Woody Vine Stratum (Plot size:	<u>5M</u>)											
1. Rubus armeniacus		<u>100</u>	yes	<u> </u>	<u>FACU</u>	1						
2				_		Hydrophy Vegetation		Yes		No		\boxtimes
$50\% = \underline{50}, 20\% = \underline{20}$		<u>100</u>	= T	otal Cov	er	Present?		. 00				
% Bare Ground in Herb Stratum	1											
Remarks: The 1988 F	Region 9 National Wetla	nd Plant L	ist and	1993 Տսլ	oplement wer	e used for th	is delineation.					

O-5 10YR 3/1 100 5-18 2.5Y 4/3 100 Sype: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated varic Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Sand Grains. ² Loca		ining, M=Matrix			
ype: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	Sand Grains. ² Loca	ation: PL=Pore L				
Histosol (A1) Histo Epipedon (A2) Black Histic (A3) Histo Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F-	Sand Grains. ² Loca	Indicators f				
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	Sand Grains. ² Loca	Indicators f				
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Grid Capilicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F-	Sand Grains. ² Loca	Indicators f				
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Grid Capilicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F-	Sand Grains. ² Loca	Indicators f				
Histosol (A1) Histo Epipedon (A2) Black Histic (A3) Histo Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F-	Sand Grains. ² Loca	Indicators f				
Histosol (A1) Histo Epipedon (A2) Black Histic (A3) Histo Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F-	Sand Grains. ² Loca	Indicators f				
Histosol (A1) Histo Epipedon (A2) Black Histic (A3) Histo Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F-	Sand GrainsLoca	Indicators f				
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (F			for Problematic F	Undela Cal	1a ³ .	
Histic Epipedon (A2) Black Histic (A3) Capacital Stripped Matrix (S6) Loamy Mucky Mineral (F			Muck (A10)	nyaric Soi	is :	
Black Histic (A3) Loamy Mucky Mineral (F		_	Parent Material (1	TE2)		
) (except MLRA 1)	_	Shallow Dark Su	,	2)	
		_ `	er (Explain in Rem	•	-,	
Depleted Below Dark Surface (A11) Depleted Matrix (F3)	,		(=-4	,		
I Thick Dark Surface (A12) □ Redox Dark Surface (F6)						
I Sandy Mucky Mineral (S1) □ Depleted Dark Surface (F	7)		of hydrophytic veg		t	
Sandy Gleyed Matrix (S4) Redox Depressions (F8)			hydrology must be isturbed or proble			
estrictive Layer (if present):						
pe:						
epth (inches):	Hydric Soils Pres	sent?	Yes		No	\boxtimes
YDROLOGY						
etland Hydrology Indicators:						
rimary Indicators (minimum of one required; check all that apply)		Secondary Inc	dicators (2 or mor	re required))	
Surface Water (A1) Water-Stained Leaves (B	•	☐ Water-S	24-1II /D			
High Water Table (A2) (except MLRA 1, 2, 4A,			Stained Leaves (B	•	<u> </u>	
	and 4B)		1, 2, 4A, and 4B)	•		
Saturation (A3)	·	☐ Drainag	1, 2, 4A, and 4B) ge Patterns (B10))	<u> </u>	
Salt Crust (B11) Water Marks (B1) Salt Crust (B11) Aquatic Invertebrates (B1	3)	☐ Drainag	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table	(C2)		
Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Salt Crust (B11) Aquatic Invertebrates (B1) Hydrogen Sulfide Odor (C	3) 31)	☐ Drainag ☐ Dry-Sea ☐ Saturati	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri	(C2)		
Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Salt Crust (B11) Aquatic Invertebrates (B1) Hydrogen Sulfide Odor (C) Oxidized Rhizospheres a	3) 21) ong Living Roots (C3)	□ Drainag □ Dry-Sea □ Saturati □ Geomoi	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2	(C2)		
Saturation (A3) Salt Crust (B11) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Salt Crust (B11) Aquatic Invertebrates (B1) Hydrogen Sulfide Odor (C	3) C1) ong Living Roots (C3) n (C4)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 4 Aquitard (D3)	(C2)		
Saturation (A3) Salt Crust (B11) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 / Aquitard (D3) eutral Test (D5)	(C2) ial Imagery		
Saturation (A3) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Salt Crust (B11) Aquatic Invertebrates (B1) Hydrogen Sulfide Odor (C) Oxidized Rhizospheres a Presence of Reduced Iron Recent Iron Reduction in Stunted or Stresses Plant	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 Aquitard (D3) eutral Test (D5) Ant Mounds (D6)	(C2) ial Imagery 2) (LRR A)		
Saturation (A3) 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) Salt Crust (B11) Aquatic Invertebrates (B1) Aquatic Invertebrates (B1) Pydrogen Sulfide Odor (C) Aquatic Invertebrates (B1) Pydrogen Sulfide Odor (C) Presence of Reduced Iron Recent Iron Reduction in Stunted or Stresses Plant Other (Explain in Remark	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 / Aquitard (D3) eutral Test (D5)	(C2) ial Imagery 2) (LRR A)		
Saturation (A3) 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)	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 Aquitard (D3) eutral Test (D5) Ant Mounds (D6)	(C2) ial Imagery 2) (LRR A)		
Saturation (A3) 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)	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 Aquitard (D3) eutral Test (D5) Ant Mounds (D6)	(C2) ial Imagery 2) (LRR A)		
Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B1 Sediment Deposits (B2) Hydrogen Sulfide Odor (C1 Drift Deposits (B3) Oxidized Rhizospheres a Algal Mat or Crust (B4) Presence of Reduced Iro I Iron Deposits (B5) Recent Iron Reduction in Surface Soil Cracks (B6) Stunted or Stresses Plant Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark Sparsely Vegetated Concave Surface (B8) Peld Observations: Under Carrier (B1) Depth (inches):	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 Aquitard (D3) eutral Test (D5) Ant Mounds (D6)	(C2) ial Imagery 2) (LRR A)		
Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B1 Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) Oxidized Rhizospheres a Algal Mat or Crust (B4) Presence of Reduced Iro Iron Deposits (B5) Recent Iron Reduction in Surface Soil Cracks (B6) Stunted or Stresses Plant Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark Sparsely Vegetated Concave Surface (B8) eld Observations: urface Water Present? Yes No Depth (inches):	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A) s)	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Ne	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 Aquitard (D3) eutral Test (D5) Ant Mounds (D6) eave Hummocks	(C2) ial Imagery (C2) (LRR A) (D7)		
Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B1 Sediment Deposits (B2) Hydrogen Sulfide Odor (C1 Drift Deposits (B3) Oxidized Rhizospheres a Algal Mat or Crust (B4) Presence of Reduced Iro I Iron Deposits (B5) Recent Iron Reduction in Surface Soil Cracks (B6) Stunted or Stresses Plant Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark Sparsely Vegetated Concave Surface (B8) Pett Observations: Urface Water Present? Yes No Depth (inches): Depth (inches): Depth (inches): Depth (inches):	3) c1) ong Living Roots (C3) n (C4) Tilled Soils (C6) s (D1) (LRR A) s) Wetla	☐ Drainag ☐ Dry-Sea ☐ Saturati ☐ Geomoi ☐ Shallow ☐ FAC-Nei ☐ Raised ☐ Frost-H	1, 2, 4A, and 4B) ge Patterns (B10) ason Water Table ion Visible on Aeri rphic Position (D2 Aquitard (D3) eutral Test (D5) Ant Mounds (D6) eave Hummocks	(C2) ial Imagery (C2) (LRR A) (D7)	· (C9)	

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: <u>Seattle/King</u>	Sampling Date:	3/12/12
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSE2-SP1
Investigator(s): M. Maynard, C. Worsley				Section, Township, Rang	ge: <u>S29, T26N, 4E</u>	
Landform (hillslope, terrace, etc.): <u>depression</u>		Local	l relief (conca	ave, convex, none): <u>concave</u>	Slope	e (%): <u>10</u>
Subregion (LRR): <u>A</u>	Lat: <u>47.7</u>	0738983800		Long: <u>-122.32896977200</u>	Datum: N	NAD83
Soil Map Unit Name: <u>Urban land</u>				NWI clas	sification: PSS	
Are climatic / hydrologic conditions on the site typical fo	this time of	year? Ye	es 🗆	No	n Remarks.)	
Are Vegetation \square , Soil \square , or Hydrology	☐, signific	antly disturbed	? Are "I	Normal Circumstances" present?	? Yes	⊠ No □
Are Vegetation \square , Soil \square , or Hydrology	□, natural	ly problematic?	(If ne	eded, explain any answers in Re	marks.)	
SUMMARY OF FINDINGS – Attach site map si	nowing sar	npling point	locations,	transects, important featu	res, etc.	
Hydrophytic Vegetation Present?	Yes 🛛	No 🗆				
Hydric Soil Present?	Yes 🛛		Is the Samp within a We		Yes	⊠ No □
Wetland Hydrology Present?	Yes 🛛		within a vve	uanu :		
Remarks: Wetland is PAB with PSS fringe.The sampl	e plot is locat	ed in the PSS f	ringe along t	he eastern boundary of wetland.	approximately 10 feet	north of the
southern berm.	-			, ,	эрргэллийн уулс гэг	
VEGETATION – Use scientific names of plant	s					
Tree Stratum (Plot size: 10M)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1. <u>Salix lucida</u>	<u>75</u>	<u>yes</u>	FACW_	Number of Dominant Species	_	443
2				That Are OBL, FACW, or FAC:	: <u>2</u>	(A)
3				Total Number of Dominant		(5)
4				Species Across All Strata:	<u>2</u>	(B)
50% = <u>37.5</u> , 20% = <u>15</u>	<u>75</u>	= Total Cover		Percent of Dominant Species	400	(A/D)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC:	: <u>100</u>	(A/B)
1				Prevalence Index worksheet:	:	
2				Total % Cover of:	Multiply	<u>y by:</u>
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cover		FACU species	x4 =	
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
1. <u>Juncus effusus</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	(A)	(B)
2				Prevalence	Index = B/A =	
3				Hydrophytic Vegetation Indic	cators:	
4				☐ 1 – Rapid Test for Hydro	phytic Vegetation	
5				□ 2 - Dominance Test is >5	50%	
6				☐ 3 - Prevalence Index is <	:3.0 ¹	
7				4 - Morphological Adapta	ations ¹ (Provide support	tina
8				data in Remarks or on		9
9				☐ 5 - Wetland Non-Vascula	ar Plants ¹	
10				☐ Problematic Hydrophytic	Vegetation ¹ (Explain)	
11				l .		
50% = 5, $20% = 2$	<u>10</u>	= Total Cover		¹ Indicators of hydric soil and we be present, unless disturbed or		
Woody Vine Stratum (Plot size: 5M)				be present, unless disturbed of	problematic.	
1. Rubus armeniacus	<u>5</u>	<u>n/a*</u>	<u>FACU</u>			
2				Hydrophytic		
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover		Vegetation Y Present?	es 🗵	No 🗆
% Bare Ground in Herb Stratum						
Remarks: *excluded from calculations per chap Region 9 National Wetland Plant List and considered dominant						

0-16 10Y 4/1 10YR 3/1 16-19 N 4/ 10YR 3/1		%	Color	r (mois	t) % T	ype ¹ Loc ²	Texture	е	Remarks		
16-19 N 4/	<u>(</u>	60					Gr Sa L	oam			
	<u> </u>	<u>40</u>					<u>Gr Sa L</u>	.oam			
<u>10YR 3/1</u>	Ī	<u>70</u>					Silt Lo	<u></u>			
	2	<u>30</u>					Silt Lo	<u></u>			
	_										
	_		-								
	_		-								
/pe: C= Concentration, D=	Depletion	 , RM=F	— Reduced	—— Matrix	, CS=Covered or Coated	d Sand Grains.	Location: PL	— ——— _=Pore Lining, M=Matrix			
dric Soil Indicators: (App	plicable to	o all LF	RRs, unle	ess ot	herwise noted.)		Ind	icators for Problematic	Hydric Soil:	s³:	
Histosol (A1)					Sandy Redox (S5)			2 cm Muck (A10)			
Histic Epipedon (A2)					Stripped Matrix (S6)			Red Parent Material	(TF2)		
Black Histic (A3)					Loamy Mucky Mineral (F	1) (except MLRA 1) 🗆	Very Shallow Dark S	Surface (TF12	2)	
Hydrogen Sulfide (A4)				☒	Loamy Gleyed Matrix (F.	2)		Other (Explain in Re	marks)		
Depleted Below Dark S	Surface (A	(11)			Depleted Matrix (F3)						
Thick Dark Surface (A	12)				Redox Dark Surface (F6	5)					
Sandy Mucky Mineral ((S1)				Depleted Dark Surface (F7)		dicators of hydrophytic v			
Sandy Gleyed Matrix (S4)				Redox Depressions (F8))		wetland hydrology must unless disturbed or prob			
strictive Layer (if presen	t):										
pe:											
epth (inches):						Hydric Soil	s Present?	Yes	⊠ I	No	
YDROLOGY											
	ors:										
/etland Hydrology Indicator rimary Indicators (minimum		quired;			pply)		Seco	ondary Indicators (2 or m	ore required)		
retland Hydrology Indicatorimary Indicators (minimum Surface Water (A1)		quired;			Water-Stained Leaves (I	,	Seco	ondary Indicators (2 or m Water-Stained Leaves			
etland Hydrology Indicaterimary Indicators (minimum Surface Water (A1) High Water Table (A2)	of one re	quired;				,		` `	(B9)		
etland Hydrology Indicaterimary Indicators (minimum Surface Water (A1) High Water Table (A2)	of one re	quired;	[Water-Stained Leaves (I	,		Water-Stained Leaves	(B9) B)		
Tetland Hydrology Indicatorimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	of one re	quired;]		Water-Stained Leaves (I	and 4B)		Water-Stained Leaves (MLRA 1, 2, 4A, and 4	(B9) B)		
etland Hydrology Indicate imary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B.	of one re	quired;]]]		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (and 4B) 13) (C1)		Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A	(B9) B) D) le (C2) erial Imagery	(C9)	
etland Hydrology Indicate imary Indicators (minimum I Surface Water (A1) I High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	of one re	quired;	 		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a	and 4B) 13) C1) along Living Roots (C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab	(B9) B) D) le (C2) erial Imagery	(C9)	
retland Hydrology Indicater imary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4)	of one red)	quired;	 		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Inc.	and 4B) 13) C1) along Living Roots (on (C4)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A	(B9) B) D) le (C2) erial Imagery	(C9)	
retland Hydrology Indicaterimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	of one red)	quired;]]]]]		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in	and 4B) 13) (C1) along Living Roots (on (C4) n Tilled Soils (C6)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I	(B9) B) D) le (C2) erial Imagery	(C9)	
Tetland Hydrology Indicators (minimum Indicators Indicat	of one red	quired;	 		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Inc.	and 4B) 13) (C1) along Living Roots (on (C4) n Tilled Soils (C6)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)	(C9)	
retland Hydrology Indicate rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Infit Deposits (B4) Iron Deposits (B5) Surface Soil Cracks (B4) Inundation Visible on A	of one red 2) 36) Aerial Ima	gery (B	 		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in	and 4B) 13) (C1) along Living Roots (on (C4) in Tilled Soils (C6) ints (D1) (LRR A)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5)	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)	(C9)	
letland Hydrology Indicate rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Infit Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (E3) Inundation Visible on A	of one red 2) 36) Aerial Ima	gery (B	 		Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction ir Stunted or Stresses Plan	and 4B) 13) (C1) along Living Roots (on (C4) in Tilled Soils (C6) ints (D1) (LRR A)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)	(C9)	
Vetland Hydrology Indicate rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (E1) Inundation Visible on A1 Sparsely Vegetated Ca1 ield Observations:	of one red 2) 36) Aerial Ima	gery (B urface (Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction ir Stunted or Stresses Plan Other (Explain in Reman	and 4B) 13) (C1) along Living Roots (on (C4) n Tilled Soils (C6) nts (D1) (LRR A) rks)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)	(C9)	
letland Hydrology Indicate rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Indicators (B4) Iron Deposits (B5) Surface Soil Cracks (B4) Inundation Visible on A4 Sparsely Vegetated Cateled Observations:	of one red 2) 36) Aerial Ima oncave Su	gery (B urface ([Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction ir Stunted or Stresses Plan Other (Explain in Remar	and 4B) 13) (C1) along Living Roots (on (C4) in Tilled Soils (C6) ints (D1) (LRR A) iks)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)	(C9)	
Tetland Hydrology Indicators (minimum Indicators Indicat	of one red 2) 36) Aerial Ima	gery (B urface ([Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction ir Stunted or Stresses Plan Other (Explain in Remar	and 4B) 13) (C1) along Living Roots (on (C4) n Tilled Soils (C6) nts (D1) (LRR A) rks)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)	(C9)	
Jetland Hydrology Indicators (minimum March Indicators (minimum March Indicators (minimum March Indicators (minimum March Indicators (March Indicators (Marc	of one red 2) 36) Aerial Ima oncave Su	gery (B urface ([Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Irr Recent Iron Reduction ir Stunted or Stresses Plar Other (Explain in Reman	and 4B) 13) (C1) along Living Roots (on (C4) n Tilled Soils (C6) nts (D1) (LRR A) ks)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0	(B9) B) Ile (C2) erial Imagery D2) 6) (LRR A)		
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B3) Inundation Visible on A	2) 2) 36) Aerial Ima oncave St Yes Yes Yes	gery (B urface ([Water-Stained Leaves (I (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction ir Stunted or Stresses Plan Other (Explain in Remar	and 4B) 13) (C1) along Living Roots (on (C4) on Tilled Soils (C6) onts (D1) (LRR A) oks)	C3)	Water-Stained Leaves (MLRA 1, 2, 4A, and 4 Drainage Patterns (B10 Dry-Season Water Tab Saturation Visible on A Geomorphic Position (I Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D0 Frost-Heave Hummock	(B9) B) Ile (C2) erial Imagery D2) (LRR A) s (D7)		

Project Site:	Lynnwood Link Extension			City/Cour	nty: <u>Seattle/King</u>	Sampling Date:	03/12/1	2
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSE2-	SP2
Investigator(s):	M. Maynard, C. Worsley				Section, Township, R	Range: <u>S29, T26N, 4E</u>		
Landform (hillslope, te	errace, etc.): road fill slope		Loc	al relief (cond	eave, convex, none):	Slop	pe (%):	
Subregion (LRR):	<u>A</u>	Lat: 47.	70738415410		Long: -122.3289326960	<u>0</u> Datum:	NAD83	
Soil Map Unit Name:	<u>Urban land</u>				NWI	classification: upland	Ī	
Are climatic / hydrolog	ic conditions on the site typica	I for this time of	year?	Yes □	No 🔲 (If no, expla	in in Remarks.)		
Are Vegetation □,	, Soil □, or Hydrology	y □, signifi	cantly disturbe	d? Are '	'Normal Circumstances" prese	ent? Yes	⊠ No	o 🗆
Are Vegetation □,	, Soil □, or Hydrology	y □, natura	ally problemation	? (If ne	eded, explain any answers in	Remarks.)		
SUMMARY OF FIN	IDINGS – Attach site map	showing sa	mpling poin	t locations	, transects, important fea	atures, etc.		
Hydrophytic Vegetatio	n Present?	Yes [□ No 🏻					
Hydric Soil Present?		Yes [□ No 🏻	Is the Samp		Yes	☐ No	o 🛛
Wetland Hydrology Pre	esent?	Yes [□ No 🏻	Within a W	, tiana i			
Remarks: WSE2-SF	P2 is located in the buffer to the	e east of the we	tland on the ro	ad fill slope. a	approximately 8 feet north of th	ne southern berm.		
	2 10 1000100 111 1110 201101 10 111	, , , , , , , , , , , , , , , , , , , ,		o.opo, o	pproximatory o root moral or th			
VEGETATION – Us	se scientific names of pla	ants						
Tree Stratum (Plot siz		Absolute	Dominant	Indicator	Dominance Test Workshe	et:		
1)	<u>% Cover</u>	Species?	<u>Status</u>				
					Number of Dominant Species That Are OBL, FACW, or Face			(A)
2								
3			_		Total Number of Dominant Species Across All Strata:	<u>1</u>		(B)
4								
50% =, 20% =			= Total Cove	er	Percent of Dominant Specie That Are OBL, FACW, or FA			(A/B)
Sapling/Shrub Stratun	ii (Piot size: <u>5ivi</u>)							
1					Prevalence Index worksho			
2					Total % Cover		ply by:	
3			_		OBL species	x1 =		
4					FACW species	x2 =		
5					FAC species	x3 =		
50% =, 20% =			= Total Cove	er	FACU species	x4 =		
Herb Stratum (Plot siz	ze: <u>2M</u>)				UPL species	x5 =		
1					Column Totals:	(A)		(B)
2					Prevaler	nce Index = B/A =		
3					Hydrophytic Vegetation Ir	ndicators:		
4					☐ 1 – Rapid Test for Hy	drophytic Vegetation		
5					☐ 2 - Dominance Test is	s >50%		
6					☐ 3 - Prevalence Index i	is ≤3.0 ¹		
7					- 4 - Morphological Ada	aptations ¹ (Provide suppo	ortina	
8					data in Remarks of	r on a separate sheet)		
9					5 - Wetland Non-Vaso	cular Plants ¹		
10					☐ Problematic Hydrophy	ytic Vegetation ¹ (Explain))	
11					, , , , ,		•	
50% =, 20% =			= Total Cove	er	¹ Indicators of hydric soil and		st .	
Woody Vine Stratum (be present, unless disturbed	d or problematic.		
1. Rubus armeniacus	·	<u>100</u>	<u>yes</u>	FACU				
2.	=		122		Hydrophytic			
50% = <u>50</u> , 20% = <u>20</u>		100	= Total Cove		Vegetation	Yes	No	\boxtimes
	-h Ott 0	100	= 10tai 00W	J 1	Present?			
% Bare Ground in Her	-							
Remarks:	The 1988 Region 9 National W	etland Plant Lis	t and 1993 Sup	oplement were	e used for this delineation. Mo	oss covered 100% of the	ground.	

Depth Ma	atrix			Redox	Features		•					
nches) Color (mois	t) '	%	Color (m	oist) %	Type ¹	Loc ²	Texture			Remark	S	
<u>0-17</u> <u>2.5Y 3/2</u>	<u>1</u>	00					Gr Sa Lo	am	•			
	_											
	_			-			-	<u> </u>				
	_							-	•			
			-	-				-	•			
	_			-				-	•			
	_		-									
/pe: C= Concentration, D	 Depletion=	 n. RM=R	educed Ma	trix. CS=Covered o	or Coated Sand	d Grains. ² Lo	cation: PL=	Pore Lining,	M=Matrix			
dric Soil Indicators: (Ap	•							cators for Pro		Hydric S	Soils ³ :	
Histosol (A1)				Sandy Redox (S				2 cm Muck	(A10)	-		
Histic Epipedon (A2)				Stripped Matrix	(S6)			Red Paren	t Material	(TF2)		
Black Histic (A3)				Loamy Mucky N	/lineral (F1) (ex	(cept MLRA 1)		Very Shalle	ow Dark S	urface (T	F12)	
Hydrogen Sulfide (A4)				Loamy Gleyed I	Matrix (F2)			Other (Exp	lain in Rer	narks)		
Depleted Below Dark	Surface (A	A11)		Depleted Matrix	(F3)							
Thick Dark Surface (A	12)			Redox Dark Sur	rface (F6)							
Sandy Mucky Mineral	(S1)			Depleted Dark S	Surface (F7)			cators of hydretelland hydrole				
Sandy Gleyed Matrix	(S4)			Redox Depress	ions (F8)			nless disturbe			ιι,	
strictive Layer (if prese	nt):											
oe:												
pth (inches):						Hydric Soils P	resent?		Yes		No	№
	en historica	ally distu	urbed. Sma	II pieces/fragmenta	ations of variou	s textures/colors	and cobble	S.				
	en historica	ally distu	urbed. Sma	II pieces/fragmenta	ations of variou	s textures/colors	and cobble	s.				
emarks: Soils have bee		ally distu	urbed. Sma	II pieces/fragmenta	ations of variou	s textures/colors	and cobble	s.				
emarks: Soils have bee	eors:				ations of variou	s textures/colors		s. dary Indicato	rs (2 or mo	ore requir	ed)	
YDROLOGY etland Hydrology Indica	eors:					s textures/colors	Secon				ed)	
/DROLOGY etland Hydrology Indica mary Indicators (minimum Surface Water (A1)	ors:		check all tha	at apply)	Leaves (B9)		Secon	dary Indicato	d Leaves (B9)	ed)	
YDROLOGY etland Hydrology Indication (Minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	ors:		check all tha	at apply) Water-Stained I (except MLRA Salt Crust (B11)	_eaves (B9) 1, 2, 4A, and 4		Secon	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt	d Leaves (I	B9)	ed)	
Marks: Soils have been sold by the sold by	ors:		check all tha	at apply) Water-Stained I (except MLRA	_eaves (B9) 1, 2, 4A, and 4		Secon	dary Indicato Water-Stained (MLRA 1, 2, 4	d Leaves (I	B9)	ed)	
"DROLOGY etland Hydrology Indica mary Indicators (minimun Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (E	ors: n of one re		check all the	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertel Hydrogen Sulfic	Leaves (B9) 1, 2, 4A, and 4) Drates (B13) de Odor (C1)	4B)	Secon	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae	B9) B) c (C2) rial Image	,	
PROLOGY Etland Hydrology Indicate mary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	tors: n of one re		check all tha	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along l	1B) Living Roots (C3)	Secon	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D	B9) B) c (C2) rial Image	,	
PROLOGY Etland Hydrology Indication mary Indicators (minimum Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B-	tors: n of one re		check all tha	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re	Leaves (B9) 1, 2, 4A, and 4) orates (B13) de Odor (C1) spheres along l duced Iron (C4	4B) Living Roots (C3)	Secon () () () () () () () () () () () () ()	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3)	B9) B) c (C2) rial Image	,	
POROLOGY Etland Hydrology Indication (Main Marks) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B) Algal Mat or Crust (B) Iron Deposits (B5)	eors: n of one re		check all tha	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along leaduced Iron (C4 duction in Tilled	4B) Living Roots (C3) I) d Soils (C6)	Secon	dary Indicato Water-Stainee (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	d Leaves (I AA, and 4E erns (B10) Vater Table ible on Ae Position (D ard (D3)	B9)) (e (C2) rial Image 2)	ery (C9)	
YDROLOGY etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Fors: n of one re 2) 132) 14)	equired; o	check all the	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along leduced Iron (C4) duction in Tillectes	4B) Living Roots (C3) I) d Soils (C6)	Secon C C C C C C C C C C C C C C C C C C C	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B9) Comparison of the co	ery (C9)	
YDROLOGY etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on	cors: In of one re (2) (32) (4) (B6) (Aerial Image)	equired; o	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along leduced Iron (C4) duction in Tillectes	4B) Living Roots (C3) I) d Soils (C6)	Secon C C C C C C C C C C C C C C C C C C C	dary Indicato Water-Stainee (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	d Leaves (I AA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B9) Comparison of the co	ery (C9)	
YDROLOGY etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated C	cors: In of one re (2) (32) (4) (B6) (Aerial Image)	equired; o	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along leduced Iron (C4) duction in Tillectes	4B) Living Roots (C3) I) d Soils (C6)	Secon C C C C C C C C C C C C C C C C C C C	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B9) Comparison of the co	ery (C9)	
YDROLOGY etland Hydrology Indicationary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B-1) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Celd Observations:	cors: In of one re 132) 14) 156) 168) 169 169 169 169 169 169 169 169 169 169	equired; of	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec Stunted or Stres Other (Explain i	Leaves (B9) 1, 2, 4A, and 4) orates (B13) de Odor (C1) spheres along leaduced Iron (C4 duction in Tillecteses Plants (D4 n Remarks)	4B) Living Roots (C3) I) d Soils (C6)	Secon C C C C C C C C C C C C C C C C C C C	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B9) Comparison of the co	ery (C9)	
POROLOGY Setland Hydrology Indications (Minimum Surface Water (A1)) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B- Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Coeld Observations: Inface Water Present?	cors: n of one rectal (2) (4) (52) (4) (56) (56) (57) (58) (58) (58) (58) (58) (58) (58) (58	equired; of the second	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec Stunted or Stres Other (Explain i	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along I duced Iron (C4 duction in Tilled sses Plants (D2 n Remarks)	4B) Living Roots (C3) I) d Soils (C6)	Secon C C C C C C C C C C C C C C C C C C C	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B9) Comparison of the co	ery (C9)	
YDROLOGY etland Hydrology Indications (Minimum Marks) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B- Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Celd Observations: Inface Water Present? Inturation Present?	stors: In of one reconstruction of one recon	equired; of the second	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec Stunted or Stres Other (Explain i	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along leaduced Iron (C4 duction in Tillectorses Plants (D2 n Remarks) hes):	Living Roots (C3) d Soils (C6) (LRR A)	Secon O V O E	dary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6 Hummocks	B9) B9) Comparison of the co	ery (C9)	lo
YDROLOGY etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B1) Sediment Deposits (B3) Algal Mat or Crust (B2) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Celd Observations: urface Water Present? ater Table Present? atturation Present? includes capillary fringe)	Pors: In of one read: It is a possible of the content of the conte	equired; of the second	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec Stunted or Stres Other (Explain i	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along liduced Iron (C4 duction in Tillectorses Plants (D7 n Remarks) hes): hes):	Living Roots (C3) Did Soils (C6) Di (LRR A) Wei	Secon O V O E	dary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral T Raised Ant M Frost-Heave F	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6 Hummocks	B9) e (C2) rial Image 2) (LRR A	ery (C9)	lo
YDROLOGY etland Hydrology Indications (Minimum Marks) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B- Iron Deposits (B5) Surface Soil Cracks (Inundation Visible on Sparsely Vegetated Celd Observations: Inface Water Present? Inturation Present?	Pors: In of one read: It is a possible of the content of the conte	equired; of the second	check all that	at apply) Water-Stained I (except MLRA Salt Crust (B11) Aquatic Invertet Hydrogen Sulfic Oxidized Rhizos Presence of Re Recent Iron Rec Stunted or Stres Other (Explain i	Leaves (B9) 1, 2, 4A, and 4) prates (B13) de Odor (C1) spheres along liduced Iron (C4 duction in Tillectorses Plants (D7 n Remarks) hes): hes):	Living Roots (C3) Did Soils (C6) Di (LRR A) Wei	Secon O V O E	dary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral T Raised Ant M Frost-Heave F	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6 Hummocks	B9) e (C2) rial Image 2) (LRR A	ery (C9)	lo

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: <u>Seattle/King</u>	Sampling Date:	3/14/12
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSE3-SP1
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ran	ge: <u>S20, T26N, 4E</u>	
Landform (hillslope, terrace, etc.):		Loca	l relief (conc	ave, convex, none): <u>concave</u>	Slope	e (%): <u>1</u>
Subregion (LRR): <u>A</u>	Lat: 47.7	2883384730		Long: <u>-122.32369209500</u>	Datum: I	NAD83
Soil Map Unit Name: <u>Urban land</u>				NWI clas	ssification: PEM	
Are climatic / hydrologic conditions on the site typical for	this time of y	year? Yo	es 🗆	No	in Remarks.)	
Are Vegetation \square , Soil \square , or Hydrology	□, signific	antly disturbed	? Are "l	Normal Circumstances" present	? Yes	⊠ No □
Are Vegetation \square , Soil \square , or Hydrology	□, natural	ly problematic?	? (If ne	eded, explain any answers in Re	emarks.)	
SUMMARY OF FINDINGS – Attach site map sh			locations,	transects, important featu	res, etc.	
Hydrophytic Vegetation Present?	Yes 🛚		Is the Samp	alad Aras		
Hydric Soil Present?	Yes 🛚		within a We		Yes	⊠ No □
Wetland Hydrology Present?	Yes 🛚	No 🗆				
Remarks: WSE3-SP1 is located in a reed canarygrass	s patch at the	north end of the	ne wetland, a	pproximately 5 feet west of the	ence and 15 feet west	of the power
pole.						
VEGETATION – Use scientific names of plants	Absolute	Dominant	Indicator			
<u>Tree Stratum</u> (Plot size: <u>10M</u>)	% Cover	Species?	Status	Dominance Test Worksheet:		
1				Number of Dominant Species	. <u>1</u>	(A)
2				That Are OBL, FACW, or FAC	: -	(7.5)
3				Total Number of Dominant	1	(B)
4				Species Across All Strata:	-	(-)
50% =, 20% =		= Total Cover	-	Percent of Dominant Species	. 100	(A/B)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC	:	(' '
1				Prevalence Index worksheet	:	
2				Total % Cover of:	Multipl	ly by:
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cover	-	FACU species	x4 =	
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
1. Phalaris arundinacea	<u>100</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	_(A)	(B)
2				Prevalence	Index = B/A =	
3				Hydrophytic Vegetation Indi	cators:	
4				☐ 1 – Rapid Test for Hydro	phytic Vegetation	
5				□ 2 - Dominance Test is >	50%	
6				☐ 3 - Prevalence Index is <	<u><</u> 3.0 ¹	
7				4 - Morphological Adapta		rting
8				data in Remarks or or	n a separate sheet)	
9				5 - Wetland Non-Vascula	ar Plants ¹	
10				☐ Problematic Hydrophytic	Vegetation ¹ (Explain)	
11				1		
$50\% = \underline{50}$, $20\% = \underline{20}$	<u>100</u>	= Total Cover	-	Indicators of hydric soil and w be present, unless disturbed o		
Woody Vine Stratum (Plot size: 5M)					<u> </u>	
1. <u>Rubus armeniacus</u>	<u>5</u>	<u>n/a*</u>	<u>FACU</u>			
2				Hydrophytic Vegetation	∕es ⊠	No 🗆
50% = 2.5, 20% = 1	<u>5</u>	= Total Cover	-	Present?	<u>~~</u>	
% Bare Ground in Herb Stratum						
Remarks: *excluded from calculations per chapt						lute coverage
were not considered dominant. The 1988	Region 9 Na	itional Wetland	Plant List an	d 1993 Supplement were used	or this delineation.	

nches) Color	(moist)	%	Colo	r (moist	t) %	Type ¹	Loc ²	Texture		Remarks	3	
	YR 2/1	100				71 -		Si Loam	-			
· <u> </u>	YR 3/1	70						Gr Sa Loam				
10	YR 5/2	18	10Y	′R 5/8	12	<u>C</u>	<u>M</u>	Gr Sa Loam	inclusions			
			_									
			_									
			_									
			_									
	<u>—</u>								 			
ype: C= Concentrat vdric Soil Indicator					, CS=Covered or Co	ated Sand	d Grains. Lo		e Lining, M=Matri		oile ³ ·	
Histosol (A1)	s. (Applicable	, to all L	_	_	Sandy Redox (S5)			_	cm Muck (A10)	ic riyunc c	ons .	
Histic Epipedon	(A2)			_	Stripped Matrix (S6)			_	ted Parent Materia	al (TF2)		
Black Histic (A3				_	Loamy Mucky Miner	al (F1) (ex	cent MI RA 1)	_	ery Shallow Dark	, ,	=12)	
Hydrogen Sulfic				_	Loamy Gleyed Matri		toopt ment i)	_	other (Explain in R	-	12)	
Depleted Below		(A11)	_		Depleted Matrix (F3)				inei (Explaiii iii iv	emarks)		
Thick Dark Surf		(/ () /)	_	_	Redox Dark Surface							
Sandy Mucky M				_	Depleted Dark Surfa			³ Indicato	ors of hydrophytic	vegetation a	and	
Sandy Gleyed N					Redox Depressions				nd hydrology mus		t,	
estrictive Layer (if					TOUCK DOPTOCOTORIO	(1 0)		unies	s disturbed or pro	biemauc.		
ype:												
,, , <u> </u>									Vaa		No	
	ayer has inclus	ions mal	king up 30	0% of th	he layer that are a 10	OYR 5/2 g	Hydric Soils P		Yes 8 redoximorphic fo			
lemarks: Lower la		ions mal	king up 30	O% of th	he layer that are a 10	OYR 5/2 g	_					
emarks: Lower lands	ndicators:					OYR 5/2 g	_	m with 10YR 5/	8 redoximorphic fo	eatures.		
emarks: Lower land the second of the second	ndicators: nimum of one		; check al	II that a	pply)		_	m with 10YR 5/	8 redoximorphic fo	eatures.		
YDROLOGY //etland Hydrology Irimary Indicators (m	ndicators: nimum of one (A1)		; check al	II that a	pply) Water-Stained Leave	es (B9)	ravelly sandy load	Secondary Water	8 redoximorphic for redoximorphic for redoximorphic for redoxing from the second secon	nore require		
YDROLOGY [etland Hydrology Irimary Indicators (m] Surface Water High Water Tal	ndicators: nimum of one (A1) ole (A2)		; check al	II that a	pply) Water-Stained Leave (except MLRA 1, 2,	es (B9)	ravelly sandy load	Secondary Wate	y Indicators (2 or rer-Stained Leaves	nore requires (B9)		
YDROLOGY Vetland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3)	ndicators: nimum of one (A1) ble (A2)		; check al	II that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	es (B9) 4A, and 4	ravelly sandy load	Secondary Wate (ML	y Indicators (2 or re- er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1	nore require ((B9) 4 B) 0)		
YDROLOGY //etland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E	ndicators: nimum of one (A1) ole (A2)		; check al	II that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate:	es (B9) 4A, and 4 s (B13)	ravelly sandy load	Secondary Wate (ML) Drai Dry-	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Ta	nore require (B9) 4B) 0) ble (C2)	ed)	
YDROLOGY //etland Hydrology Irimary Indicators (m	ndicators: nimum of one (A1) ble (A2) st1) ssits (B2)		; check al	II that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc	es (B9) 4A, and 4 s (B13) dor (C1)	ravelly sandy load	Secondary Wate (ML) Drai Dry- Satu	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Ta	nore require (B9) 4B) 0) ble (C2) Aerial Image	ed)	
YDROLOGY /etland Hydrology I rimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Deposits (ndicators: nimum of one (A1) ole (A2) st) sits (B2) B3)		; check al	II that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher	es (B9) 4A, and 4 s (B13) dor (C1) res along	uravelly sandy load 4B) Living Roots (C3)	Secondary Wate (ML) Drai Dry- Satu	y Indicators (2 or re-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Taluration Visible on Amorphic Position (nore require (B9) 4B) 0) ble (C2) Aerial Image	ed)	
IYDROLOGY Vetland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo	ndicators: nimum of one (A1) ole (A2) sit) sits (B2) B3) ust (B4)		; check al	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	es (B9) 4A, and 4 s (B13) dor (C1) res along d d Iron (C4	uravelly sandy load 4B) Living Roots (C3)	Secondary Wate (ML) Drai Dry- Satu Geo	y Indicators (2 or re- er-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Ta gration Visible on A morphic Position (nore require (B9) 4B) 0) ble (C2) Aerial Image	ed)	
IYDROLOGY Vetland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo	ndicators: nimum of one (A1) ole (A2) st1) sits (B2) B3) ust (B4)		; check al	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4)	uravelly sandy load 4B) Living Roots (C3) 1) d Soils (C6)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or re- er-Stained Leaves RA 1, 2, 4A, and a nage Patterns (B1 Season Water Ta tration Visible on A morphic Position (llow Aquitard (D3)	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
IYDROLOGY Vetland Hydrology I rimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (Algal Mat or Cr I ron Deposits (I	ndicators: nimum of one (A1) ble (A2) st1) ssits (B2) B3) ust (B4) 35) acks (B6)	required	; check al	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4) on in Tilleo Plants (D	uravelly sandy load 4B) Living Roots (C3) 1) d Soils (C6)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tauration Visible on Amorphic Position (Ilow Aquitard (D3)Neutral Test (D5 sed Ant Mounds (E	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
YDROLOGY //etland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (Algal Mat or Cr Iron Deposits (I Surface Soil Cr Inundation Visi	ndicators: nimum of one (A1) ble (A2) sit) sits (B2) B3) ust (B4) 35) acks (B6) ble on Aerial Ir	required nagery (I	; check al	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphei Presence of Reduce	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4) on in Tilleo Plants (D	uravelly sandy load 4B) Living Roots (C3) 1) d Soils (C6)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or re- er-Stained Leaves RA 1, 2, 4A, and a nage Patterns (B1 Season Water Ta tration Visible on A morphic Position (llow Aquitard (D3)	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
PYDROLOGY Vetland Hydrology rimary Indicators (many Indicators (man	ndicators: nimum of one (A1) ble (A2) sit) sits (B2) B3) ust (B4) 35) acks (B6) ble on Aerial Ir	required nagery (I	; check al	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4) on in Tilleo Plants (D	uravelly sandy load 4B) Living Roots (C3) 1) d Soils (C6)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tauration Visible on Amorphic Position (Ilow Aquitard (D3)Neutral Test (D5 sed Ant Mounds (E	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
IYDROLOGY Vetland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (Algal Mat or Cr Iron Deposits (I Surface Soil Cr Inundation Visi Sparsely Vegei	ndicators: nimum of one (A1) ole (A2) sits (B2) B3) ust (B4) 35) acks (B6) ole on Aerial Ir ated Concave	required nagery (I Surface	; check al	II that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stresses Other (Explain in Re	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4) on in Tilleo Plants (D	uravelly sandy load 4B) Living Roots (C3) 1) d Soils (C6)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tauration Visible on Amorphic Position (Ilow Aquitard (D3)Neutral Test (D5 sed Ant Mounds (E	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
IYDROLOGY Vetland Hydrology Irimary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Deposits (Algal Mat or Cr Iron Deposits (1 Surface Soil Cr Inundation Visi Sparsely Veget ield Observations:	ndicators: nimum of one (A1) ble (A2) st1) sits (B2) B3) ust (B4) 35) acks (B6) ble on Aerial Ir ated Concave	nagery (I	; check al 37) (B8)	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tillec Plants (D- marks)	uravelly sandy load 4B) Living Roots (C3) 1) d Soils (C6)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tauration Visible on Amorphic Position (Ilow Aquitard (D3)Neutral Test (D5 sed Ant Mounds (E	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
IYDROLOGY //etland Hydrology Irimary Indicators (m Surface Water Tal Saturation (A3) Water Marks (E Sediment Depo Irin Deposits (I Algal Mat or Cr Iron Deposits (I Surface Soil Cr Inundation Visi Sparsely Veget ield Observations: urface Water Present //ater Table Present	ndicators: nimum of one (A1) ble (A2) sits (B2) B3) ust (B4) B35) acks (B6) ble on Aerial Ir ated Concave tt? Yes Yes	nagery (E Surface	; check al	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tillec Plants (D- marks)	4B) Living Roots (C3) I) d Soils (C6) 1) (LRR A)	Secondary Wate (ML) Drai Dry- Satu Geo Shal FAC Rais	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tairation Visible on Amorphic Position (Ilow Aquitard (D3) 1-Neutral Test (D5 sed Ant Mounds (Est-Heave Hummoc	nore requires (B9) 4B) 0) ble (C2) Aerial Image (D2) 0) 06) (LRR A)	ed)	
HYDROLOGY Vetland Hydrology I Primary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (Algal Mat or Cr Iron Deposits (I Surface Soil Cr Inundation Visi Sparsely Veget Vater Table Present?	ndicators: nimum of one (A1) ble (A2) st1) sits (B2) B3) sust (B4) 35) acks (B6) ble on Aerial Ir ated Concave tt? Yes Yes	nagery (I	; check al 37) (B8)	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tillec Plants (D- marks)	4B) Living Roots (C3) 4) d Soils (C6) 1) (LRR A)	Secondary Wate (ML) Drai Dry- Satu Geo Shal	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tairation Visible on Amorphic Position (Ilow Aquitard (D3) 1-Neutral Test (D5 sed Ant Mounds (Est-Heave Hummoc	nore require (B9) 4B) 0) ble (C2) Aerial Image (D2)	ed)	
HYDROLOGY Vetland Hydrology I Primary Indicators (m Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (Algal Mat or Cr Iron Deposits (I Surface Soil Cr Inundation Visi	ndicators: nimum of one (A1) ble (A2) st1) sits (B2) B3) sust (B4) B5) acks (B6) ble on Aerial Ir ated Concave st? Yes Yes Yes ge)	nagery (I Surface	; check al 37) (B8) No No No	that a	pply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reducet Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along in Tiller Plants (Drimarks) 5 surface	4B) Living Roots (C3) d Soils (C6) 1) (LRR A)	Secondary Wate (ML) Drai Dry- Satu Geo Shal FAC Rais	y Indicators (2 or rer-Stained Leaves RA 1, 2, 4A, and anage Patterns (B1 Season Water Tairation Visible on Amorphic Position (Ilow Aquitard (D3) 1-Neutral Test (D5 sed Ant Mounds (Est-Heave Hummoc	nore requires (B9) 4B) 0) ble (C2) Aerial Image (D2) 0) 06) (LRR A)	ed)	

Project Site:	Lynnwood Link	Extension_					City/Cou	nty:	Seat	ttle/King		Samplin	g Date:	3/14/	12	
Applicant/Owner:	Sound Transit									Sta	ate: WA	Samplin	g Point:	WSE	3-SP	2
Investigator(s):	M. Maynard, C.	Worsley							Se	ection, To	wnship, Ran	ge: <u>S20,</u>	T26N, 4E			
Landform (hillslope, te	errace, etc.):					Loca	al relief (con	cave,	, conve	ex, none):			Slope	e (%):		_
Subregion (LRR):	<u>A</u>		Lat:	47.72	87216	7380			Long:	-122.323	77768800		Datum:	NAD83		
Soil Map Unit Name:	<u>Urban land</u>										NWI clas	sification:	<u>upland</u>			
Are climatic / hydrolog	gic conditions on t	he site typical for	this time	e of ye	ear?	Y	es []	No	☐ (If	no, explain i	n Remark	s.)			
Are Vegetation	, Soil □,	or Hydrology	□, sig		-			"Nori	mal Ci	rcumstand	es" present?	?	Yes	\boxtimes	No	
Are Vegetation	, Soil □,	or Hydrology	□, na	turally	probl	ematic	? (If n	eede	d, expl	lain any aı	nswers in Re	emarks.)				
SUMMARY OF FIN	IDINGS – Attac	ch site map sh	nowing	sam	pling	point	locations	s, tra	nsect	ts, impo	rtant featu	res, etc.				
Hydrophytic Vegetation	on Present?		Yes		No	\boxtimes			_							
Hydric Soil Present?			Yes		No	\boxtimes	Is the Sam within a W						Yes		No	\boxtimes
Wetland Hydrology Pr	resent?		Yes		No											
Remarks: The samp	ole plot is located	west of the wetla	ınd in Hir	malay	an bla	ckberr	y, approxima	ately :	50 feet	southwes	st of power p	ole and 2	0 feet west o	f the fer	ice.	
VEGETATION - U	se scientific na	ames of plants														
Tree Stratum (Plot siz	ze: <u>10M</u>)		Absolut % Cove		Domir Specie		Indicator Status	Do	omina	nce Test	Worksheet:					
1. Crataegus monog	<u>ıyna</u>		<u>20</u>		<u>yes</u>		FACU	Nı	umber	of Domina	ant Species					(4)
2. ornamental maple	<u>e</u>		<u>15</u>		<u>n/a*</u>		NL (UPL)	Tł	hat Are	OBL, FA	CW, or FAC	:	<u>0</u>			(A)
3								To	otal Nu	mber of D	ominant		2			(B)
4								Sp	pecies	Across Al	l Strata:		<u>2</u>			(B)
50% = 17.5, 20% = 7			<u>35</u>		= Tota	al Cove	r				ant Species		<u>0</u>			(A/B)
Sapling/Shrub Stratur	n (Plot size: <u>5M</u>)							Tł	hat Are	OBL, FA	CW, or FAC	:	<u> </u>			(700)
Rubus spectabilis	•		<u>5</u>		<u>no</u>		FAC	Pr	revaler	nce Index	worksheet	:				
2										Total	% Cover of:		Multip	ly by:		
3									BL spe				x1 =		_	
4										pecies			x2 =		_	
5							—		AC spe				x3 =	-	_	
50% = 2.5, 20% = 1			<u>5</u>		= Tota	al Cove	r		ACU sp				x4 =		_	
Herb Stratum (Plot siz	ze: <u>2M</u>)							UI	PL spe	cies			x5 =		-	
1								Co	olumn '	Totals:	-	(A)			(B	.)
2											Prevalence	Index = B	3/A =			
3											etation Indi					
4								l	_		est for Hydro		getation			
5									_	Dominan	ce Test is >5	50%				
6									3 -	Prevalen	ce Index is <	3.0 ¹				
7] 4-				ovide suppoi	ting		
8								_			emarks or or		ile sneet)			
9										Wetland	Non-Vascula	ar Plants				
10									J Pro	oblematic	Hydrophytic	Vegetatio	on ¹ (Explain)			
11								1lr	ndicato	rs of hydr	ic soil and w	etland hvo	drology must			
50% =, 20% =					= 1 Ota	al Cove	r				disturbed o					
Woody Vine Stratum			400				E4011									
1. Rubus armeniacu	<u>'S</u>		<u>100</u>		<u>yes</u>		<u>FACU</u>	Н	ydropł	hvtic						
2			400					-	egetati	-	Υ	es		No		\boxtimes
50% = <u>50</u> , 20% = <u>20</u>			<u>100</u>		= 1018	al Cove	·r	Pr	resent	?						
% Bare Ground in He	·															
	Exluded from cald d 1993 Suppleme					osolute	coverage w	ere n	not con	sidered do	ominant. The	e 1988 Re	gion 9 Natior	nal Wetl	and F	Plant

Depth	Matrix				Redox Fea	tures		_					
nches) Color (mo	ist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture			Remark	S	
<u>0-6</u> <u>10YR 3</u>	<u>/1</u>	<u>100</u>						Gr Sa Loa	<u>m</u>				
<u>6-18</u>			_					Gr Sand	<u>Fill</u>				
			_	_									
			_										
				_									
									· · · · ·				
<pre>/pe: C= Concentration, /dric Soil Indicators: (</pre>						pated Sand	Grains. L	ocation: PL=F	ators for Pro		Hydric 9	coile ³ :	
Histosol (A1)	фрисавіе	to all Li	NNS, UIIIE		ndy Redox (S5)				2 cm Muck		riyuric c	ouis .	
Histic Epipedon (A2					pped Matrix (S6)				Red Parent		(TF2)		
Black Histic (A3)	,				my Mucky Miner		cent MI R A 1)		Very Shallo	`	,	F12)	
Hydrogen Sulfide (A	4)				my Gleyed Matri		.оор: ш2.т.,		Other (Exp		-	,	
Depleted Below Da	•	(A11)			oleted Matrix (F3)			_	Othor (Exp		namoj		
Thick Dark Surface		(****)			dox Dark Surface								
Sandy Mucky Miner	. ,				oleted Dark Surfa			³ Indica	ators of hydro	ophytic ve	getation	and	
Sandy Gleyed Matri					dox Depressions				tland hydrold less disturbe			nt,	
strictive Layer (if pres	. ,					,		un	coo diotarbo	u or probic	omano.		
pe:	•												
pth (inches):							Hydric Soils I	Present?		Yes		No	Σ
marks: Cobbles in t	ne lower la	yer											
YDROLOGY		yer											
YDROLOGY etland Hydrology Indic	ators:		about all	that and				Connection				o dl)	
YDROLOGY etland Hydrology India imary Indicators (minim	ators:					(00)			ary Indicator			ed)	
YDROLOGY etland Hydrology Indic imary Indicators (minim Surface Water (A1)	ators: um of one r		check all] Wa	ter-Stained Leav	` '	(D)	□ W	ater-Stained	Leaves (E	B9)	ed)	
PDROLOGY etland Hydrology Indic mary Indicators (minim Surface Water (A1) High Water Table (ators: um of one r] Wa	ter-Stained Leav	` '	1B)	□ W	/ater-Stained	Leaves (E	B9)	ed)	
PDROLOGY Etland Hydrology Indice mary Indicators (minime) Surface Water (A1) High Water Table (Saturation (A3)	ators: um of one r] Wa (ex	ter-Stained Leav cept MLRA 1, 2, t Crust (B11)	, 4A, and 4	#B)	W (N	/ater-Stained /ILRA 1, 2, 4 rainage Patte	Leaves (E A, and 4B erns (B10)	B9)	ed)	
'DROLOGY Intland Hydrology Indice Mary Indicators (minime Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1)	ators: um of one r] Wa (ex] Sal] Aqu	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate	, 4A , and 4	IB)	W (N D	/ater-Stained /ILRA 1, 2, 4 rainage Patter ry-Season W	Leaves (EA, and 4B) erns (B10) dater Table	B9) B) e (C2)	·	
PROLOGY etland Hydrology India mary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits	ators: um of one r			Wa (ex Sal Aqu	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide O	, 4A , and 4 es (B13) dor (C1)		□ W (N □ D □ D □ Sa	//ater-Stained //LRA 1, 2, 4 rainage Patter ry-Season Waturation Vis	I Leaves (EA, and 4B) erns (B10) ater Table	B9) B) C(C2) C(C3) C(C3)	·	
PROLOGY etland Hydrology Indic mary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	ators: um of one r A2)			(ex (ex) Sal) Aqu] Hyo] Oxi	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Od dized Rhizosphe	es (B13) dor (C1) eres along	Living Roots (C3	W (N D D S S C C C C C C C C	//ater-Stained //LRA 1, 2, 4 rainage Patter ry-Season Waturation Vis eomorphic F	Leaves (EA, and 4B) erns (B10) dater Table ible on Ael Position (D2)	B9) B) C(C2) C(C3) C(C3)	·	
POROLOGY etland Hydrology India imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (ators: um of one r A2)			(ex (ex) Sall Aqu Hyo	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce	es (B13) dor (C1) eres along led Iron (C4	Living Roots (C3	W (N (N) D S S S G S S G S S S	Vater-Stained ILRA 1, 2, 4 rainage Pattr ry-Season Waturation Vis eomorphic F hallow Aquita	A, and 4B erns (B10) dater Table ible on Aer Position (D2 ard (D3)	B9) B) C(C2) C(C3) C(C3)	·	
YDROLOGY etland Hydrology Indic imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5)	ators: um of one r A2) (B2) B4)			Wa (ex (ex) Sali Aqu) Hyc) Oxi] Pre] Rec	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti	es (B13) dor (C1) eres along led Iron (C4	Living Roots (C3	W (N (N D D S S S S C S C S C S C C	Acter-Stained ALRA 1, 2, 4 rainage Patte ry-Season Waturation Vis eomorphic F hallow Aquita AC-Neutral 1	Leaves (E.A., and 4B erns (B10) / ater Table ible on Aei Position (D2 ard (D3)	B9) (C2) (C3) (C4)	ery (C9)	
YDROLOGY etland Hydrology India imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (I Iron Deposits (B5) Surface Soil Cracks	ators: um of one r A2) (B2) (B4) (B6)	required;		(ex (ex) (ex) (ex) (ex) (ex) (ex) (ex) (ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D	Living Roots (C3	W (N (N D D S S C S C C C C C C	Vater-Stained Vater-Stained Vater 1, 2, 4 rainage Pattr ry-Season Waturation Vis eomorphic F hallow Aquitt AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Later Table ible on Aer Position (D2) ard (D3) Fest (D5) bunds (D6)	B9) B) C(C2) rial Image (2)	ery (C9)	
PDROLOGY etland Hydrology India imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of	ators: um of one r A2) (B2) B4) (B6) n Aerial Im	required;	C C C C C C C C C C C C C C C C C C C	(ex (ex) (ex) (ex) (ex) (ex) (ex) (ex) (ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D	Living Roots (C3	W (N (N D D S S C S C C C C C C	Acter-Stained ALRA 1, 2, 4 rainage Patte ry-Season Waturation Vis eomorphic F hallow Aquita AC-Neutral 1	Leaves (E.A., and 4B erns (B10) Later Table ible on Aer Position (D2) ard (D3) Fest (D5) punds (D6)	B9) B) C(C2) rial Image (2)	ery (C9)	
POROLOGY etland Hydrology India imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated	ators: um of one r A2) (B2) B4) (B6) n Aerial Im	required;	C C C C C C C C C C C C C C C C C C C	(ex (ex) (ex) (ex) (ex) (ex) (ex) (ex) (ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D	Living Roots (C3	W (N (N D D S S C S C C C C C C	Vater-Stained Vater-Stained Vater 1, 2, 4 rainage Pattr ry-Season Waturation Vis eomorphic F hallow Aquitt AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Later Table ible on Aer Position (D2) ard (D3) Fest (D5) punds (D6)	B9) B) C(C2) rial Image (2)	ery (C9)	
POROLOGY Setland Hydrology India mary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated	ators: um of one r A2) (B2) B4) (B6) n Aerial Im	required;	C C C C C C C C C C C C C C C C C C C	(ex (ex) (ex) (ex) (ex) (ex) (ex) (ex) (ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D2	Living Roots (C3	W (N (N D D S S C S C C C C C C	Vater-Stained Vater-Stained Vater 1, 2, 4 rainage Pattr ry-Season Waturation Vis eomorphic F hallow Aquitt AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Later Table ible on Aer Position (D2) ard (D3) Fest (D5) punds (D6)	B9) B) C(C2) rial Image (2)	ery (C9)	
PDROLOGY etland Hydrology Indic imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated eld Observations: Irface Water Present?	ators: um of one r A2) (B2) B4) (B6) n Aerial Im Concave S	required; nagery (B Surface (C C C C C C C C C C C C C C C C C C C	Wa (ex (ex Aqu Hyc Oxi Pre Rec Stu	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti nted or Stresses er (Explain in Re	es (B13) dor (C1) eres along led Iron (C4 fon in Tilled Plants (D' emarks)	Living Roots (C3	W (N (N D D S S C S C C C C C C	Vater-Stained Vater-Stained Vater 1, 2, 4 rainage Pattr ry-Season Waturation Vis eomorphic F hallow Aquitt AC-Neutral T aised Ant Mo	Leaves (E.A., and 4B erns (B10) Later Table ible on Aer Position (D2) ard (D3) Fest (D5) punds (D6)	B9) B) C(C2) rial Image (2)	ery (C9)	
YDROLOGY etland Hydrology India imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible (Sparsely Vegetated eld Observations: urface Water Present? atter Table Present?	ators: um of one r A2) (B2) B4) (B6) n Aerial Im Concave S	required;	[] [] [] [] [] [] [] [] [] []	Wa (ex (ex] Sal] Aqu] Hyc] Oxi] Pre] Rec] Stu] Oth	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses er (Explain in Re	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D	Living Roots (C3 2) d Soils (C6) 1) (LRR A)	W (N (N D D S S C S C C C C C C	Vater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic F hallow Aquita AC-Neutral T aised Ant Mo rost-Heave F	d Leaves (E.A., and 4B erns (B10) dater Table ible on Aei Position (D: ard (D3) Fest (D5) bunds (D6) dummocks	B9) B) C(C2) rial Image (2)	ery (C9)	lo
YDROLOGY etland Hydrology Indic imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated eld Observations: urface Water Present? ater Table Present? sturation Present?	ators: um of one r A2) (B2) B4) (B6) n Aerial Im Concave S Yes Yes	required;	C	Wa (ex (ex] Sal] Aqu] Hyc] Oxi] Pre] Rec] Stu] Oth	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses er (Explain in Re Depth (inches): Depth (inches):	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D* emarks)	Living Roots (C3 d) d Soils (C6) 1) (LRR A)	W (N	Vater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic F hallow Aquita AC-Neutral T aised Ant Mo rost-Heave F	d Leaves (E.A., and 4B erns (B10) dater Table ible on Aei Position (D: ard (D3) Fest (D5) bunds (D6) dummocks	B9) e (C2) rial Image 2) (LRR A	ery (C9)	lo
YDROLOGY etland Hydrology India imary Indicators (minim Surface Water (A1) High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of	ators: um of one r A2) (B2) B4) (B6) n Aerial Im Concave S Yes Yes	required;	C	Wa (ex (ex] Sal] Aqu] Hyc] Oxi] Pre] Rec] Stu] Oth	ter-Stained Leav cept MLRA 1, 2, t Crust (B11) uatic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses er (Explain in Re Depth (inches): Depth (inches):	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D* emarks)	Living Roots (C3 d) d Soils (C6) 1) (LRR A)	W (N	Vater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic F hallow Aquita AC-Neutral T aised Ant Mo rost-Heave F	d Leaves (E.A., and 4B erns (B10) dater Table ible on Aei Position (D: ard (D3) Fest (D5) bunds (D6) dummocks	B9) e (C2) rial Image 2) (LRR A	ery (C9)	lo

Project Site:	Lynnwood Link Extension			City/Coun	ty: <u>Seattle/Kinig</u>	Sampling Date:	3/14/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSE4-SP1
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Ran	ge: <u>S20, T26N, R4E</u>	
Landform (hillslope, te	errace, etc.): bottom of linear of	lepression	Loca	al relief (conc	ave, convex, none): none	Slope	e (%):
Subregion (LRR):	<u>A</u>	Lat: <u>47.7</u>	2905088520		Long: <u>-122.32339466800</u>	Datum: I	NAD83
Soil Map Unit Name:	<u>Urban land</u>				NWI clas	ssification: PFO	
Are climatic / hydrolog	ic conditions on the site typical fo	r this time of	year? Y	es 🛚	No 🗌 (If no, explain i	n Remarks.)	
Are Vegetation \square ,			antly disturbed		Normal Circumstances" present?	? Yes	⊠ No □
Are Vegetation □,	, Soil □, or Hydrology	☐, natural	ly problematic	? (If ne	eded, explain any answers in Re	emarks.)	
0							
	IDINGS – Attach site map s		· · ·	locations,	transects, important featu	res, etc.	
Hydrophytic Vegetatio	n Present?	Yes ⊠		Is the Samp	oled Area	Vaa	M No O
Hydric Soil Present?	aaant0	Yes ⊠		within a We	tland?	Yes	⊠ No □
Wetland Hydrology Pro		Yes 🛚	l				
	ole plot is located on the east side 2 western redcedars. Approxima					nd 25 feet west of the g	Jolf course.
		•					
VEGETATION LIE	so scientific names of plant						
Tree Stratum (Plot siz	se scientific names of plant	Absolute	Dominant	Indicator	Dominance Test Worksheet:		
	e. <u>1014)</u>	% Cover	Species?	Status 51.0	Dominance rest worksneet.		
1. <u>Thuja plicata</u>		<u>90</u>	<u>ves</u>	FAC	Number of Dominant Species That Are OBL, FACW, or FAC	<u>2</u>	(A)
2. <u>Ilex aquifolium</u>		<u>2</u>	<u>no</u>	NL (UPL)	That Are ODL, I AOW, OI I AO.	•	
3 4.					Total Number of Dominant Species Across All Strata:	<u>2</u>	(B)
50% = <u>46,</u> 20% = <u>18.4</u>	1	92	= Total Cove	, 	•		
Sapling/Shrub Stratum		<u>32</u>	= Total Cove	ı	Percent of Dominant Species That Are OBL, FACW, or FAC	: <u>100</u>	(A/B)
Rubus spectabilis	_	<u>2</u>	no	FAC	Prevalence Index worksheet	•	
2		=	<u>110</u>	1710	Total % Cover of:		lv bv:
3					OBL species	x1 =	<u>., ~ , .</u>
4					FACW species	x2 =	
5			<u> </u>		FAC species	x3 =	<u> </u>
50% = <u>1</u> , 20% = <u>0.4</u>		2	= Total Cove	r	FACU species	x4 =	
Herb Stratum (Plot siz	ze: 2M)				UPL species	x5 =	
Athyrium filix femin	•	20	<u>yes</u>	FAC	Column Totals:	(A)	(B)
Equisetum telmate		<u></u> 5	no	FACW		! Index = B/A =	(-/
3	-	-			Hydrophytic Vegetation India		_
4.					☐ 1 – Rapid Test for Hydro		
5					2 - Dominance Test is >5	· ·	
6.					☐ 3 - Prevalence Index is <	-3 0 ¹	
7					4 - Morphological Adapta	_	rtina
8					data in Remarks or or	n a separate sheet)	ung
9					☐ 5 - Wetland Non-Vascula	ar Plants ¹	
10.					☐ Problematic Hydrophytic		
11		· <u></u>				regetation (Explain)	
50% = <u>12.5</u> , 20% = <u>5</u>		<u>25</u>	= Total Cove	 r	¹ Indicators of hydric soil and w		
Woody Vine Stratum ((Plot size: 5M)	_			be present, unless disturbed or	r problematic.	
1. Hedera helix	·	<u>5</u>	<u>no</u>	NL (UPL)			
2					Hydrophytic	_	_
50% = <u>2.5</u> , 20% = <u>1</u>		<u></u> <u>5</u>	= Total Cove	 r	Vegetation Y Present?	′es ⊠	No 🗆
— — — — — — — — — — — — — — — — — — —	rb Stratum _				i resciiti		
	Species with 5% or less absolute	coverage wer	e not considere	ed dominant	The 1988 Region 9 National W	etland Plant List and 1	993 Supplement
i itelliains.	sed for this delineation.						

Depth	Matrix				Redox Feat	tures		_					
nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	<u> </u>		Remark	s	
<u>0-5</u>	10YR 2/1	<u>100</u>		_				Mucky	<u>Lo</u>	-			
<u>5-11</u>	10Y 4/1	<u>92</u>	<u>10YR</u>	4/3	<u>8</u>			Fine Sa	Lo	-			
<u>11-18</u>	<u>5Y 3/1</u>	<u>100</u>	_	_				Gr Sa Lo	oam	-			
				_						-			
			_	_						-			
				_						-			
				_						-			
				_									
	entration, D=Depl					ated Sand	Grains. L		=Pore Lining,		Usalaia (2-11-3.	
Histosol (A	cators: (Applica	DIE TO AII L	-RRS, unies		dy Redox (S5)				cators for Pro 2 cm Muck		nyaric s	oons :	
Histic Epip	-				ped Matrix (S6)				Red Paren		(TE2)		
Black Histi				-	ny Mucky Minera		(cent MI R A 1)		Very Shall		` '	F12)	
_	Sulfide (A4)				ny Gleyed Matri		toopt in Livia i)		Other (Exp		-	1 12)	
	Below Dark Surfa	ice (A11)			eted Matrix (F3)				Other (EX	nam m reci	nano)		
	Surface (A12)	00 (/ (11)		-	ox Dark Surface								
	cky Mineral (S1)				eted Dark Surfa			³ Ind	icators of hydi	rophytic ve	getation	and	
_	yed Matrix (S4)			•	ox Depressions				vetland hydrol ınless disturbe			nt,	
	er (if present):				· ·	,			ariicoo diotarbi	ou or probl	cinatio.		
ype:													
epth (inches):							Hydric Soils I	Present?		Yes	\boxtimes	No	
emarks: Pa	rtially decompose	ed leaf litte	r over soil.	Organic I	enses or layering	g, especia	ally at 11 inches.	Inclusions	of silt loam in	lower hori:	zon (5Y 2	2/1)	
YDROLOGY			r over soil.	Organic I	enses or layerinç	g, especia	ally at 11 inches.	Inclusions	of silt loam in	lower hori:	zon (5Y 2	2/1)	
YDROLOGY /etland Hydrol	ogy Indicators:					g, especia	ally at 11 inches.						
YDROLOGY /etland Hydrol rimary Indicator	ogy Indicators: rs (minimum of o		t; check all t	hat apply)		ally at 11 inches.	Secon	ndary Indicato	rs (2 or ma	ore requir		
YDROLOGY fetland Hydroli rimary Indicator Surface W	ogy Indicators: rs (minimum of o			hat apply) er-Stained Leave	es (B9)		Seco	ndary Indicato Water-Staine	rs (2 or mo	ore requir B9)		
YDROLOGY letland Hydrolorimary Indicator Surface W High Wate	ogy Indicators: rs (minimum of o		d; check all t	hat apply) er-Stained Leave ept MLRA 1, 2,	es (B9)		Secon	ndary Indicato Water-Stained	rs (2 or mo d Leaves (1A, and 4E	ore requir B9)		
YDROLOGY letland Hydrolorimary Indicator Surface W High Wate Saturation	ogy Indicators: rs (minimum of o rater (A1) r Table (A2) (A3)		d; check all t	hat apply) er-Stained Leave ept MLRA 1, 2, Crust (B11)	es (B9) 4 A, and 4		Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Pati	rs (2 or mo d Leaves (1A, and 4E terns (B10)	ore requir B9)		
YDROLOGY Tetland Hydrologimary Indicator Surface W High Wate Saturation Water Mar	ogy Indicators: rs (minimum of o rater (A1) re Table (A2) (A3) rks (B1)		d; check all t	hat apply Wate (exc: Salt (er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates	es (B9) 4A, and 4		Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V	rs (2 or mo d Leaves (1A, and 4E terns (B10) Vater Tabl	ore requir B9) 3)) e (C2)	red)	
YDROLOGY etland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mai Sediment	ogy Indicators: Ts (minimum of o later (A1) Table (A2) (A3) Tks (B1) Deposits (B2)		d; check all t	hat apply Wate (exce Salt Aqua Hydr	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc	es (B9) 4A, and s (B13) dor (C1)	4B)	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	rs (2 or mo d Leaves (1A, and 4E terns (B10) Vater Tabl sible on Ae	ore requir B9) 3)) e (C2) rial Imag	red)	
YDROLOGY Tetland Hydrology Tetland Hydrology Tetland Hydrology Tetland Hydrology Tetland High Water Tetland Saturation Water Mail Sediment Drift Depo	ogy Indicators: rs (minimum of o fater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3)		d; check all t	hat apply Wate (exce Salt u Aqua Hydr Oxidi	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher	es (B9) 4A, and 4 5 6 6 7 9 9 1 1 1 1 1 1	4B) Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	rs (2 or mo d Leaves (4A, and 4E terns (B10) Vater Tabl Sible on Ae Position (D	ore requir B9) 3)) e (C2) rial Imag	red)	
YDROLOGY Vetland Hydrology rimary Indicator Surface W High Wate Saturation Water Man Sediment Drift Depo Algal Mate	ogy Indicators: rs (minimum of o fater (A1) ra Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)		d; check all t	hat apply Wate (exce Salt of Aqua Hydr Oxidi	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4	4B) Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Pate Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	rs (2 or model Leaves (14A, and 4E) terns (B10) Vater Table sible on Ae Position (D ard (D3)	ore requir B9) 3)) e (C2) rial Imag	red)	
YDROLOGY /etland Hydrole rimary Indicator Surface W High Wate Saturation Water Mai Sediment Drift Depo Algal Mate	ogy Indicators: ss (minimum of o rater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)		d; check all t	hat apply Wate (exce Salt of Aqua Hydr Oxidi Press Rece	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3	Secon	mdary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	rs (2 or model of the control of the	ore requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
WDROLOGY Vetland Hydrology Surface W High Water Saturation Water Mai Sediment Drift Depo Algal Mater Iron Depos	ogy Indicators: rs (minimum of o fater (A1) ra Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)	ne required	d; check all t	hat apply Wate (exce Salt (Aqua Hydr Oxidi Pres Rece Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Pate Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	rs (2 or mod d Leaves (4A, and 4E terns (B10) Vater Tabl sible on Ae Position (D ard (D3) Test (D5) ounds (D6	Dre requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
VPDROLOGY /etland Hydrology imary Indicator Surface W High Water Saturation Water Mai Sediment Drift Depo Algal Mater Iron Depose Surface Sed Inundation	ogy Indicators: The second of	ne required	d; check all t	hat apply Wate (exce Salt (Aqua Hydr Oxidi Pres Rece Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (4A, and 4E terns (B10) Vater Tabl sible on Ae Position (D ard (D3) Test (D5) ounds (D6	Dre requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLOGY Vetland Hydrology Indicator Surface W Saturation Water Mai Sediment Drift Depos Iron Depos Surface So Inundation Sparsely N	ogy Indicators: rs (minimum of o fater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aeria /egetated Conca	ne required	d; check all t	hat apply Wate (exce Salt (Aqua Hydr Oxidi Pres Rece Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (4A, and 4E terns (B10) Vater Tabl sible on Ae Position (D ard (D3) Test (D5) ounds (D6	Dre requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLOGY Vetland Hydrology rimary Indicator Surface W High Water Sediment Sediment Drift Depo Algal Mater I ron Depos Surface Sediment Inundation Sparsely V Seld Observation	ogy Indicators: s (minimum of o fater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria fegetated Conca	ne required	d; check all t	hat apply Wate (excell) Salt of Aqual Hydr Oxidi Presi Recell Stuni	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (4A, and 4E terns (B10) Vater Tabl sible on Ae Position (D ard (D3) Test (D5) ounds (D6	Dre requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
YDROLOGY Vetland Hydrology Indicator Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mater Iron Depose Surface So Inundation Sparsely Veteld Observation	ogy Indicators: rs (minimum of o later (A1) rater (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria legetated Conca	ne required	d; check all t	hat apply Wate (excell) Salt (Aqual Hydr Oxid) Presi Rece Stuni	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Rei	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D: marks)	Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (4A, and 4E terns (B10) Vater Tabl sible on Ae Position (D ard (D3) Test (D5) ounds (D6	Dre requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	
IYDROLOGY Vetland Hydrolov rimary Indicator Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mater Iron Depose Surface Sed	ogy Indicators: rs (minimum of o later (A1) rater (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria legetated Conca ons: resent? Ye sent? Ye nt?	ne required	d; check all t	hat apply Wate (excell) Salt of Aqual of Aqu	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductic ted or Stresses er (Explain in Rei	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D: marks)	Living Roots (C3 i) d Soils (C6) 1) (LRR A)	Second Control of the	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (44A, and 4E terns (B10)) Vater Tablesible on Ae Position (D3) Test (D5) ounds (D6 Hummocks	Dre requir B9) 3)) e (C2) rial Imag 2)	ery (C9)	No
WDROLOGY Vetland Hydrology Surface W High Water Saturation Water Mai Sediment Drift Depo Iron Deposition Surface Scale Inundation Sparsely Veter Project Water Project Water Project Water Project Water Project Water Table Presencies capillar	ogy Indicators: rs (minimum of o later (A1) rater (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria legetated Conca ons: resent? Ye sent? Ye nt?	ne required al Imagery (lave Surface es alaces alace	d; check all t	hat apply Wate (excell) Salt (Aqua Hydr Oxid Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductic ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks) 11 surface	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Second Control of the	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave I	rs (2 or mod Leaves (44A, and 4E terns (B10)) Vater Tablesible on Ae Position (D3) Test (D5) ounds (D6 Hummocks	ore requir B9) 3)) e (C2) rial Imag 2)) (LRR A	ery (C9)	10
IYDROLOGY Vetland Hydrology Irimary Indicator Surface W High Water Saturation Water Mai Sediment Drift Depo Inon Deposition Surface So Inundation Sparsely \ ield Observation urface Water Presenctudes capillar	ogy Indicators: rs (minimum of o rater (A1) rater (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria resent? resent? ye sent? ye ring ye ringe)	ne required al Imagery (lave Surface es alaces alace	d; check all t	hat apply Wate (excell) Salt (Aqua Hydr Oxid Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductic ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks) 11 surface	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Second Control of the	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave I	rs (2 or mod Leaves (44A, and 4E terns (B10)) Vater Tablesible on Ae Position (D3) Test (D5) ounds (D6 Hummocks	ore requir B9) 3)) e (C2) rial Imag 2)) (LRR A	ery (C9)	

Project Site:	Lynnwood Link	Extension					City/Cou	nty:	Seat	ttle/King		Sampli	ng Date:	3/14	4/12	
Applicant/Owner:	Sound Transit									St	ate: WA	Sampli	ng Point:	WS	E4-SI	<u> 22</u>
Investigator(s):	M. Maynard, C	. Worsley							Se	ection, To	ownship, Rar	nge: <u>S20</u>), T26N, R4E			
Landform (hillslope, te	rrace, etc.):					Loca	al relief (con	cave, c	conve	ex, none):	none		Slope	e (%):	<u>1</u>	
Subregion (LRR):	<u>A</u>		Lat:	<u>47.72</u>	291003	<u> 87860</u>		L	.ong:	-122.323	329964000		Datum: I	NAD8	<u>3</u>	
Soil Map Unit Name:	Urban land										NW I cla	ssification	n: <u>Upland</u>			
Are climatic / hydrolog	ic conditions on	the site typical fo	r this time	e of y	ear?	Y	′es □	1 [No	□ (If	no, explain	in Remar	ks.)			
Are Vegetation □,	Soil □,	or Hydrology	□, sig	gnifica	antly di	sturbed	d? Are	"Norm	nal Cir	rcumstan	ces" present	1?	Yes	\boxtimes	No	
Are Vegetation □,	Soil □,	or Hydrology	□, na	turall	y probl	lematic	? (If n	eeded	l, expl	lain any a	nswers in R	emarks.)				
SUMMARY OF FIN	IDINGS – Atta	ch site map s	howing	sam	pling	point	locations	, tran	rsect	ts, impo	rtant feati	ures, etc	: .			
Hydrophytic Vegetatio	n Present?		Yes		No	\boxtimes										
Hydric Soil Present?			Yes		No	\boxtimes	Is the Sam within a W						Yes		No	\boxtimes
Wetland Hydrology Pro	esent?		Yes		No	\boxtimes										
Remarks: The samp	ole plot is located	d approximately 1	8 feet ea	st of \	NSE4-	-SP1 ar	nd approxim	ately 1	I0 fee	t west of	the fence.					
	•							-								
VEGETATION - Us	se scientific n	ames of plant	s													
Tree Stratum (Plot siz	e: <u>10M</u>)		Absolut % Cove		Domii Speci		Indicator Status	Doi	mina	nce Test	Worksheet	:				
1. <u>Thuja plicata</u>			45	<u> </u>	<u>yes</u>	<u> </u>	FAC	Nur	mher	of Domin	ant Species					
2											CW, or FAC	:	<u>1</u>			(A)
3.								Tot	tal Nu	ımher of [Dominant					
4										Across A			<u>3</u>			(B)
50% = <u>22.5</u> , 20% = <u>9</u>			<u>45</u>		= Tota	al Cove	r	Per	rcent (of Domin	ant Species					
Sapling/Shrub Stratun	n (Plot size: <u>5M</u>)										CW, or FAC	:	<u>33</u>			(A/B)
1. Sambucus racemo	<u>osa</u>		<u>10</u>		<u>yes</u>		<u>FACU</u>	Pre	evaler	nce Inde	x workshee	t:				
2. Prunus sp. (laurel	<u>)</u>		<u>2</u>		<u>no</u>					Tota	I % Cover of	<u>:</u>	Multipl	y by:		
3								ОВ	L spe	ecies			x1 =			
4								FAG	CW s	pecies			x2 =			
5								FAG	C spe	ecies			x3 =			
50% = <u>6</u> , 20% = <u>2.4</u>			<u>12</u>		= Tota	al Cove	er	FAG	CU sp	pecies			x4 =			
Herb Stratum (Plot siz	e: <u>2M</u>)							UPI	L spe	cies			x5 =			
1								Col	lumn [.]	Totals:		_(A)			(I	В)
2											Prevalence		B/A =			•
3								Hyd	dropł	hytic Veg	etation Ind		<u> </u>			
4.									-	-	est for Hydro		egetation			
5			<u> </u>							-	nce Test is >		J			
6			<u> </u>						3.	Prevaler	nce Index is	-3 0¹				
7.													rovide suppor	ting		
8.									4 -	data in R	demarks or o	alions (r n a sepai	rate sheet)	ung		
9									5 -	Wetland	Non-Vascul	ar Plants	1			
10.													ion ¹ (Explain)			
11									1 10	obiemanc	, r iyaropirya	vegetati	ion (Explain)			
50% =, 20% =					= Tota	al Cove							drology must			
Woody Vine Stratum (0010	•	be	prese	ent, unles	s disturbed o	or problen	natic.			
Rubus armeniacus			<u>85</u>		<u>yes</u>		FACU									
2.	<u>u</u>		<u>00</u>		<u>ycs</u>		17100	Нус	dropł	hytic						
50% = <u>42.5</u> , 20% = <u>17</u>	7		<u>85</u>			al Cove		_	getati		`	Yes		No		\boxtimes
	=		<u>00</u>		- 100	ai Oovo	.1	Pre	esent'	?						
% Bare Ground in Her		-						<u> </u>	1000		0.11 11 114			200.0		
	species with 5% sed for this delin	or less absolute eation.	coverage	were	not co	onsider	ed dominant	. The	1988	Region	9 National W	etiand Pi	ant List and 19	993 S	uppiei	nent

	Matrix				Redox Fe	eatures							
nches)	Color (moist)	%		Color (m	oist) %	Type ¹	Loc ²	Texture			Remark	s	
<u>0-9</u>	10YR 2/2		-		· —			Gr Sa Lo	am	-			
<u>9-18</u>	10YR 2/1		_					Gr Sa Lo	am				
			-		· —					-			
		-	-		· —					<u>.</u>			
			-		· —				-				
			-							•			
			-							•			
			-										
•					rix, CS=Covered or C	Joated Sand (Grains. Lo		Pore Lining,		Haralaia C	3_11_3.	
		able to a	II LKKS,		otherwise noted.)				cators for Pro		Hyaric S	ooiis :	
Histoso					Sandy Redox (S5)				2 cm Muck		(TEO)		
	pipedon (A2)				Stripped Matrix (S	•	oont MI D A 1)		Red Paren		. ,	E12\	
	listic (A3)				Loamy Mucky Min		cept wilka i)		Very Shall		-	F12)	
	en Sulfide (A4) ed Below Dark Surf	200 (411)			Loamy Gleyed Ma Depleted Matrix (F				Other (Exp	nam in Ker	narks)		
	ark Surface (A12)	ace (ATT)			Redox Dark Surface	•							
	Mucky Mineral (S1)	,			Depleted Dark Sur			³ Indio	cators of hydi	ophytic ve	getation	and	
	Gleyed Matrix (S4)				Redox Depression			W	etland hydrol	ogy must b	e preser		
	ayer (if present):				Redox Depression	13 (1 0)		ur	nless disturbe	ea or proble	ematic.		
pe:	ayor (ii procont).												
epth (inches							Hydric Soils Pr	resent?		Yes		No	Σ
emarks:	Cobbles observed	below at	16 inche	s and b	elow								
YDROLOG	3Y		16 inche	s and b	elow								
YDROLOO	GY rology Indicators	:						0				0	
YDROLOG	GY rology Indicators ators (minimum of	:		ck all tha	ıt apply)	(00)			dary Indicato			red)	
YDROLOG etland Hyd imary Indica l Surface	GY rology Indicators ators (minimum of e Water (A1)	:			nt apply) Water-Stained Lea	` '			Water-Stained	d Leaves (I	B9)	red)	
YDROLOG etland Hyd imary Indic: Surface High W	or of the state of	:		ck all tha	it apply) Water-Stained Lea (except MLRA 1,	` '	3)	(Water-Stained	d Leaves (I	B9)	ed)	
YDROLOG etland Hyd imary Indic: Surface High W Satura	rology Indicators ators (minimum of e Water (A1) ater Table (A2) tion (A3)	:		ck all tha	nt apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11)	2, 4A, and 4E	В)) (Water-Stained (MLRA 1, 2, 4 Drainage Patt	d Leaves (I	B9)	red)	
YDROLOG etland Hyd imary Indic: Surface High W Satura Water	rology Indicators ators (minimum of a water (A1) dater Table (A2) dion (A3) Marks (B1)	:		ck all tha	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra	2 , 4A , and 4E ttes (B13)	B)) 1 1	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V	d Leaves (I IA, and 4E erns (B10) Vater Table	B9) (B) (C2)	·	
YDROLOG etland Hyd imary Indica Surface High W Satura Water Sedime	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2)	:		ck all tha	t apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide	2, 4A, and 4E stes (B13) Odor (C1)) (Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	d Leaves (I IA, and 4E terns (B10) Vater Table sible on Ae	B9) B) c (C2) rial Imag	·	
YDROLOG etland Hyd imary Indica Surface High W Saturae Water Sedime Drift De	rology Indicators ators (minimum of each Water (A1) rater Table (A2) cition (A3) Marks (B1) ent Deposits (B2) eposits (B3)	:		ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph	2, 4A, and 4E tes (B13) Odor (C1) neres along Li	iving Roots (C3)		Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic R	d Leaves (I AA, and 4E terns (B10) Vater Table Sible on Ae Position (D	B9) B) c (C2) rial Imag	·	
YDROLOG fetland Hyd frimary Indica Surface High W Saturat Water Sedime Drift De	rology Indicators ators (minimum of a Water (A1) dater Table (A2) cion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4)	:		ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduce	2, 4A, and 4E ates (B13) Odor (C1) heres along Li ced Iron (C4)	iving Roots (C3)		Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3)	B9) B) c (C2) rial Imag	·	
YDROLOG fetland Hyd rimary Indica Surface High W Saturar Water Sedime Drift De Algal M	rology Indicators ators (minimum of the Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5)	:		ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosph Presence of Reduc Recent Iron Reduc	2, 4A, and 4E ates (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled	iving Roots (C3) Soils (C6)) 1 2 3 6	Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5)	B9) B) I e (C2) rial Imag 2)	ery (C9)	
YDROLOG /etland Hydrimary Indicators Surface High W Saturators Water Sedime Drift De Algal M Iron De	rology Indicators ators (minimum of a Water (A1) Vater Table (A2) Vation (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6)	: one requi	red; chec	ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled es Plants (D1)	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6	B9) B9) ce (C2) rial Imag 2)	ery (C9)	
YDROLOG Tetland Hyd Timary Indicat Surface High W Saturat Water Sedime Drift De Algal M Iron De Surface Inunda	rology Indicators ators (minimum of a Water (A1) dater Table (A2) cion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	: one requi	red; chec	ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosph Presence of Reduc Recent Iron Reduc	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled es Plants (D1)	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6	B9) B9) ce (C2) rial Imag 2)	ery (C9)	
YDROLOG retland Hyd rimary Indica Surface High W Saturae Water Sedime Jiron De Surface Inunda Sparse	rology Indicators ators (minimum of a water (A1) rater Table (A2) cition (A3) Marks (B1) ent Deposits (B2) eposits (B3) rater or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aerially Vegetated Conc	: one requi	red; chec	ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled es Plants (D1)	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6	B9) B9) ce (C2) rial Imag 2)	ery (C9)	
YDROLOG Tetland Hyd Timary Indication Surface High W Saturat Water Sedime Algal M Iron De Surface Inunda Sparse eld Observ	rology Indicators ators (minimum of a Water (A1) ater Table (A2) cion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri	: one requi	y (B7) ce (B8)	ck all tha	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Redur Recent Iron Reduc Stunted or Stresse Other (Explain in F	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled es Plants (D1) Remarks)	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6	B9) B9) ce (C2) rial Imag 2)	ery (C9)	
YDROLOG etland Hyd imary Indic: Surface High W Saturat Water Sedime Drift De Hon De Inunda Sparse eld Observ	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri dy Vegetated Conc ations:	: one requi	y (B7) ce (B8)	ck all that	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse Other (Explain in F	2, 4A, and 4E ttes (B13) Odor (C1) neres along Li ced Iron (C4) ction in Tilled es Plants (D1) Remarks)	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I AA, and 4E terns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6	B9) B9) ce (C2) rial Imag 2)	ery (C9)	
YDROLOG Setland Hyd Finary Indication Surface High W Saturat Water Sedime Inon De Inon De Inunda Sparsee Seld Observ Cater Table I	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aeri dy Vegetated Conc ations: r Present?	: one requi	y (B7) ce (B8)	ck all that	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Redur Recent Iron Reduc Stunted or Stresse Other (Explain in F	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled heres Plants (D1) Remarks)	iving Roots (C3) Soils (C6)) (LRR A)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	d Leaves (I IA, and 4E lerns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6 Hummocks	B9) B9) ce (C2) rial Imag 2)	ery (C9)	lo
YDROLOG detland Hydrimary Indicate Surface High W Saturar Water Sedime Drift De Indicate Inunda Sparse eld Observer Cater Table Indicater Table Indicates Cap	rology Indicators ators (minimum of the Water (A1) (ater Table (A2) (ater Table (A2) (ater Table (A2) (ater Table (B2) (ater Table (B3) (ater Table (B3) (ater Table (B4) (ater Table (B4) (ater Table (B4) (ater Table (B5) (ater Table (B5) (ater Table (B5) (ater Table (B6) (ater	: one requi	y (B7) ce (B8) No No	ck all that	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide of Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse Other (Explain in Foundament)	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled es Plants (D1) Remarks)	iving Roots (C3) Soils (C6)) (LRR A)		Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave I	d Leaves (I IA, and 4E lerns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6 Hummocks	B9) e (C2) rial Imag 2) (LRR A	ery (C9)	lo
rimary Indica Surface High W Satura Water Sedime Inift De Surface Inunda Sparse ield Observ water Table I aturation Prencludes cap	rology Indicators ators (minimum of the Water (A1) (ater Table (A2) (ater Table (A2) (ater Table (A2) (ater Table (B2) (ater Table (B3) (ater Table (B3) (ater Table (B4) (ater Table (B4) (ater Table (B4) (ater Table (B5) (ater Table (B5) (ater Table (B5) (ater Table (B6) (ater	: one requi	y (B7) ce (B8) No No	ck all that	water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide of Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse Other (Explain in F	2, 4A, and 4E ttes (B13) Odor (C1) heres along Li ced Iron (C4) ction in Tilled es Plants (D1) Remarks)	iving Roots (C3) Soils (C6)) (LRR A)		Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave I	d Leaves (I IA, and 4E lerns (B10) Vater Table sible on Ae Position (D ard (D3) Test (D5) ounds (D6 Hummocks	B9) e (C2) rial Imag 2) (LRR A	ery (C9)	lo

Project Site:	Lynnwood Link	k Extension				City/	County	: <u>Sea</u>	ttle/King		Sampling	Date:	3/19	9/12	
Applicant/Owner:	Sound Transit								S	State: WA	Sampling	Point:	WS	E5-SI	<u>21</u>
Investigator(s):	M. Maynard, C	C. Worsley						S	ection, T	ownship, Ran	ge: <u>S20, </u>	Γ26N, R4E			
Landform (hillslope, te	rrace, etc.):	toe of road fill slop	<u>e</u>		Lo	cal relief	(concav	e, conve	ex, none): <u>concave</u>		Slope	e (%):	2	
Subregion (LRR):	<u>A</u>		Lat: 4	47.7312	29462180	<u> </u>		Long:	-122.32	2368003200		Datum: I	NAD8	3	
Soil Map Unit Name:	Urban land									NWI clas	ssification:	<u>PFO</u>			
Are climatic / hydrolog	ic conditions on	the site typical for	this time	of yea	r?	Yes		No		If no, explain	in Remarks	.)			
Are Vegetation □,	Soil □,	or Hydrology	□, sig	nificant	ly disturb	ed?	Are "No	ormal Ci	ircumsta	nces" present	?	Yes	\boxtimes	No	
Are Vegetation □,	Soil □,	or Hydrology	□, nat	turally p	roblemat	ic?	(If need	ded, exp	olain any	answers in Re	emarks.)				
-							-	-							
SUMMARY OF FIN	IDINGS – Atta	ach site map sh	owing	samp	ling poi	nt locati	ons, tr	ransec	ts, imp	ortant featu	ıres, etc.				
Hydrophytic Vegetatio			Yes		No 🗆				, ,						
Hydric Soil Present?			Yes	_	No 🗆			d Area				Yes	\boxtimes	No	
Wetland Hydrology Pro	esent?		Yes		No 🗆	within	a Wetla	and?					_		
		70 (-, , ,		,							
Remarks: Sample p	lot is located ap	proximately 70 fee	t south o	f North	Branch T	hornton (Creek, a	it toe of	I-5 slope	e, approximate	ly 15 feet w	est of the fe	ence.		
VEGETATION – Us	se scientific r	names of plants	Absolute		aminant	ممانمم	40.0								
Tree Stratum (Plot siz	e: <u>10M</u>)		% Cove		ominant pecies?	Indica Status		Domina	ance Tes	t Worksheet:	:				
1. <u>Alnus rubra</u>			<u>85</u>	<u>ye</u>	<u>es</u>	<u>FAC</u>		Number	r of Domi	nant Species		2			(4)
2				_				That Are	e OBL, F	ACW, or FAC	:	<u>3</u>			(A)
3				_				Total Nu	umber of	Dominant					(D)
4				_						All Strata:		<u>4</u>			(B)
50% = <u>42.5</u> , 20% = <u>17</u>	<u>7</u>		<u>85</u>	=	Total Co	ver		Percent	of Domi	nant Species					(4 (5)
Sapling/Shrub Stratun	n (Plot size: <u>5M</u>))								ACW, or FAC	:	<u>75</u>			(A/B)
1				_				Prevale	nce Inde	ex worksheet	:				
2									Tota	al % Cover of:		Multipl	y by:		
3.								OBL spe			•	x1 =			
4.								FACW s				x2 =			
5.								FAC spe	-			x3 =			
50% =, 20% =				_	Total Co	ver		FACU s				x4 =			
Herb Stratum (Plot siz					· otal oo			UPL spe	-			x5 =		_	
Athyrium filix-femi			20			EAC		•			(4)	X3 =			D)
'			<u>20</u>		<u>es</u>	FAC		Column	Totals:		(A)			(I	٥)
2. <u>Equisetum telmate</u>			<u>60</u>	-	<u>es</u>	FACV	-			Prevalence		A =			
3. <u>Scirpus mircrocar</u>			2	<u>n</u>		OBL			-	getation Indi					
4. Ranunculus reper	<u>18</u>		<u>2</u>	n	<u>0</u>	FACV	_	_	•	Test for Hydro	. , .	etation			
5				_	_			⊠ 2· —	- Domina	ance Test is >	50%				
6				-				□ ₃ .	- Prevale	nce Index is <	< <u>3</u> .0¹				
7				_				□ ⁴ ·		logical Adapta			ting		
8				_				_	data in	Remarks or or	n a separat	e sheet)			
9				_				□ 5 ·	- Wetlan	d Non-Vascula	ar Plants ¹				
10				_				□ Pr	roblemati	ic Hydrophytic	Vegetation	¹ (Explain)			
11				_											
50% = <u>42</u> , 20% = <u>16.8</u>	<u>3</u>		<u>84</u>	=	Total Co	ver				dric soil and w ss disturbed o					
Woody Vine Stratum ((Plot size: <u>5M</u>)							ne hies	ent, une	ss distuibed 0	Problema	uc.			
1. Rubus armeniacus	<u>s</u>		<u>25</u>	ye	es_	FACU									
2								Hydrop	•						
50% = <u>12.5</u> , 20% = <u>5</u>			25	=	Total Co	ver		Vegetat		Y	'es		No		
% Bare Ground in Her	rh Stratum		_				[]	Present	ιſ						
т		n 9 National Wetla	nd Dlant	Liet on	4 1002 C	ınnlomosi	· woro ·	sod for	thic doll-	noation					
Remarks:	TIE 1300 KEGIOL	ı ə ıvalıunan vv ella	nu Fidilí l	∟ıət ä∏	u 1333 Ol	hhieitieu	were u	เงธน เปโ	uno ueill	icauUII.					

	1atrix			Redox Fe	eatures		_,				
nches) Color (mo	st)	%	Color (m	noist) %	Type ¹	Loc ²	Texture		Remark	s	
<u>0-19</u> <u>10YR 2</u>	<u>'1</u>	<u>100</u>					Gr Sa Loam	with cobbles. H	ligh organi	c content.	<u>.</u>
	_										
	_										
	_										
	_		-	-							
	_										
	_										
ype: C= Concentration,	_ Denletio	n RM-R		trix CS-Covered or 0	Coated Sand	Grains ² Lo	 cation: PI -Por	e Lining, M=Matrix	·		
ydric Soil Indicators: (A					Oddica Garia	Oranio. Lo		rs for Problemati		Soils ³ :	
Histosol (A1)				Sandy Redox (S5)		_	cm Muck (A10)			
Histic Epipedon (A2)				Stripped Matrix (S			_	ed Parent Materia	ıl (TF2)		
Black Histic (A3)				Loamy Mucky Min	•	cept MLRA 1)	□ V	ery Shallow Dark	Surface (T	F12)	
Hydrogen Sulfide (A	4)			Loamy Gleyed Ma	atrix (F2)		□ o	ther (Explain in R	emarks)		
Depleted Below Dar	Surface (A11)		Depleted Matrix (F	- 3)						
Thick Dark Surface	A12)			Redox Dark Surfa	ice (F6)						
Sandy Mucky Miner	al (S1)			Depleted Dark Su	rface (F7)			rs of hydrophytic v			
Sandy Gleyed Matri	(S4)			Redox Depression	ns (F8)			s disturbed or prol		π,	
estrictive Layer (if pres	ent):										
ype:											
epth (inches):						Hydric Soils P	resent?	Yes	\boxtimes	No	
emarks: Partially dec	omposed o	organic d	ebris throug	hout the profile.							
	omposed o	organic d	ebris throug	hout the profile.							
IYDROLOGY		organic d	ebris throug	hout the profile.							
IYDROLOGY Vetland Hydrology Indic	ators:						Secondary	/ Indicators (2 or n	nore requi	red)	
IYDROLOGY Vetland Hydrology Indic rimary Indicators (minim	ators:				aves (B9)			/ Indicators (2 or ner-Stained Leaves		red)	
YDROLOGY /etland Hydrology Indic rimary Indicators (minimud) Surface Water (A1)	ators: m of one re		check all th	at apply)	` '	В)	☐ Wate	•	(B9)	red)	
YDROLOGY Vetland Hydrology Indic rimary Indicators (minimum Surface Water (A1) High Water Table (A) Saturation (A3)	ators: m of one re		check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11)	2, 4A, and 4	В)	☐ Wate (MLI	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1	(B9) 1B) 0)	red)	
YDROLOGY Vetland Hydrology Indication (Minimum of the Company of	ators: im of one ro		check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra	2, 4A, and 4l ates (B13)	В)	☐ Wate (MLI	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal	(B9) 4B) 0) ble (C2)	·	
VPDROLOGY Vetland Hydrology Indicators (minimum of the control of	ators: im of one ro		check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide	2, 4A, and 4l ates (B13) Odor (C1)		☐ Wate (MLI ☐ Drain ☐ Dry-: ☐ Satu	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal rration Visible on A	(B9) IB) O) ble (C2) herial Imag	·	
VPDROLOGY Vetland Hydrology Indic rimary Indicators (minimal Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	ators: m of one ro		check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl	2, 4A, and 4ll ates (B13) Odor (C1) heres along L	iving Roots (C3)	Wate (MLi Drain Dry- Satu Geo	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal rration Visible on A morphic Position ((B9) IB) O) ble (C2) herial Imag	·	
IYDROLOGY Vetland Hydrology Indicators (minimary Indicators (minimary Indicators (minimary Indicators (Material I	ators: m of one ro		check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu	2, 4A, and 4ll ates (B13) Odor (C1) heres along L	iving Roots (C3)	Wate (MLI Drain Dry-1 Satu Geon Shal	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal rration Visible on A morphic Position (low Aquitard (D3)	(B9) 4B) 0) ble (C2) cerial Imag D2)	·	
IYDROLOGY Vetland Hydrology Indicators (minimary I	ators: Im of one ro 2) B2)		check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu	2, 4A, and 4ll ates (B13) Odor (C1) heres along L aced Iron (C4) ction in Tilled	iving Roots (C3)	Wate (MLI Drain Dry-: Satu Geon Shal	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal aration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5)	(B9) (B9) (B9) (B) (B) (B) (B) (B	ery (C9)	
IYDROLOGY Vetland Hydrology Indice rimary Indicators (minimally Indicators (minimally Indicators) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (Indicators) Iron Deposits (B5) Surface Soil Cracks	ators: m of one re 2) B2) 34) (B6)	equired;	check all the	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1	iving Roots (C3)	Wate (MLi Drain Satu Geor Shal FAC Rais	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal ration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D	(B9) (B9) (B9) (B9) (B) (B) (B) (ery (C9)	
Water Marks (B1) Sediment Deposits Drift Deposits (B5) Surface Soil Cracks Inundation Visible o	ators: Im of one ro 12) B2) B4) (B6) In Aerial Image	equired;	check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1	iving Roots (C3)	Wate (MLi Drain Satu Geo Shal	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal aration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5)	(B9) (B9) (B9) (B9) (B) (B) (B) (ery (C9)	
WDROLOGY Vetland Hydrology Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (Material) Indicators (Minimally Indicators (Minim	ators: Im of one ro 12) B2) B4) (B6) In Aerial Image	equired;	check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1	iving Roots (C3)	Wate (MLi Drain Satu Geor Shal FAC Rais	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal ration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D	(B9) (B9) (B9) (B9) (B) (B) (B) (ery (C9)	
WDROLOGY Vetland Hydrology Indicators (minimary Indicators (minimary Indicators (minimary Indicators (Material Plane) Surface Water (A1) High Water Table (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Indicators (Material Plane) Iron Deposits (B5) Surface Soil Cracks (Inundation Visible of Sparsely Vegetated (Material Plane)	ators: Im of one ro 12) B2) B4) (B6) In Aerial Image	equired;	check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse Other (Explain in I	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1 Remarks)	iving Roots (C3)	Wate (MLi Drain Satu Geor Shal FAC Rais	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal ration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D	(B9) (B9) (B9) (B9) (B) (B) (B) (ery (C9)	
WDROLOGY Vetland Hydrology Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (Material Paperson) Surface Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Indicators (B3) Surface Soil Cracks Inundation Visible of Sparsely Vegetated (Material Present)	ators: Im of one re 12) B2) B4) (B6) In Aerial Ima Concave S	equired; agery (B	check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse Other (Explain in I	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ciced Iron (C4) ction in Tilled es Plants (D1 Remarks)	iving Roots (C3)	Wate (MLi Drain Satu Geor Shal FAC Rais	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal ration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D	(B9) (B9) (B9) (B9) (B) (B) (B) (ery (C9)	
HYDROLOGY Vetland Hydrology Indicators (minimary In	ators: m of one ro .2) B2) B4) (B6) n Aerial Im. Concave S	equired; agery (B Surface (check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse Other (Explain in I	2, 4A, and 4ll ates (B13) Odor (C1) heres along L liced Iron (C4) ction in Tilled es Plants (D1 Remarks) s): 16	iving Roots (C3) Soils (C6)) (LRR A)	Wate (MLi Drain Satu Geor Shal FAC Rais	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal rration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ded Ant Mounds (C tt-Heave Hummoc	(B9) (B9) (B9) (B9) (B) (B) (B) (ery (C9)	lo [
WDROLOGY Vetland Hydrology Indices rimary Indicators (minimally Indicators (minimally Indicators) Surface Water (A1) High Water Table (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Indicators) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated (Indicators) Indicators Water Present? Vater Table Present? atturation Present? Includes capillary fringe)	ators: Im of one re 12) B2) B4) (B6) In Aerial Im Concave S Yes Yes Yes	equired; agery (B Surface (check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse Other (Explain in I	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1 Remarks) s):s):s surface	iving Roots (C3) Soils (C6)) (LRR A)	Wate (MLI Drain Dry-1 Satu Geon Shal FAC Rais Fros	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal rration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ded Ant Mounds (C tt-Heave Hummoc	(B9) (B9) (B9) (D0) (D1) (D2) (D2) (D3) (D4) (D5) (LRR 4)	(C9)	lo
HYDROLOGY Vetland Hydrology Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (Material Table (Material Table) Surface Water Marks (B1)	ators: Im of one re 12) B2) B4) (B6) In Aerial Im Concave S Yes Yes Yes	equired; agery (B Surface (check all th	at apply) Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stresse Other (Explain in I	2, 4A, and 4ll ates (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1 Remarks) s):s):s surface	iving Roots (C3) Soils (C6)) (LRR A)	Wate (MLI Drain Dry-1 Satu Geon Shal FAC Rais Fros	er-Stained Leaves RA 1, 2, 4A, and 4 nage Patterns (B1 Season Water Tal rration Visible on A morphic Position (low Aquitard (D3) -Neutral Test (D5) ded Ant Mounds (C tt-Heave Hummoc	(B9) (B9) (B9) (D0) (D1) (D2) (D2) (D3) (D4) (D5) (LRR 4)	(C9)	lo

Project Site:	Lynnwood Link	Extension					City/Cour	nty:	Seatt	le/King		Sampli	ing Date:	3/19	9/12	
Applicant/Owner:	Sound Transit									Sta	ate: WA	Sampli	ing Point:	WS	E5-SI	<u> 22</u>
Investigator(s):	M. Maynard, C.	. Worsley							Se	ction, To	wnship, Rar	ige: <u>S2</u>	0, T26N, R4E			
Landform (hillslope, te	rrace, etc.):					Loca	al relief (cond	ave, c	onve	x, none):	none		Slope	e (%):	<u>10</u>	
Subregion (LRR):	<u>A</u>		Lat:	<u>47.73</u>	12797	3780		Lo	ong:	-122.323	76967800		Datum:	NAD8	<u>3</u>	
Soil Map Unit Name:	<u>Urban land</u>										NWI cla	ssificatio	n: <u>Upland</u>			
Are climatic / hydrolog	ic conditions on	the site typical fo	r this time	e of ye	ear?	Υ	es 🗆	N	10	☐ (If	no, explain	in Rema	rks.)			
Are Vegetation □,	, Soil □,	or Hydrology			-	sturbed		'Norma	al Circ	cumstand	es" present	?	Yes	\boxtimes	No	
Are Vegetation □,	Soil □,	or Hydrology	□, na	turally	/ probl	ematic	? (If ne	eded,	expla	ain any a	nswers in R	emarks.)				
SUMMARY OF FIN		ch site map s			• •		locations	tran	sects	s, impo	rtant featu	ıres, et	C.			
Hydrophytic Vegetation	n Present?		Yes		No		Is the Sam	nled A	rea					_		_
Hydric Soil Present?			Yes		No		within a W						Yes		No	
Wetland Hydrology Pro	esent?		Yes	\boxtimes	No											
Remarks: The samp	ole plot is located	d approximately 2	2 feet ea	st of I-	-5 gua	rdrails	and approxir	nately	18 fe	et southv	vest of WSE	5-SP1.				
VEGETATION – Us	se scientific n	ames of plant														
Tree Stratum (Plot siz	e: <u>10M</u>)		Absolut % Cove		Domir Specie		Indicator Status	Don	ninan	nce Test	Worksheet	:				
1. <u>Alnus rubra</u>			90	_	<u>yes</u>	<u></u>	FAC	Nun	nber c	of Domina	ant Species		0			(4)
2											CW, or FAC	:	<u>2</u>			(A)
3								Tota	al Nur	mber of D	ominant		2			(D)
4								Spe	cies A	Across Al	l Strata:		<u>3</u>			(B)
50% = <u>45</u> , 20% = <u>18</u>			90		= Tota	al Cove	r	Pero	cent o	of Domina	ant Species		cc			(A/D)
Sapling/Shrub Stratum	n (Plot size: <u>5M</u>)							Tha	t Are	OBL, FA	CW, or FAC	: :	<u>66</u>			(A/B)
1								Prev	valen	ce Index	worksheet	i:				
2										Total	% Cover of:	<u>.</u>	Multip	ly by:		
3								OBL	_ spec	cies			x1 =			
4								FAC	CW sp	oecies			x2 =			
5								FAC	Spec	cies			x3 =			
50% =, 20% =					= Tota	al Cove	r	FAC	CU sp	ecies			x4 =			
Herb Stratum (Plot siz	re: <u>2M</u>)							UPL	spec	cies			x5 =			
1. Equisetum telmate	eia		<u>30</u>		yes		FACW	Colu	umn T	Γotals:		_(A)			(В)
2. <u>Gallium aparine</u>			<u>5</u>		<u>no</u>		<u>FACU</u>				Prevalence	Index =	B/A =			
3. <u>Athyrium filix-femi</u>	'na		<u>2</u>		<u>no</u>		FAC	Hyd	lroph	ytic Veg	etation Indi					
4.									-	-	est for Hydro		egetation			
5								\boxtimes	2 - 1	Dominan	ce Test is >	50%				
6									3 - 1	Prevalen	ce Index is	<3.0 ¹				
7.							<u> </u>				-		Provide suppor	ting		
8.									4-1	data in R	emarks or o	n a sepa	rate sheet)	ung		
9									5 - \	Wetland	Non-Vascul	ar Plants	1			
10.													ion ¹ (Explain)			
11									FIU	biemanc	Пушторпушс	vegetat	ion (Explain)			
50% = <u>18.5</u> , 20% = <u>7.4</u>	4		37			al Cove							ydrology must			
Woody Vine Stratum (<u>01</u>		- 1010	ai 00v0		be p	oreser	nt, unless	disturbed of	r probler	natic.			
Rubus armeniacus			<u>60</u>		<u>yes</u>		<u>FACU</u>									
2.	<u>s</u>		<u>00</u>		<u>yes</u>		1 700	Hyd	lroph	ytic						
50% = <u>30</u> , 20% = <u>12</u>			60			al Cove		Veg	etatio	on	١	es (\boxtimes	No		
			<u>60</u>		= 1012	ai Cove	I	Pres	sent?	?						
% Bare Ground in Her	<u> </u>															
Remarks:	he 1988 Region	9 National Wetla	ind Plant	List a	nd 199	93 Sup	plement wer	e used	for th	nis deline	ation.					

	Matrix					Redox Feat	ures									
inches)	Color (moist)	%		Color (m	oist)	%	Type ¹	Loc ²	Texture	9			Rer	narks		
<u>0-1</u>			_		-				Duf	:	partiall	ly decom	posed	<u>1</u>		
<u>1-8</u>	10YR 3/2	100	<u>)</u>		-				<u>Gr Sa L</u>	oam						
<u>8-12</u>	10YR 4/2	100	<u>)</u>		-				<u>Gr Sa L</u>	oam	inclusi	ons of sa	<u>nd</u>			
<u>12-20</u>	2.5Y 5/2	<u>80</u>		10YR 5	<u>/4</u>	<u>20</u>	<u>C</u>	<u>M</u>	<u>Gr Sa</u>	<u>nd</u>						
			_		-					_						
			_		-					_						
			_		-					_						
			_		-					_						
	oncentration, D=De						ated San	d Grains.	Location: PL							
lydric Soil	Indicators: (Applic	cable to	all LRRs		otherwise	noted.)				icators	for Pro	oblematio	с Нус	Iric So	oils³:	
] Histos	ol (A1)				-	Redox (S5)				2 0	m Muck	(A10)				
	Epipedon (A2)				Stripped	Matrix (S6)				Re	d Parent	t Material	I (TF2	2)		
Black I	Histic (A3)				Loamy N	Mucky Minera	al (F1) (e :	xcept MLRA 1)		Ve	ry Shallo	ow Dark S	Surfac	e (TF	12)	
] Hydrog	gen Sulfide (A4)				Loamy (Gleyed Matrix	x (F2)			Otl	ner (Exp	lain in Re	emark	s)		
Deplet	ed Below Dark Sur	face (A1	1)		Depleted	d Matrix (F3)										
	Dark Surface (A12)				Redox D	ark Surface	(F6)		3.							
☐ Sandy	Mucky Mineral (S1)			Depleted	d Dark Surfac	ce (F7)					ophytic vogy must				
] Sandy	Gleyed Matrix (S4))			Redox D	epressions ((F8)	T				ed or prob			,	
estrictive I	Layer (if present):															
ype:																
epth (inche	s):							Hydric Soils	Present?			Yes	L]	No	Þ
Remarks:	Disturbed, some t	rash in u	pper laye	r.												
		rash in u	pper laye	r.												
IYDROLO			pper laye	er.												
HYDROLO Vetland Hyd	G Y	»:			at apply)				Seco	ndary	Indicator	rs (2 or m	nore re	equire	d)	
HYDROLO Vetland Hyo Primary Indic	GY drology Indicators	»:				tained Leave	es (B9)					rs (2 or m		equire	d)	
HYDROLO Vetland Hyd Primary Indic	GY drology Indicators cators (minimum of	»:		ck all tha	Water-S	tained Leave	, ,	4B)		Water	-Stained		(B9)	equire	d)	
HYDR OLO Vetland Hyd Primary India Surfac High V	drology Indicators (minimum of the Water (A1)	»:		ck all tha	Water-S	MLRA 1, 2,	, ,	4B)		Water	-Stained A 1, 2, 4	Leaves	(B9) I B)	equire	d)	
HYDR OLO Vetland Hyd Primary India Surfac High V	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2)	»:		ck all tha	Water-S (except Salt Cru	MLRA 1, 2,	4A, and	4B)		Water (MLR Draina	-Stained A 1, 2, 4 age Patte	Leaves	(B9) IB) 0)	-	d)	
HYDROLO Vetland Hyd rimary Indic Surfac High V Satura Water	drology Indicators eators (minimum of the Water (A1) Water Table (A2) ation (A3)	»:		ck all tha	Water-S (except Salt Cru Aquatic	MLRA 1, 2, st (B11)	4A, and as (B13)	4B)		Water (MLR Draina	-Stained A 1, 2, 4 age Patte eason W	Leaves A, and 4 erns (B10	(B9) (B9) (B) (B) (C)	2)		
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Water Sedim	drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1)	»:		ck all tha	Water-S (except Salt Cru Aquatic Hydroge	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od	4A , and as (B13) dor (C1)	4B) Living Roots (0		Water (MLR Draina Dry-S Satura	-Stained A 1, 2, 4 age Patto eason Wation Vis	Leaves A, and 4 erns (B10 /ater Tab	(B9) (B) 0) ole (C:	2)		
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Water Sedim Drift D	drology Indicators cators (minimum of se Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2)	»:		ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od	4A, and sign (B13) dor (C1) res along	Living Roots (C		Water (MLR Draina Dry-S Satura Geom	-Stained A 1, 2, 4 age Patte eason W ation Vis	A, and 4 erns (B10 ater Tab	(B9) (B) 0) ole (C:	2)		
HYDROLO Vetland Hyd Primary India Surfac High V Satura Water Sedim Sedim	drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) deposits (B3)	»:		ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence	MLRA 1, 2, st (B11) Invertebrates on Sulfide Odd Rhizospher	4A, and as (B13) dor (C1) res along d Iron (C4	Living Roots (C		Water (MLR Draina Dry-S Satura Geom	-Stained A 1, 2, 4 age Patte eason W ation Vis orphic F ow Aquita	A Leaves A, and 4 erns (B10 Vater Tab ible on A Position (I	(B9) (B) 0) ble (C: erial I	2)		
HYDR OLO Vetland Hyd Primary India Surfac High V Satura Water Sedim Drift D Iron D	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) deposits (B3) Mat or Crust (B4)	s: one requ		ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher ee of Reduced	4A, and as (B13) for (C1) res along d Iron (C4) on in Tille	Living Roots (C 4) d Soils (C6)		Water (MLR Draina Dry-S Satura Geom Shallo	-Stained A 1, 2, 4 age Pattre eason Wation Vis orphic F ow Aquita Neutral T	d Leaves A, and 4 erns (B10 /ater Tab ible on A Position (Danath)	(B9) IB) 0) ble (Caerial I	2) mage		
HYDROLO Vetland Hyd Primary Indic High V Satura Water Sedim Drift D Algal I Iron D Surface	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) deposits (B3) Mat or Crust (B4) deposits (B5)	s: one requ	uired; che	ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher de of Reduced fron Reduction	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C 4) d Soils (C6)		Water (MLR Draina Dry-S Satura Geom Shallo FAC-I Raise	-Stainec A 1, 2, 4 age Patte eason Wation Vis orphic F ow Aquita Neutral T d Ant Mo	Leaves A, and 4 erns (B10 Vater Tab lible on A Position (I ard (D3)	(B9) (B9) (B) (C) (C) (C) (C) (C) (C) (C	2) mage		
HYDROLO Vetland Hyd Primary Indic High V Satura Water Sedim Algal I Iron D Surfac	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) deposits (B3) Mat or Crust (B4) eposits (B5) de Soil Cracks (B6)	s: one requ	uired; che	ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher e of Reduced Iron Reduction or Stresses	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C 4) d Soils (C6)		Water (MLR Draina Dry-S Satura Geom Shallo FAC-I Raise	-Stainec A 1, 2, 4 age Patte eason Wation Vis orphic F ow Aquita Neutral T d Ant Mo	d Leaves A, and 4 erns (B10 dater Tab ible on A Position (I ard (D3) Fest (D5) bounds (D0)	(B9) (B9) (B) (C) (C) (C) (C) (C) (C) (C	2) mage		
HYDROLO Vetland Hyd Primary Indic High V Satura Vater Sedim Algal I Iron D Surfac	drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) thent Deposits (B2) deposits (B3) Mat or Crust (B4) the posits (B5) the Soil Cracks (B6) ation Visible on Aerely Vegetated Conc	s: one requ	uired; che	ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher e of Reduced Iron Reduction or Stresses	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C 4) d Soils (C6)		Water (MLR Draina Dry-S Satura Geom Shallo FAC-I Raise	-Stainec A 1, 2, 4 age Patte eason Wation Vis orphic F ow Aquita Neutral T d Ant Mo	d Leaves A, and 4 erns (B10 dater Tab ible on A Position (I ard (D3) Fest (D5) bounds (D0)	(B9) (B9) (B) (C) (C) (C) (C) (C) (C) (C	2) mage		
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Sedim Sedim Signal I Iron D Surfac Inunda Sparse	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) deposits (B3) Mat or Crust (B4) eposits (B5) de Soil Cracks (B6) ation Visible on Aerely Vegetated Concevations:	s: one requ ial Image cave Suri	uired; che	ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presenct Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher e of Reduced Iron Reduction or Stresses	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C 4) d Soils (C6)		Water (MLR Draina Dry-S Satura Geom Shallo FAC-I Raise	-Stainec A 1, 2, 4 age Patte eason Wation Vis orphic F ow Aquita Neutral T d Ant Mo	d Leaves A, and 4 erns (B10 dater Tab ible on A Position (I ard (D3) Fest (D5) bounds (D0)	(B9) (B9) (B) (C) (C) (C) (C) (C) (C) (C	2) mage		
HYDROLO Vetland Hyd Primary India Surfac High V Satura Sedim Drift D Surfac Iron D Iron D Inunda Spars Gurface Water	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) peposits (B3) Mat or Crust (B4) peposits (B5) pe Soil Cracks (B6) ation Visible on Aerely Vegetated Concepts (B5) per Present?	one required limage cave Surf	ery (B7)	ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher ee of Reduced fron Reduction or Stresses I	4A, and s (B13) dor (C1) res along d Iron (C4) on in Tille Plants (D marks)	Living Roots (C 4) d Soils (C6)		Water (MLR Draina Dry-S Satura Geom Shallo FAC-I Raise	-Stainec A 1, 2, 4 age Patte eason Wation Vis orphic F ow Aquita Neutral T d Ant Mo	d Leaves A, and 4 erns (B10 dater Tab ible on A Position (I ard (D3) Fest (D5) bounds (D0)	(B9) (B9) (B) (C) (C) (C) (C) (C) (C) (C	2) mage		
HYDROLO Wetland Hyde Primary India Surface High V Satura Water Sedim Iron D Iron D Inunda Sparse Field Observ Surface Water Vater Table Saturation Primary Settland Saturation Primary Settland Saturation Primary Staturation Primary Staturation Primary Surface Saturation Primary Surface Sat	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) deposits (B3) Mat or Crust (B4) deposits (B5) de Soil Cracks (B6) ation Visible on Aerely Vegetated Concevations: der Present? Present?	one required limage cave Surfaces	ery (B7)	ck all tha	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presend Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates en Sulfide Od d Rhizospher de of Reduced fron Reduction or Stresses I explain in Ren	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C 4) d Soils (C6) 11) (LRR A)		Water (MLR Draina Dry-S Satura Geom Shalld FAC-I Raise Frost-	-Stained A 1, 2, 4 age Patti eason W ation Vis corphic F ow Aquita Neutral T d Ant Mo Heave F	d Leaves A, and 4 erns (B10 dater Tab lible on A Position (I ard (D3) Fest (D5) bounds (Di Hummock	(B9) (B9) (B) (C) (C) (C) (C) (C) (C) (C	22) mage RRR A)	ry (C9)	No
HYDROLO Wetland Hyde Primary India High V Satura Water Sedim Iron D Inunda Inunda Sparse Field Observa Surface Water Vater Table Saturation Princludes cap	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) deposits (B3) Mat or Crust (B4) deposits (B5) de Soil Cracks (B6) ation Visible on Aerely Vegetated Conditions: der Present? Present? resent?	one required in the second sec	ery (B7) ace (B8)	ck all that	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates en Sulfide Odd Rhizospher de of Reduced fron Reduction Stresses (Explain in Renatt (inches): oth (inches):	4A, and s (B13) lor (C1) res along d Iron (C- on in Tille Plants (D marks) 17 8	Living Roots (C4) Id Soils (C6) LIVING LRR A)	C3)	Water (MLR Draina Dry-S Satura Geom Shalld FAC-I Raise Frost-	-Stained A 1, 2, 4 age Patti eason W ation Vis corphic F ow Aquita Neutral T d Ant Mo Heave F	d Leaves A, and 4 erns (B10 dater Tab lible on A Position (I ard (D3) Fest (D5) bounds (Di Hummock	(B9) (B9) (B9) (B9) (B9) (C) (C) (C) (C) (C) (C) (C) (22) mage RRR A)	ry (C9)	No
Primary Indic Surface High V Satura Sedim Drift D Algal I Iron D Surface Inunda Sparse Field Observ Surface Water Water Table Saturation Princludes cap	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) deposits (B3) Mat or Crust (B4) deposits (B5) de Soil Cracks (B6) ation Visible on Aerely Vegetated Concevations: der Present? Present?	one required in the second sec	ery (B7) ace (B8)	ck all that	Water-S (except Salt Cru Aquatic Hydroge Oxidized Presence Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates en Sulfide Odd Rhizospher de of Reduced fron Reduction Stresses (Explain in Renatt (inches): oth (inches):	4A, and s (B13) lor (C1) res along d Iron (C- on in Tille Plants (D marks) 17 8	Living Roots (C4) Id Soils (C6) LIVING LRR A)	C3)	Water (MLR Draina Dry-S Satura Geom Shalld FAC-I Raise Frost-	-Stained A 1, 2, 4 age Patti eason W ation Vis corphic F ow Aquita Neutral T d Ant Mo Heave F	d Leaves A, and 4 erns (B10 dater Tab lible on A Position (I ard (D3) Fest (D5) bounds (Di Hummock	(B9) (B9) (B9) (B9) (B9) (C) (C) (C) (C) (C) (C) (C) (22) mage RRR A)	ry (C9)	No

Project Site:	Lynnwood Link Extension			City/Coun	nty: <u>Seattle/King</u>	Sampling Date:	3/19/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSE6-SP1
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Ran	ge: S20, T26N, R4E	
Landform (hillslope, te	rrace, etc.):		Loca	I relief (conc	ave, convex, none): <u>concave</u>	Slope	e (%): <u>1</u>
Subregion (LRR):	<u>A</u>	Lat: 47.73	3230327350		Long: <u>-122.32368177900</u>	Datum: N	<u>1AD83</u>
Soil Map Unit Name:	<u>Urban land</u>				NWI clas	ssification: PSS	
Are climatic / hydrolog	ic conditions on the site typical for	this time of y	ear? Ye	es 🗆	No 🗌 (If no, explain i	n Remarks.)	
Are Vegetation □,		_	antly disturbed		Normal Circumstances" present		⊠ No □
Are Vegetation □,	Soil □, or Hydrology	☐, natural	y problematic?	(If ne	eded, explain any answers in Re	emarks.)	
0	IDINIOO ALL III						
	IDINGS – Attach site map sh		· · ·	locations,	transects, important featu	res, etc.	
Hydrophytic Vegetatio	n Present?	Yes ⊠	No 🗆	Is the Samp	oled Area	Vac	M No [
Hydric Soil Present?	40	Yes ⊠		within a We	tland?	Yes	⊠ No □
Wetland Hydrology Pro		Yes 🛚	No 🗆				
Remarks: The samp	ole plot is located approximately 75 SE6. Upland area to east and we	5 feet south o st consists of	f 5th Ave/I-5 no mowed fill slo	orthbound of pe for I-5 nor	f-ramp and approximately 18 fee	t east northeast of light e. Fill/disturbed soils w	pole. No paired ith reed
	ass and disturbance-tolerant roads						
VECETATION III	na anientifia nemes of plant						
	se scientific names of plants	Absolute	Dominant	Indicator	Daminanaa Taat Warkahaati		
Tree Stratum (Plot siz	e: <u>10M</u>)	% Cover	Species?	<u>Status</u>	Dominance Test Worksheet:		
1					Number of Dominant Species That Are OBL, FACW, or FAC	<u>2</u>	(A)
2					That Ale OBL, I ACW, OIT AC.	•	
3					Total Number of Dominant Species Across All Strata:	<u>2</u>	(B)
4					·		
50% =, 20% =			= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC	. <u>100</u>	(A/B)
Sapling/Shrub Stratun	<u>ıı</u> (Flot Size. <u>Siw</u>)	60	1/00	EACW	Prevalence Index worksheet		
 Spirea douglasii 		<u>60</u>	<u>yes</u>	<u>FACW</u>	Total % Cover of:		v bv:
					OBL species	Multiply x1 =	<u>y by.</u>
3 4					FACW species	x2 =	
5					FAC species	x3 =	
50% = <u>30</u> , 20% = <u>12</u>		60	= Total Cover		FACU species	x4 =	
Herb Stratum (Plot siz	ro: 2M)	<u>00</u>	= Total Cover		UPL species	x5 =	
Phalaris arundinae	•	00	1/00	EACW			(D)
	<u>cea</u>	<u>90</u>	<u>yes</u>	<u>FACW</u>		(A)	(B)
2						Index = B/A =	
3 4.					Hydrophytic Vegetation India		
5					☐ 1 – Rapid Test for Hydro ☐ 2 - Dominance Test is >5	. , .	
6							
· · · · · · · · · · · · · · · · · · ·					o i rovalonoo index lo s	_	
7					4 - Morphological Adapta data in Remarks or or	ations' (Provide support n a separate sheet)	ing
8 9					☐ 5 - Wetland Non-Vascula		
10.							
					Problematic Hydrophytic	vegetation (Explain)	
11 50% = <u>45</u> , 20% = <u>18</u>		00	= Total Cover		¹ Indicators of hydric soil and w	etland hydrology must	
Woody Vine Stratum ((Plot size: 5M)	<u>90</u>	= Total Cover		be present, unless disturbed or	r problematic.	
	(Flot \$126. <u>5101</u>)						
1 2.					Hydrophytic		
50% =, 20% =			= Total Cover			′es ⊠	No 🗆
			- i olai cover		Present?		
% Bare Ground in Her		101	14000 5		16 41 17 7		
Remarks:	he 1988 Region 9 National Wetla	nd Plant List	and 1993 Supp	piement were	used for this delineation.		

Depth	Matrix				Redox Feat	ures		_						
nches) Co	olor (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture			Remar	ks		
<u>0-9</u>	10YR 2/1	<u>100</u>		_				Gr Si Lo	<u>am</u>	•				
<u>9-18</u>	10YR 4/2	<u>100</u>		_				Gr Sa Lo	oam					
				_										
				_										
				_										
· 				_										
				_				-	-					
-				_				-	-					
	tration, D=Deplet					ated Sand	Grains. L		=Pore Lining,				2	
_	ators: (Applicabl	e to all L							cators for Pro		Hydric	Soils	i*:	
Histosol (A1	•				dy Redox (S5)				2 cm Muck					
Histic Epiped				-	ped Matrix (S6)				Red Paren		, ,			
Black Histic					ny Mucky Minera		cept MLRA 1)		Very Shall			TF12)		
Hydrogen Su					ny Gleyed Matri	, ,			Other (Exp	lain in Re	marks)			
	low Dark Surface	e (A11)		-	eted Matrix (F3)									
_	Surface (A12)				ox Dark Surface			3 m al:	cators of hydr	anhidia i				
	y Mineral (S1)				eted Dark Surfa	` '			etland hydrol					
	ed Matrix (S4)			Red	ox Depressions	(F8)		u	nless disturbe	ed or prob	lematic.			
estrictive Layer	(if present):													
/pe:							Hydric Soils F			Yes			lo	
emarks: Soils	appear to have	been dist	urbed. Thei	e are inc	lusions of sand i	n the lowe	er layer and litter	and debris	throughout the	e profile.				
Remarks: Soils	s appear to have	been dist	urbed. Thei	e are inc	lusions of sand i	n the lowe	er layer and litter	and debris	throughout the	e profile.				
emarks: Soils	s appear to have	been dist	urbed. Ther	e are inc	lusions of sand i	n the lowe	er layer and litter	and debris	throughout the	e profile.				
IYDROLOGY		been dist	urbed. Thei	e are inc	lusions of sand i	in the lowe	er layer and litter	and debris	throughout th	e profile.				
IYDROLOGY /etland Hydrolog	gy Indicators:					in the lowe	er layer and litter		throughout the		ore requ	ired)		
IYDROLOGY /etland Hydrolog rimary Indicators	gy Indicators: (minimum of one			hat apply			er layer and litter	Secon		rs (2 or m		ired)		
YDROLOGY /etland Hydrolog rimary Indicators	gy Indicators: (minimum of one ter (A1)		; check all t	hat apply Wate)	es (B9)		Secon	ndary Indicato	rs (2 or m	(B9)	ired)		
IYDROLOGY /etland Hydrolog rimary Indicators Surface Wa High Water	gy Indicators: (minimum of one ter (A1) Table (A2)		; check all t	hat apply Wate (exc) er-Stained Leave	es (B9)		Secon	ndary Indicato Water-Stained	rs (2 or m d Leaves ((B9)	ired)		
YDROLOGY //etland Hydrolog rimary Indicators Surface Wa High Water Saturation (gy Indicators: (minimum of one ter (A1) Table (A2) A3)		; check all t	hat apply Wate (exc Salt) er-Stained Leave ept MLRA 1, 2,	es (B9) 4 A, and 4		Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4	rs (2 or m d Leaves (lA, and 4 erns (B10	(B9) B)	ired)		
YDROLOGY /etland Hydrolog rimary Indicators Surface Wa High Water Saturation (,	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1)		; check all t	hat apply Wate (exc Salt) er-Stained Leave ept MLRA 1, 2, Crust (B11)	es (B9) 4A, and 4 s (B13)		Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt	rs (2 or m d Leaves (l A, and 4) erns (B10 Vater Tab	(B9) B) (b)		C9)	
IYDROLOGY Ietland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Mark: Sediment D	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2)		; check all t	hat apply Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc	es (B9) 4A, and 4 s (B13) dor (C1)		Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V	rs (2 or m d Leaves (l A, and 4 l erns (B10 Vater Tabl	(B9) B) I) Ie (C2) erial Image		C9)	
IYDROLOGY /etland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Drift Deposi	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3)		; check all t	hat apply Wate (exc Salt Aqua Hydr	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc	es (B9) 4A, and 4 s (B13) dor (C1) res along l	BB)	Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	rs (2 or m d Leaves (l.A, and 4! erns (B10 Vater Tab ible on Ae Position (E	(B9) B) I) Ie (C2) erial Image		C9)	
WDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (, Water Mark: Sediment D Drift Deposi Algal Mat or	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4)		; check all t	hat apply Wate (exc Salt Aqua Hydi Oxid	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4	EB) Living Roots (C3	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I	rs (2 or m d Leaves (lA, and 4) erns (B10 Vater Tab lible on Ac Position (E ard (D3)	(B9) B) I) Ie (C2) erial Image		C9)	
IYDROLOGY /etland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Drift Deposi Algal Mat or	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4)		; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Pres	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec	Living Roots (C3)	Secon	ndary Indicato Water-Stainee (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	rs (2 or m d Leaves (JA, and 4) erns (B10 Vater Tablible on Ae Position (D ard (D3) Fest (D5)	(B9) B) I) I) Ie (C2) Prial Imago D2)	gery (C9)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Drift Deposi Algal Mat or Iron Deposit	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5)	e required	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Press Reco	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1	Living Roots (C3)	Secon	ndary Indicato Water-Stainee (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	rs (2 or m. d Leaves (lA, and 4) erns (B10 Vater Tablible on Ae Position (D ard (D3) Fest (D5) ounds (D6)	(B9) B) I) Ide (C2) Brital Image Brital (B) Brital (B) Brital (B) Brital (B) Brital (B) Brital (B)	gery (C9)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Drift Deposi Algal Mat or Iron Deposit Surface Soil	gy Indicators: (minimum of one) ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) I Cracks (B6)	e required	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Press Reco	ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1	Living Roots (C3)	Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or m. d Leaves (lA, and 4) erns (B10 Vater Tablible on Ae Position (D ard (D3) Fest (D5) ounds (D6)	(B9) B) I) Ide (C2) Brital Image Brital (B) Brital (B) Brital (B) Brital (B) Brital (B) Brital (B)	gery (C9)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (A Sediment Do Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation (A Sparsely Ve	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) I Cracks (B6) Visible on Aerial I	e required	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Press Reco	ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1	Living Roots (C3)	Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or m. d Leaves (lA, and 4) erns (B10 Vater Tablible on Ae Position (D ard (D3) Fest (D5) ounds (D6)	(B9) B) I) Ide (C2) Brital Image Brital (B) Brital (B) Brital (B) Brital (B) Brital (B) Brital (B)	gery (C9)	
WDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Mark: Sediment D Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation \ Sparsely Vetical Observation	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) I Cracks (B6) //isible on Aerial I	magery (E	; check all t	hat apply Wate (exc Salt Aqua Hydi Oxid Pres Recc Stun	ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1	Living Roots (C3)	Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or m. d Leaves (lA, and 4) erns (B10 Vater Tablible on Ae Position (D ard (D3) Fest (D5) ounds (D6)	(B9) B) I) Ide (C2) Brital Image Brital (B) Brital (B) Brital (B) Brital (B) Brital (B) Brital (B)	gery (C9)	
WDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation (Sparsely Veteled Observation urface Water Pre	gy Indicators: (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) c Crust (B4) ts (B5) I Cracks (B6) //sible on Aerial I	magery (I	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Res	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1	Living Roots (C3) d Soils (C6)	Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or m. d Leaves (lA, and 4) erns (B10 Vater Tablible on Ae Position (D ard (D3) Fest (D5) ounds (D6)	(B9) B) I) Ide (C2) Brital Image Brital (B) Brital (B) Brital (B) Brital (B) Brital (B) Brital (B)	gery (C9)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Iron Deposit Iron Deposit Inundation \ Sparsely Veter Table Presentaturation Present ncludes capillary	gy Indicators: (minimum of one oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) c Crust (B4) ts (B5) I Cracks (B6) //sible on Aerial I egetated Concave as: esent? Yes ent? Yes fringe)	magery (Fee Surface	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1 marks) surface surface	Living Roots (C3) d Soils (C6) l) (LRR A)	Secon	ndary Indicato Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral	rs (2 or m d Leaves (d La, and 4) erns (B10 Vater Tab iible on Ae Position (D ard (D3) Fest (D5) ounds (D6 Hummock	(B9) B) I) Ide (C2) Brital Image Brital (B) Brital (B) Brital (B) Brital (B) Brital (B) Brital (B)	gery (
HYDROLOGY Vetland Hydrolog Verimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Drift Deposi Algal Mat or Iron Deposit Surface Soil	gy Indicators: (minimum of one oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) c Crust (B4) ts (B5) I Cracks (B6) //sible on Aerial I egetated Concave as: esent? Yes ent? Yes fringe)	magery (Fee Surface	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1 marks) surface surface	Living Roots (C3) d Soils (C6) l) (LRR A)	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave I	rs (2 or m d Leaves (d La, and 4) erns (B10 Vater Tab iible on Ae Position (D ard (D3) Fest (D5) ounds (D6 Hummock	(B9) B) Ile (C2) Brial Image (D2) B) (LRR 2	gery (
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wa High Water Saturation (Water Marks Sediment D Iron Deposit Iron Deposit Inundation \ Sparsely Veter Table Presentaturation Present ncludes capillary	gy Indicators: (minimum of one oter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) c Crust (B4) ts (B5) I Cracks (B6) //sible on Aerial I egetated Concave as: esent? Yes ent? Yes fringe)	magery (Fee Surface	; check all t	hat apply Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1 marks) surface surface	Living Roots (C3) d Soils (C6) l) (LRR A)	Secon	ndary Indicato Water-Stainer (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic I Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave I	rs (2 or m d Leaves (d La, and 4) erns (B10 Vater Tab iible on Ae Position (D ard (D3) Fest (D5) ounds (D6 Hummock	(B9) B) Ile (C2) Brial Image (D2) B) (LRR 2	gery (

Project Site:	Lynnwood Link Extension			City/Coun	ty: <u>Seattle/King</u>	Sampling Date:	3/19/12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSE7-SP1	
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Rang	je: <u>S20, T26N, R4E</u>		
Landform (hillslope, te	rrace, etc.):		Loca	I relief (conc	ave, convex, none): <u>concave</u>	Slop	e (%): <u>1</u>	
Subregion (LRR):	<u>A</u>	Lat: <u>47.7</u>	3291615630		Long: <u>-122.32406708600</u>	Datum:	NAD83	
Soil Map Unit Name:	<u>Urban land</u>				NWI clas	sification: PEM		
Are climatic / hydrolog	ic conditions on the site typical for	this time of	/ear? Ye	es 🛚	No (If no, explain in	n Remarks.)		
Are Vegetation \square ,	Soil □, or Hydrology	☐, signific	antly disturbed	? Are "l	Normal Circumstances" present?	Yes	⊠ No □	
Are Vegetation \square ,	Soil □, or Hydrology	□, natural	ly problematic?	(If ne	eded, explain any answers in Re	marks.)		
0.11444 DV 05 5114	IDIN 00 Av. 1 1/2 1							
	DINGS – Attach site map sl			locations,	transects, important featu	res, etc.		_
Hydrophytic Vegetation	n Present?	Yes ⊠		Is the Samp	led Area	V	⊠ N- □	
Hydric Soil Present?	40	Yes ⊠		within a We	tland?	Yes	⊠ No □	
Wetland Hydrology Pre		Yes 🛛	I					
Remarks: The samp	ole plot is located approximately 20	0 feet south s	outheast of tre	e in the wetla	and, east side of the southern cat	tail patch.		
VEGETATION – Us	se scientific names of plants	s						
Tree Stratum (Plot size	•	Absolute	Dominant	Indicator	Dominance Test Worksheet:			
Ornamental maple	•	<u>% Cover</u> 15	<u>Species?</u> n/a*	Status -				
2	<u> </u>	10	<u>11/a_</u>	=	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u>	(A)	
3					Total Number of Deminent			
4					Total Number of Dominant Species Across All Strata:	<u>4</u>	(B)	
50% = <u>7.5</u> , 20% = <u>3</u>		<u>15</u>	= Total Cover		Dereant of Deminant Species			
Sapling/Shrub Stratum	n (Plot size: 5M)	<u></u>			Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>75</u>	(A/B))
1					Prevalence Index worksheet:			
2.					Total % Cover of:	Multip	olv bv:	
3					OBL species	x1 =	<u>-77-</u>	
4.					FACW species	x2 =		
5					FAC species	x3 =		
50% =, 20% =			= Total Cover		FACU species	x4 =		
Herb Stratum (Plot siz					UPL species	x5 =		
1. Typha latifolia	<u></u> ,	<u>70</u>	<u>yes</u>	OBL		(A)	(B)	
Agrostis capillaris		<u>40</u>	<u>yes</u>	FAC		Index = B/A =	(D)	
3. Festuca rubra		40 <u>20</u>	-	FAC	Hydrophytic Vegetation Indic			
Scirpus mircrocarp	nue	<u>20</u> 10	no no	OBL	☐ 1 – Rapid Test for Hydror			
5. <u>Lemna minor</u>	<u>500</u>	<u>10</u> 60	<u>no</u>	OBL OBL	□ 1 = Rapid Test for Hydrop□ 2 - Dominance Test is >5			
6. Holcus lanatus		<u>10</u>	<u>ves</u>	FAC				
7		10	<u>no</u>	<u>1 AC</u>	<u> </u>			
8.					4 - Morphological Adapta data in Remarks or on	tions" (Provide suppor a separate sheet)	rting	
9					5 - Wetland Non-Vascula			
10								
					☐ Problematic Hydrophytic	Vegetation (Explain)		
11		240	Total Cavar		¹ Indicators of hydric soil and we	etland hydrology must	t	
50% = 105, 20% = 42		<u>210</u>	= Total Cover		be present, unless disturbed or			
Woody Vine Stratum (25	1/00	EACH				\dashv
Rubus armeniacus	<u>S</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic			
2		25	Tet-10		• • •	es 🛛	No 🗆	
50% = <u>12.5</u> , 20% = <u>5</u>		<u>25</u>	= Total Cover		Present?			
% Bare Ground in Her							16 11	
	ded from calculations per chap tion. One tree in wetland (orname		ce ⊺he 1988 R	egion 9 Nati	onal Wetland Plant List and 1993	Supplement were us	ed for this	
		. ,						

Depth	Matrix		-	Redox Feat									
nches) Color (m	oist)	%	Color (m	oist) %	Type ¹ I	.oc²	Texture	_		Remark	s		
<u>0-6</u> <u>10YR</u> :	2/1						Si Loam						
6-20 10YR	<u> 2/1</u>			<u> </u>			Gr Sa Loa	<u>m</u>					
				<u> </u>									
				<u> </u>									
													
						<u> </u>							
													
ype: C= Concentration,					ated Sand Grains	² Loca		Pore Lining, I			-		
ydric Soil Indicators: (Applicable	to all LR						ators for Pro		Hydric :	Soils ³ :		
Histosol (A1)				Sandy Redox (S5)				2 cm Muck					
Histic Epipedon (A2)			Stripped Matrix (S6)				Red Parent		` '			
Black Histic (A3)				Loamy Mucky Minera	al (F1) (except M	_RA 1)		Very Shallo	ow Dark S	urface (T	F12)		
] Hydrogen Sulfide (/	•			Loamy Gleyed Matri				Other (Expl	lain in Rer	marks)			
Depleted Below Da		A11)		Depleted Matrix (F3)									
Thick Dark Surface	(A12)			Redox Dark Surface	(F6)		31 11						
Sandy Mucky Mine				Depleted Dark Surfa				ators of hydro tland hydrolo					
Sandy Gleyed Matr	x (S4)			Redox Depressions	(F8)			ess disturbe					
estrictive Layer (if pre	ent):												
ype:	•												
					Hydric	Soils Pres	sent?		Yes	\boxtimes	No	l	
	f sand in the	e lower h	orizon. High	concentrations of orga	nic matter.								
	f sand in the	e lower h	oorizon. High	concentrations of orga	nic matter.								
		e lower h	orizon. High	concentrations of orga	nic matter.								
emarks: Inclusions of the second of the seco	cators:				nic matter.		Second	ary Indicator	rs (2 or mo	ore requii	red)		
emarks: Inclusions of the second of the seco	cators: um of one re							ary Indicator /ater-Stained			red)		
YDROLOGY Vetland Hydrology Indirimary Indicators (minim Surface Water (A1	cators: um of one re		check all tha	at apply)	es (B9)		□ w		Leaves (B9)	red)		
IYDROLOGY Vetland Hydrology Indirimary Indicators (minim Surface Water (A1 High Water Table (cators: um of one re		check all tha	at apply) Water-Stained Leave	es (B9)		□ W	ater-Stained	Leaves (B9)	red)		_
IYDROLOGY Vetland Hydrology Indirimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3)	cators: um of one re		check all tha	at apply) Water-Stained Leave (except MLRA 1, 2,	es (B9) 4A, and 4B)		□ W (N	/ater-Stained	Leaves (I	B9) B)	red)		
IYDROLOGY //etland Hydrology Indirimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1)	cators: um of one re		check all tha	at apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	es (B9) 4A, and 4B) s (B13)		W (N	ater-Stained ILRA 1, 2, 4 rainage Patte	Leaves (I A, and 4E erns (B10) /ater Table	B9) (B) (C2)			
YDROLOGY //etland Hydrology Indi rimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits	cators: um of one re		check all tha	at apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	es (B9) 4A, and 4B) s (B13) dor (C1)	pots (C3)	W (N Di	Vater-Stained VILRA 1, 2, 4 rainage Patte ry-Season W	Leaves (I A, and 4E erns (B10) /ater Table ible on Ae	B9) (C2) (rial Imag			
PYDROLOGY Vetland Hydrology Indicators (minimal of the content	cators: um of one ro A2) (B2)		check all tha	at apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R	pots (C3)	W (N Di	/ater-Stained //LRA 1, 2, 4 rainage Patte rry-Season W aturation Vis	Leaves (I A, and 4E erns (B10) / ater Table ible on Ae Position (D	B9) (C2) (rial Imag)	
IYDROLOGY Vetland Hydrology Indi rimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust	cators: um of one ro A2) (B2)		check all tha	at apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4)		□ W (N (N □ Di Si) Si Gi Gi Si	//ater-Stained //LRA 1, 2, 4 rainage Patte ry-Season Waturation Vis eomorphic P	d Leaves (I A, and 4E erns (B10) / ater Table ible on Ae Position (D ard (D3)	B9) (C2) (rial Imag			
IYDROLOGY /etland Hydrology Indi rimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5)	eators: um of one ro A2) (B2) B4)		check all tha	at apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (C6)	W (N (N Di Di Di Di Di Di Di D	//ater-Stained //LRA 1, 2, 4 rainage Pattu rry-Season W aturation Vis eomorphic F hallow Aquita	A Leaves (I A, and 4E erns (B10) / ater Table ible on Ae Position (D ard (D3)	B9) (C2) (C3) (C4) (C5) (C5)	ery (C9))	
IYDROLOGY Vetland Hydrology Indi rimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack	Eators: um of one re A2) (B2) (B4) s (B6)	equired;	check all tha	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduces Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (Plants (D1) (LRR	C6)	W (N (N D) D) Si G Si G F / Ri	Acter-Stained ALRA 1, 2, 4 rainage Patte ry-Season Waturation Vis eomorphic P hallow Aquita AC-Neutral T	Leaves (I Leaves (I Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (I Leaves (I Le	B9) B9) Comparison of the co	ery (C9)		
MYDROLOGY Metland Hydrology Indi rimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible	cators: um of one re A2) (B2) (B4) s (B6) on Aerial Im-	equired;	check all tha	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (Plants (D1) (LRR	C6)	W (N (N D) D) Si G Si G F / Ri	Vater-Stained Vater-Stained Vater 1, 2, 4 Varainage Patte Viseason Waturation Viseomorphic Phallow Aquita AC-Neutral Taised Ant Mo	Leaves (I Leaves (I Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (I Leaves (I Le	B9) B9) Comparison of the co	ery (C9))	
PYDROLOGY Vetland Hydrology Indirimary Indicators (minimary Indicator	cators: um of one re A2) (B2) (B4) s (B6) on Aerial Im-	equired;	check all tha	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (Plants (D1) (LRR	C6)	W (N (N D) D) Si G Si G F / Ri	Vater-Stained Vater-Stained Vater 1, 2, 4 Varainage Patte Viseason Waturation Viseomorphic Phallow Aquita AC-Neutral Taised Ant Mo	Leaves (I Leaves (I Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (I Leaves (I Le	B9) B9) Comparison of the co	ery (C9))	
YDROLOGY Vetland Hydrology Indirimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible (Sparsely Vegetate)	cators: um of one re A2) (B2) (B4) s (B6) on Aerial Im-	equired;	check all tha	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (Plants (D1) (LRR	C6)	W (N (N D) D) Si G Si G F / Ri	Vater-Stained Vater-Stained Vater 1, 2, 4 Varainage Patte Viseason Waturation Viseomorphic Phallow Aquita AC-Neutral Taised Ant Mo	Leaves (I Leaves (I Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (I Leaves (I Le	B9) B9) Comparison of the co	ery (C9))	
YDROLOGY Vetland Hydrology Indirimary Indicators (minimary Indicators (minimary Indicators (Manager Indic	cators: um of one re A2) (B2) B4) s (B6) on Aerial Im.	equired; agery (B Surface (l	check all tha	at apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce: Recent Iron Reductic Stunted or Stresses Other (Explain in Rei	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (Plants (D1) (LRR marks)	C6)	W (N (N D) D) Si G Si G F / Ri	Vater-Stained Vater-Stained Vater 1, 2, 4 Varainage Patte Viseason Waturation Viseomorphic Phallow Aquita AC-Neutral Taised Ant Mo	Leaves (I Leaves (I Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (B10) Leaves (I Leaves (I Le	B9) B9) Comparison of the co	ery (C9)		
YDROLOGY Vetland Hydrology Indirimary Indicators (minimary Indicators (Manimary Indicators (cators: um of one re A2) (B2) (B4) s (B6) on Aerial Imaliconcave S	equired; agery (B' Surface (I	check all that	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reduction Stunted or Stresses Other (Explain in Research	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (in Plants (D1) (LRR marks)	A)	W (N	Vater-Stained Vater-Stained Vater 1, 2, 4 Varainage Patte Viseason Waturation Viseomorphic Phallow Aquita AC-Neutral Taised Ant Mo	d Leaves (I A, and 4E erns (B10) / ater Tablible on Ae Position (D ard (D3) Fest (D5) bunds (D6 dummocks	B9) B9) Comparison of the co	ery (C9)	No	
MYDROLOGY Vetland Hydrology Indirimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (minimary Indicators (manimary Indicators	cators: um of one re A2) (B2) B4) s (B6) on Aerial Imalian Concave S Yes Yes Yes	equired; agery (B Surface (I	check all that	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reduction Stunted or Stresses Other (Explain in Research Depth (inches): Depth (inches):	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (in Plants (D1) (LRR marks) 6 surface surface	C6) A) Wetla	W (N	vater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P hallow Aquita AC-Neutral T aised Ant Mo rost-Heave H	d Leaves (I A, and 4E erns (B10) / ater Tablible on Ae Position (D ard (D3) Fest (D5) bunds (D6 dummocks	B9) (C2) (C2) (C3) (C3) (C4) (C4) (C5) (C4) (C7)	ery (C9)		
IYDROLOGY Vetland Hydrology Indi rimary Indicators (minim Surface Water (A1 High Water Table (Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible	cators: um of one re A2) (B2) B4) s (B6) on Aerial Imalian Concave S Yes Yes Yes	equired; agery (B Surface (I	check all that	water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reduction Stunted or Stresses Other (Explain in Research Depth (inches): Depth (inches):	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living R d Iron (C4) on in Tilled Soils (in Plants (D1) (LRR marks) 6 surface surface	C6) A) Wetla	W (N	vater-Stained ILRA 1, 2, 4 rainage Patte ry-Season W aturation Vis eomorphic P hallow Aquita AC-Neutral T aised Ant Mo rost-Heave H	d Leaves (I A, and 4E erns (B10) / ater Tablible on Ae Position (D ard (D3) Fest (D5) bunds (D6 dummocks	B9) (C2) (C2) (C3) (C3) (C4) (C4) (C5) (C4) (C7)	ery (C9)		

Project Site:	Lynnwood Link Extension			City/Count	ty: <u>Seattle/King</u>	Sampling Date:	3/19/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSE7-SP2
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Rang	je: <u>S20, T26N, R4E</u>	
Landform (hillslope, ter	rrace, etc.):		Loca	I relief (conca	ave, convex, none): <u>convex</u>	Slope ((%): <u>2</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.7</u>	3291045000		Long: <u>-122.32400494100</u>	Datum: NA	<u>1D83</u>
Soil Map Unit Name:	<u>Urban land</u>				NWI class	sification: <u>Upland</u>	
Are climatic / hydrologi	ic conditions on the site typical fo	or this time of y	/ear? Ye	es 🛛	No	n Remarks.)	
Are Vegetation \square ,	Soil □, or Hydrology	☐, signific	antly disturbed	? Are "1	Normal Circumstances" present?	Yes	⊠ No □
Are Vegetation \square ,	Soil □, or Hydrology	☐, natural	ly problematic?	' (If nee	eded, explain any answers in Re	marks.)	
SUMMARY OF FIN	DINGS – Attach site map s	howing san	npling point	locations,	transects, important featur	es, etc.	
Hydrophytic Vegetation	n Present?	Yes 🛛	No 🗆				
Hydric Soil Present?		Yes \square		Is the Samp within a We		Yes	□ No ⊠
Wetland Hydrology Pre	esent?	Yes 🛛	No 🗆				
Remarks: The samp mowed.	le plot is located east of the wetla	and in mowed	grass, approxi	mately 30 fee	et southeast of ornamental maple	tree. No SP flag becau	se area is
VEGETATION - Us	se scientific names of plant			1			
Tree Stratum (Plot size	e: <u>10M</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet:		
1					Number of Dominant Species	<u>3</u>	(A)
2					That Are OBL, FACW, or FAC:	-	()
3					Total Number of Dominant	<u>4</u>	(B)
4					Species Across All Strata:	_	` ,
50% =, 20% = _			= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>75</u>	(A/B)
Sapling/Shrub Stratum	<u>ı</u> (Plot size: <u>5M</u>)						
1					Prevalence Index worksheet:		
2					Total % Cover of:	<u>Multiply</u>	<u>by:</u>
3					OBL species	x1 =	
4					FACW species	x2 =	
5					FACILITY STATES	x3 =	
50% =, 20% = _			= Total Cover		FACU species	x4 =	
Herb Stratum (Plot size	e: <u>2M</u>)				UPL species	x5 =	
Agrostis capillaris		<u>40</u>	<u>yes</u>	<u>FAC</u>		(A)	(B)
2. <u>Festuca rubra</u>		<u>30</u>	<u>ves</u>	<u>FAC</u>		Index = B/A =	
3. <u>Holcus lanatus</u>		<u>30</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indic		
4. <u>Schedonorus phoe</u>		<u>5</u>	<u>no</u>	<u>FACU</u>	☐ 1 – Rapid Test for Hydrop	-	
5. <u>Taraxicum officina</u>	<u>le</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	2 - Dominance Test is >5	0%	
6					☐ 3 - Prevalence Index is <3	3.0 ¹	
7					4 - Morphological Adaptat data in Remarks or on	tions ¹ (Provide supporting	ng
8							
9					5 - Wetland Non-Vascular	r Plants'	
10					☐ Problematic Hydrophytic	Vegetation ¹ (Explain)	
11					¹ Indicators of hydric soil and we	etland hydrology must	
50% = <u>55</u> , 20% = <u>22</u>		<u>110</u>	= Total Cover		be present, unless disturbed or		
Woody Vine Stratum (
1. Rubus armeniacus	ì	<u>10</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic		
2					Vegetation Ye	es 🛛	No 🗆
$50\% = \underline{5}, 20\% = \underline{2}$		<u>10</u>	= Total Cover		Present?		
% Bare Ground in Her							
	he 1988 Region 9 National Wetla ance-tolerant plants commonly for				used for this delineation. Domin	ant herbaceous species	are all FAC

SOIL Sampling Point: WSE7-SP2 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (inches) Color (moist) % Color (moist) % Type¹ Loc² Texture Remarks 10YR 3/1 100 0-4 Loam 4-14 10YR 3/2 100 Gr Sa Loam with cobbles ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes No \boxtimes Depth (inches): Remarks: Profile is compacted. Various inclusions. . **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) П Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? \boxtimes Wetland Hydrology Present? Yes \boxtimes No Yes No Depth (inches): 4 (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Seeping in at 4 inches below the surface. Compacted soils are likely creating a restrictive layer.

Project Site:	Lynnwood Link Extension			City/Cour	nty: <u>Seattle/King</u>	Sampling Date:	3/21	/12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WS	E8-SF	<u>'1</u>
Investigator(s):	M. Maynard, C. Worsley				Section, Township, R	Range: <u>S20, T26N, R4</u>	<u>E</u>		
Landform (hillslope, te	rrace, etc.):		Loc	al relief (cond	eave, convex, none): none	Slo	pe (%):	<u>0</u>	
Subregion (LRR):	<u>A</u>	Lat: 47.	73149499190		Long: -122.3233678550	<u>0</u> Datum:	NAD83	<u>3</u>	
Soil Map Unit Name:	<u>Urban land</u>				NWI	classification: <u>PFO</u>			
Are climatic / hydrolog	ic conditions on the site typical	for this time of	year?	∕es □	No 🔲 (If no, expla	in in Remarks.)			
Are Vegetation □,	Soil \square , or Hydrology	□, signif	cantly disturbe	d? Are '	'Normal Circumstances" prese	ent? Yes	S	No	
Are Vegetation □,	Soil \square , or Hydrology	☐, natura	ally problematio	? (If ne	eded, explain any answers in	Remarks.)			
SUMMARY OF FIN	IDINGS – Attach site map	showing sa	mpling poin	t locations	transects, important fea	atures, etc.			
Hydrophytic Vegetatio	n Present?	Yes 2	No □						
Hydric Soil Present?		Yes 🛭	☑ No □	Is the Samp		Yes	S	No	
Wetland Hydrology Pre	esent?	Yes 2	I No □	Within a Vi	, tiana i				
Remarks: The same	ole plot is located approximately	15 feet northe	east of NB Thor	nton Creek 5	th Ave crossing. No paired ur	oland sample plot.			
Tromano.	no procto recatou approximator,	10 1001 1101411			arrive erecemignite panea ap	nana campio pica			
VEGETATION – Us	se scientific names of pla	nts							
Tree Stratum (Plot siz		Absolute	Dominant	Indicator	Dominance Test Workshe	et:			
1. Alnus rubra	,	% Cover	Species?	Status FAC					
2. Salix lucida		<u>35</u> <u>60</u>	<u>yes</u>	FACW	Number of Dominant Species That Are OBL, FACW, or Face				(A)
3		<u>00</u>	<u>yes</u>	IACW					
4.					Total Number of Dominant Species Across All Strata:	<u>4</u>			(B)
50% = <u>47.5,</u> 20% = <u>19</u>	1	<u>95</u>	= Total Cove						
Sapling/Shrub Stratun		<u>33</u>	= 10tal Cove	ži	Percent of Dominant Specie That Are OBL, FACW, or FA				(A/B)
1	<u> </u>				Prevalence Index worksho	eet:			
2					Total % Cover		iply by:		
3					OBL species	x1 =			
4					FACW species	x1 =			
5					FAC species	x3 =			
50% =, 20% =			= Total Cove		FACU species	x4 =			
Herb Stratum (Plot siz			= 10tal 00V	, 1	UPL species	x5 =			
•	·	20	1/00	EAC		<u> </u>			2)
1. Athyrium filix-femi	<u>11a</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	Column Totals:	(A)		(E	3)
2						nce Index = B/A =	_		
3					Hydrophytic Vegetation Ir				
4					1 – Rapid Test for Hy	· · · -			
5					2 - Dominance Test is	; >50%			
6					☐ 3 - Prevalence Index i	_			
7					4 - Morphological Ada	aptations ¹ (Provide supp	orting		
8						r on a separate sheet)			
9					5 - Wetland Non-Vaso	ular Plants			
10					☐ Problematic Hydrophy	ytic Vegetation ¹ (Explair	n)		
11					¹ Indicators of hydric soil and	d watland hydrology mu	ct		
$50\% = \underline{10}, 20\% = \underline{4}$		<u>20</u>	= Total Cove	er	be present, unless disturbed		51		
Woody Vine Stratum ((Plot size: <u>5M</u>)								
1. Rubus armeniacus	<u>S</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	Harden books				
2					Hydrophytic Vegetation	Yes 🛛	No		
$50\% = \underline{10}, 20\% = \underline{4}$		<u>20</u>	= Total Cove	er	Present?				
% Bare Ground in Her	rb Stratum 80								
Remarks: T	he 1988 Region 9 National We	tland Plant Lis	t and 1993 Sup	plement were	e used for this delineation.				
1									

Depth	Matrix				Redox Feat	uies		_						
nches)	Color (moist)	%	Colo	(moist)) %	Type ¹	Loc ²	Texture			Rema	rks		
<u>0-10</u>	10YR 2/1	<u>100</u>	_					v. Mu Lo	am	_				
<u>10-20</u>	10YR 3/1	<u>100</u>	_					v. Mu Lo	am	_				
20-22	10Y 3/1	<u>100</u>	_					Gr San	<u></u>	_				
			_							_				
			_							_				
			_							_				
-			_							-				
			_							-				
					CS=Covered or Co	ated Sand	d Grains. Lo		=Pore Lining,				2	
	ndicators: (Applic	able to all		_					cators for Pr		Hydric	Soil	s³:	
Histoso				_	Sandy Redox (S5)				2 cm Muc					
	pipedon (A2)			_	Stripped Matrix (S6)					nt Material	, ,			
_	listic (A3)			_	oamy Mucky Minera		(cept MLRA 1)		-	low Dark S		(TF12	2)	
	en Sulfide (A4)				oamy Gleyed Matri	, ,			Other (Exp	plain in Re	marks)			
	d Below Dark Surf	ace (A11)		_	Depleted Matrix (F3)									
	ark Surface (A12)			_	Redox Dark Surface			31m al:	antora of burd	والمرام والمرام			ı	
	Mucky Mineral (S1			_	Depleted Dark Surfa	` '			cators of hyd etland hydro				l	
	Gleyed Matrix (S4)		L] R	Redox Depressions	(F8)	Τ	u	nless disturb	ed or prob	lematic.			
	ayer (if present):													
pe:										Yes	\boxtimes			
	-	from 0 to 2	0 inches h	as high	organic content with	h varying o	Hydric Soils P						No	
emarks:	Sulfidic odor. Soil	from 0 to 2	0 inches h	as high	organic content with	h varying o								
YDROLOG	Sulfidic odor. Soil		0 inches h	as high	organic content with	h varying o								
emarks: YDROLOG Vetland Hyd	Sulfidic odor. Soil	:				h varying o		nposition.	ndary Indicato		ore requ	uired)		
YDROLOO /etland Hyd	Sulfidic odor. Soil	:	d; check al	I that ap				Secon	idary Indicato Water-Staine	ors (2 or m		uired)		
YDROLOG Vetland Hyd rimary Indica	Sulfidic odor. Soil SY rology Indicators ators (minimum of	:	d; check al	I that ap	oply)	es (B9)	degrees of decon	Secon		ors (2 or m	(B9)	uired)		
YDROLOG fetland Hyd rimary Indica Surface High W	Sulfidic odor. Soil SY rology Indicators ators (minimum of	:	d; check al	I that ap	oply) Vater-Stained Leave	es (B9)	degrees of decon	Secon	Water-Staine	ors (2 or m ed Leaves ((B9) B)	uired)		
YDROLOG Tetland Hyd Frimary Indica Surface High W Saturat	Sulfidic odor. Soil Salfidic odor. Soil	:	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2,	əs (B9) 4 A, and 4	degrees of decon	Secon	Water-Staine	ors (2 or m ed Leaves (4A, and 4 tterns (B10	(B9) B)	uired)		
YDROLOG etland Hyd imary Indica Surface High W Saturat Water	Sulfidic odor. Soil SY rology Indicators ators (minimum of a Water (A1) dater Table (A2) ion (A3)	:	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11)	es (B9) 4A, and 4 s (B13)	degrees of decon	Secon	Water-Staine (MLRA 1, 2,	ors (2 or m ed Leaves of 4A, and 4 tterns (B10 Water Tab	(B9) B) (b)	,		
YDROLOG etland Hyd rimary Indica Graph High W Graph Saturat Graph Water I Graph Sedime	Sulfidic odor. Soil	:	d; check al	I that ap (4) SA	oply) Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	es (B9) 4A, and 4 s (B13) dor (C1)	degrees of decon	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \	ors (2 or m ed Leaves (4A, and 4) tterns (B10 Water Tab sible on Ae	(B9) B) I) Ie (C2) erial Ima	,		
YDROLOG Tetland Hyd rimary Indicat Surface High W Saturat Water I Sedime	Sulfidic odor. Soil Sulfidic odor. Soil Group Indicators ators (minimum of Water (A1) Vater Table (A2) vion (A3) Marks (B1) ent Deposits (B2)	:	d; check al	I that ap	oply) Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc	es (B9) 4A, and 4 s (B13) dor (C1) res along l	degrees of decon	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season Vi	ors (2 or m ad Leaves (4A, and 4) tterns (B10 Water Tab sible on Ae Position (E	(B9) B) I) Ie (C2) erial Ima	,		
YDROLOG Vetland Hyd rimary Indica Surface High W Saturat Water I Sedime Drift De Algal M	Sulfidic odor. Soil Sulfidic odor. Soil Frology Indicators ators (minimum of Water (A1) Pater Table (A2) Join (A3) Marks (B1) Pater Deposits (B2) Paposits (B3)	:	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees de	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic	ors (2 or m ed Leaves (4A, and 4 tterns (B10 Water Tab sible on Ae Position (D3)	(B9) B) I) Ie (C2) erial Ima	,		
YDROLOG Vetland Hyd rimary Indica Surface High W Saturat Water I Sedime Drift De Algal W	Sulfidic odor. Soil Sulfidic odor. Soil GY Tology Indicators ators (minimum of a Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)	:	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dxidized Rhizospher Presence of Reduce	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui	ors (2 or m ed Leaves (4A, and 4) tterns (B10 Water Tab sible on Ae Position (I tard (D3) Test (D5)	(B9) B) O) le (C2) erial Ima D2)	agery		
YDROLOG Vetland Hyd rimary Indica Surface High W Saturat Sedime Drift De Algal M Iron De Surface	Sulfidic odor. Soil Sulfidic odor. Soil GY rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5)	: one require	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dixidized Rhizospher Presence of Reduces Recent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec Plants (D'	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral	ors (2 or med Leaves of 4A, and 4) tterns (B10) Water Tab sible on A6 Position (D6) Test (D5) Mounds (D6)	(B9) (B9)	agery		
YDROLOG etland Hyd frimary Indica Surface Water Sedime Drift De Algal M Iron De Surface Inundar	Sulfidic odor. Soil Sulfidic odor. Soil Frology Indicators ators (minimum of Water (A1) Vater Table (A2) Vater Table (A2) Vater (B1) Vater Deposits (B2) Vater Deposits (B3) Vater Order (B4) Vater Order (B4) Vater Order (B5) Vater Order (B6) V	: one require	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec Plants (D'	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or med Leaves of 4A, and 4) tterns (B10) Water Tab sible on A6 Position (D6) Test (D5) Mounds (D6)	(B9) (B9)	agery		
YDROLOG etland Hyd imary Indica Surface High W Saturat Water Sedime Drift De Algal M Iron De Surface	Following the control of the control	: one require	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec Plants (D'	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or med Leaves of 4A, and 4) tterns (B10) Water Tab sible on A6 Position (D6) Test (D5) Mounds (D6)	(B9) (B9)	agery		
YDROLOG Tetland Hyd rimary Indica Surface High W Saturat Sedime Soline Surface In Iron De Surface Inundar Sparse	Foliation Crust (B4) Posits (B5) Posits (B5) Posits (B5) Posits (B6) Posits (B	: one require	d; check al	I that ap	oply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dxidized Rhizospher Presence of Reduce Recent Iron Reduction	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec Plants (D'	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or med Leaves of 4A, and 4) tterns (B10) Water Tab sible on A6 Position (D6) Test (D5) Mounds (D6)	(B9) (B9)	agery		
YDROLOG Vetland Hyd rimary Indica Surface High W Saturat Sedime Sorift De Algal M Iron De Inundae Inundae Sparse	Sulfidic odor. Soil Sulfidic odor. Soil GY Fology Indicators ators (minimum of a Water (A1) Jater Table (A2) Join (A3) Marks (B1) Jent Deposits (B2) Posits (B3) Jent Orcust (B4) Posits (B5) A Soil Cracks (B6) Join Visible on Aer Joy Vegetated Concations: Teresent?	: one require	d; check al	I that ap	Doply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dixidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stresses Other (Explain in Res	es (B9) 4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D' marks)	degrees of decondary degrees of decondary degrees of decondary decondary degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or med Leaves of 4A, and 4) tterns (B10) Water Tab sible on A6 Position (D6) Test (D5) Mounds (D6)	(B9) (B9)	agery		
YDROLOG /etland Hyd rimary Indica Surface High W Saturat Sedime Drift De Algal M Iron De Inundar Sparse ield Observ urface Water /ater Table Faturation Prencludes capi	Sulfidic odor. Soil Sulfidic odor. Soil GY Tology Indicators ators (minimum of a Water (A1) dater Table (A2) don (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) a Soil Cracks (B6) tion Visible on Aer ly Vegetated Conc ations: r Present? Present? esent? llary fringe)	: one require ial Imagery ave Surface ies incomplete in the content of the conte	d; check al	I that ap	poply) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates dydrogen Sulfide Oc Dixidized Rhizospher Presence of Reduces Recent Iron Reduction Stunted or Stresses Other (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec Plants (D' marks) 8 surface	degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or med Leaves (4A, and 4) tterns (B10) Water Tab sible on Acrosition (D3) Test (D5) Mounds (D6) Hummock	(B9) (B9)	agery	(C9)	
YDROLOG Vetland Hyd rimary Indica Surface High W Saturat Sedime Drift De Hon De Hundae Sparse Vetla Observ Urface Wate Vater Table Faturation Pre-	Sulfidic odor. Soil Sulfidic odor. Soil GY Tology Indicators ators (minimum of a Water (A1) dater Table (A2) don (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) a Soil Cracks (B6) tion Visible on Aer ly Vegetated Conc ations: r Present? Present? esent? llary fringe)	: one require ial Imagery ave Surface ies incomplete in the content of the conte	d; check al	I that ap	Depty) Water-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dixidized Reizospher Presence of Reduce Recent Iron Reductio Stunted or Stresses Other (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tillec Plants (D' marks) 8 surface	degrees of decondary degrees degre	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season \ Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant \(\) Frost-Heave	ors (2 or med Leaves (4A, and 4) tterns (B10) Water Tab sible on Acrosition (D3) Test (D5) Mounds (D6) Hummock	(B9) (B9) (B9) (B) (B) (B) (B) (B	A)	(C9)	

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: Shoreline/King	Sampling Date:	3/15/12
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSH1-SP1
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ran	ge: <u>S17, T26N, R4E</u>	
Landform (hillslope, terrace, etc.):		Loca	I relief (conc	ave, convex, none): <u>concave</u>	Slop	e (%): <u>2</u>
Subregion (LRR): <u>A</u>	Lat: 47.7	3447093280		Long: <u>-122.32399213200</u>	Datum:	NAD83
Soil Map Unit Name: <u>Urban Land</u>				NWI clas	ssification: PEM	
Are climatic / hydrologic conditions on the site typical for	this time of y	/ear? Ye	es 🗆	No 🛛 (If no, explain	in Remarks.)	
Are Vegetation \square , Soil \square , or Hydrology	□, signific	antly disturbed	? Are "	Normal Circumstances" present	? Yes	⊠ No □
Are Vegetation \square , Soil \square , or Hydrology	□, natural	ly problematic?	(If ne	eded, explain any answers in Re	emarks.)	
SUMMARY OF FINDINGS – Attach site map sh		• • •	locations,	transects, important featu	res, etc.	
Hydrophytic Vegetation Present?	Yes 🛚		Is the Samp	alad Aras		
Hydric Soil Present?	Yes 🛚		within a We		Yes	⊠ No □
Wetland Hydrology Present?	Yes 🛚	No 🗆				
Remarks: The sample plot is located in the northern a			ately 15 feet	south southwest of a birch tree.	Heavy rains during sit	te investigation
and more than average precipitation for the	five days prid	or.				
VEGETATION – Use scientific names of plants						1
<u>Tree Stratum</u> (Plot size: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:	i	
<u>Betula papyrifera(overhaning from boundary)</u>	30	<u>ves</u>	FAC	Number of Dominant Species	4	(4)
2				That Are OBL, FACW, or FAC	: <u>4</u>	(A)
3				Total Number of Dominant	4	(P)
4				Species Across All Strata:	<u>4</u>	(B)
$50\% = \underline{15}, 20\% = \underline{6}$	<u>30</u>	= Total Cover		Percent of Dominant Species	<u>100</u>	(A/B)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC	: 100	(A/B)
1				Prevalence Index worksheet	:	
2				Total % Cover of:	Multip	oly by:
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cover		FACU species	x4 =	
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
1. <u>Juncus effusus</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	_(A)	(B)
2. Equisetum fluviatile	<u>40</u>	<u>ves</u>	<u>OBL</u>	Prevalence	! Index = B/A =	
3. Agrostis capillaris	<u>15</u>	<u>no</u>	FAC	Hydrophytic Vegetation Indi	cators:	
4. Ranunculus repens	<u>35</u>	<u>ves</u>	<u>FACW</u>	☐ 1 – Rapid Test for Hydro	phytic Vegetation	
5. <u>Epilobium ciliatum</u>	<u>2</u>	<u>no</u>	<u>FACW</u>	□ 2 - Dominance Test is >	50%	
6. <u>Hypochaeris radicata</u>	<u>2</u>	<u>no</u>	<u>FACU</u>	☐ 3 - Prevalence Index is ≤	<u><</u> 3.0¹	
7. <u>Taraxacum officinale</u>	<u>2</u>	<u>no</u>	<u>FACU</u>	4 - Morphological Adapta		rting
8. <u>Trifolium pratense</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	data in Remarks or or	n a separate sheet)	
9. <u>Holcus lanatus</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	☐ 5 - Wetland Non-Vascula	ar Plants ¹	
10. Rorippa nasturtium-aquaticum	<u>25</u>	<u>ves</u>	<u>OBL</u>	☐ Problematic Hydrophytic	Vegetation ¹ (Explain)	
11				1		
$50\% = \underline{79}, 20\% = \underline{31.6}$	<u>158</u>	= Total Cover		Indicators of hydric soil and w be present, unless disturbed o		í
Woody Vine Stratum (Plot size: 5M)				,, ,		
1. Rubus ursinus	<u>2</u>	<u>no</u>	<u>FACU</u>			
2. Rubus armeniacus (overhanging from upland)	<u>8</u>	<u>n/a*</u>	<u>FACU</u>	Hydrophytic Vogotation	∕es ⊠	No □
$50\% = \underline{5}, 20\% = \underline{2}$	<u>10</u>	= Total Cover	•	Vegetation Y Present?	′es ⊠	No 🗆
% Bare Ground in Herb Stratum 20						
Remarks: *excluded from calculations per chapt					nsidered dominant. The	e 1988 Region
9 National Wetland Plant List and 1993 S	upplement w	ere used for th	is delineatior	n.		

Depth	Matrix			Redox I	Features							
nches) Color (m	oist)	%	Color (m	oist) %	Type ¹	Loc ²	Texture		F	Remarks		
<u>0-8</u> <u>10YR</u>	3/1	100					Si Loam	<u>n</u>				
<u>8-18</u> <u>2.5Y</u>	<u>//1</u>	<u>95</u>	2.5Y 4/	<u>6</u> <u>5</u>	<u>C</u>	<u>M</u>	Gr Sa Loa	<u></u>				
				<u> </u>								
												
												
												
ype: C= Concentration						Grains. Lo		Pore Lining, M		ludaia Ca	-:I- ³ .	
/dric Soil Indicators: Histosol (A1)	Applicable	to all Lr	kks, uniess	•				ators for Prob		iyaric S	olis :	
. ,)\			Sandy Redox (S	•			2 cm Muck (A	•	.E3/		
Histic Epipedon (A Black Histic (A3)	-)			Stripped Matrix (Loamy Mucky M		cent MI P A 1)		Very Shallow	,	,	12)	
Hydrogen Sulfide (14)			Loamy Gleyed M		cept wilka i)		Other (Expla			12)	
Depleted Below Da	-	(Δ11)		Depleted Matrix	, ,			Other (Expla	IIII III IXEIII	aino)		
		(Д11)		Redox Dark Surf								
Thick Dark Surface Sandy Mucky Mine	. ,			Depleted Dark S			³ Indic	cators of hydro	phytic vege	etation a	nd	
Sandy Gleyed Mat				Redox Depression	` ,		we	etland hydrolog	y must be	present		
estrictive Layer (if pre	. ,			Trodox Boprocon	0110 (1 0)		un	nless disturbed	or problem	nauc.		
pe:	, .											
epth (inches):	_					Hydric Soils Pr	esent?		Yes	\boxtimes	No	
emarks: Inclusions	of 10YR 2/1	sandy lo	am from 15	inches and below.								
YDROLOGY		sandy lo	am from 15	inches and below.								
YDROLOGY letland Hydrology Ind	cators:						Sacara	dany Indicators	/2 or more	o roquiro	d)	
YDROLOGY letland Hydrology Ind rimary Indicators (minin	cators: um of one r		check all tha	at apply)	ooves (B0)			dary Indicators	<u> </u>		d)	
YDROLOGY fetland Hydrology Ind rimary Indicators (minin Surface Water (Af	cators: um of one r			at apply) Water-Stained L	` ,	IR)	□ V	Vater-Stained I	Leaves (B		d)	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table	cators: um of one r		check all tha	at apply) Water-Stained L (except MLRA 1	I, 2, 4A, and 4	PB)	U V	Vater-Stained I	Leaves (BS		d)	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3)	cators: um of one r		check all tha	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11)	I, 2, 4A, and 4	B)	V (I	Vater-Stained L MLRA 1, 2, 4A Drainage Patter	Leaves (B9 4, and 4B) rns (B10)	9)	d)	
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1)	cators: um of one r) (A2)		check all tha	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb	I, 2, 4A , and 4	.в)	V	Vater-Stained I MLRA 1, 2, 4A Drainage Patter Dry-Season Wa	Leaves (BS , and 4B) rns (B10) ater Table	(C2)		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits	cators: um of one r) (A2)		check all tha	at apply) Water-Stained L. (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide	rates (B13) e Odor (C1)			Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib	Leaves (BS A, and 4B) rns (B10) ater Table ((C2)		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	cators: um of one r) A2) (B2)		check all tha	at apply) Water-Stained L. (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos	rates (B13) e Odor (C1) pheres along L	Living Roots (C3)		Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Was Saturation Visib Geomorphic Po	Leaves (BS Leaves (BS Leaves (BS) rns (B10) ater Table (pole on Aeria position (D2)	(C2)		
PDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust	cators: um of one r) A2) (B2)		check all tha	at apply) Water-Stained L. (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec	rates (B13) e Odor (C1) pheres along I	Living Roots (C3)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar	Leaves (BS a, and 4B) rns (B10) ater Table of ble on Aeria position (D2) rd (D3)	(C2)		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5)	cators: num of one r (A2) (B2)		check all tha	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red	rates (B13) e Odor (C1) pheres along I duced Iron (C4 uction in Tilled	Living Roots (C3)) d Soils (C6)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te	Leaves (BS Leaves	(C2) al Image		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (Af High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack	cators: um of one r) (A2) (B2) (B4) s (B6)	required;	check all tha	at apply) Water-Stained L. (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec	rates (B13) e Odor (C1) pheres along L duced Iron (C4) uction in Tilled ses Plants (D1	Living Roots (C3)) d Soils (C6)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar	Leaves (BS Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible	cators: um of one r) (A2) (B2) (B4) s (B6) on Aerial Im	required;	check all tha	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres	rates (B13) e Odor (C1) pheres along L duced Iron (C4) uction in Tilled ses Plants (D1	Living Roots (C3)) d Soils (C6)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (Af High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible Sparsely Vegetate	cators: um of one r) (A2) (B2) (B4) s (B6) on Aerial Im	required;	check all tha	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres	rates (B13) e Odor (C1) pheres along L duced Iron (C4) uction in Tilled ses Plants (D1	Living Roots (C3)) d Soils (C6)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible Sparsely Vegetate eld Observations:	cators: um of one r) (A2) (B2) (B4) s (B6) on Aerial Im	required;	check all tha	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres	rates (B13) e Odor (C1) pheres along I duced Iron (C4 uction in Tilled ses Plants (D1 in Remarks)	Living Roots (C3)) d Soils (C6)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible Sparsely Vegetate eld Observations: urface Water Present?	cators: um of one r) (A2) (B2) (B4) s (B6) on Aerial Im	required;	check all that	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres Other (Explain in	rates (B13) e Odor (C1) pheres along L duced Iron (C4) uction in Tilled ses Plants (D1 n Remarks)	Living Roots (C3)) d Soils (C6)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image		
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Influence Soil Crack Inundation Visible Sparsely Vegetate eld Observations: urface Water Present? aturation Present?	cators: num of one r) (A2) (B2) (B4) s (B6) on Aerial Im d Concave S	required; nagery (B	check all that	wat apply) Water-Stained L. (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres Other (Explain in	rates (B13) e Odor (C1) pheres along L duced Iron (C4 uction in Tilled ses Plants (D1 n Remarks) es):	Living Roots (C3)) d Soils (C6) I) (LRR A)	V	Water-Stained L MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image		0
YDROLOGY etland Hydrology Ind imary Indicators (minin Surface Water (A1 High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Infor Deposits (B3) Information Visible Sparsely Vegetate eld Observations: urface Water Present? aturation Present? aturation Present? aturation Present?	cators: num of one r) (A2) (B2) (B4) s (B6) on Aerial Im d Concave s Yes Yes	required; nagery (B Surface (check all that	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres Other (Explain in Depth (inche Depth (inche	rates (B13) e Odor (C1) pheres along L duced Iron (C4) uction in Tilled ses Plants (D1 n Remarks) es): es): surface	Living Roots (C3)) I Soils (C6) I) (LRR A) Wet	V	Water-Stained I MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image (LRR A)	ry (C9)	0
YDROLOGY Tetland Hydrology Indicators (mining) Surface Water (A1) High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust Iron Deposits (B5) Surface Soil Crack Inundation Visible	cators: num of one r) (A2) (B2) (B4) s (B6) on Aerial Im d Concave s Yes Yes	required; nagery (B Surface (check all that	at apply) Water-Stained L (except MLRA 1 Salt Crust (B11) Aquatic Inverteb Hydrogen Sulfide Oxidized Rhizos Presence of Rec Recent Iron Red Stunted or Stres Other (Explain in Depth (inche Depth (inche	rates (B13) e Odor (C1) pheres along L duced Iron (C4) uction in Tilled ses Plants (D1 n Remarks) es): es): surface	Living Roots (C3)) I Soils (C6) I) (LRR A) Wet	V	Water-Stained I MLRA 1, 2, 4A Drainage Patter Dry-Season Wa Saturation Visib Geomorphic Po Shallow Aquitar FAC-Neutral Te Raised Ant Mou	Leaves (BS L, and 4B) rns (B10) ater Table (ble on Aeria sistion (D2) rd (D3) est (D5) unds (D6) ((C2) al Image (LRR A)	ry (C9)	0

Project Site: <u>Lynnwood Link Extension</u>			City/Cour	nty: Shoreline/King	Sampling Date:	3/15/12	
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSH1-SP2	
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ran	nge: <u>S17, T26N, R4E</u>		
Landform (hillslope, terrace, etc.):		Loc	al relief (cond	ave, convex, none): <u>convex</u>	Slope	e (%): <u>4</u>	
Subregion (LRR): <u>A</u>	Lat: <u>47.</u>	73441940360		Long: <u>-122.32406798700</u>	Datum:	NAD83	
Soil Map Unit Name: <u>Urban Land</u>				NW I cla	ssification: <u>Upland</u>		
Are climatic / hydrologic conditions on the site typical for	or this time of	year?	Yes	No 🛛 (If no, explain	in Remarks.)		
Are Vegetation □, Soil □, or Hydrology	☐, signifi	cantly disturbe	d? Are '	Normal Circumstances" present	t? Yes	⊠ No □	
Are Vegetation □, Soil □, or Hydrology	☐, natura	Illy problemation	c? (If ne	eded, explain any answers in R	emarks.)		
SUMMARY OF FINDINGS – Attach site map s	showing sa	mpling poin	t locations	transects, important feat	ures, etc.		
Hydrophytic Vegetation Present?	Yes 🛭	No 🗆					
Hydric Soil Present?	Yes [No ⊠	Is the Samp		Yes	□ No ⊠	
Wetland Hydrology Present?	Yes 🛭	No 🗆					
Remarks: The sample plot is located northwest of the	e wetland (be	tween north ar	nd west arms)	on a grass slope, between nort	n and west arms. Heav	y rains during site	е
investigation and more than average preci	pitation for th	e five days pric	or.				
VEGETATION – Use scientific names of plan	ts						
Tree Stratum (Plot size: 10M)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet	:		
1. Alnus rubra (overhanging from S. WL boundary)	<u>40</u>	<u>n/a*</u>	<u>FAC</u>	Number of Dominant Species		(4)	
2				That Are OBL, FACW, or FAC		(A)	
3				Total Number of Dominant	0	(D)	
4				Species Across All Strata:	<u>2</u>	(B)	
50% =, 20% =		= Total Cove	er	Percent of Dominant Species	100	/ A /E	٥١
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC): <u>100</u>	(A/E	(د
1				Prevalence Index workshee	t:		
2				Total % Cover of	: Multip	ly by:	
3				OBL species	x1 =		
4				FACW species	x2 =		
5				FAC species	x3 =		
50% =, 20% =		= Total Cove	er	FACU species	x4 =		
Herb Stratum (Plot size: 2M)				UPL species	x5 =		
1. <u>Festuca rubra</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	Column Totals:	_ (A)	(B)	
2. Agrostis capillaris	<u>50</u>	<u>ves</u>	<u>FAC</u>	Prevalence	e Index = B/A =		
3. <u>Schedonorus phoenix</u>	<u>20</u>	<u>no</u>	FAC	Hydrophytic Vegetation Ind	icators:		
4. <u>Achillea millefolium</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	☐ 1 – Rapid Test for Hydro	ophytic Vegetation		
5. <u>Taraxacum officinale</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	□ 2 - Dominance Test is >	50%		
6. <u>Hypochaeris radicata</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	3 - Prevalence Index is	<u><</u> 3.0 ¹		
7. <u>Holcus lanatus</u>	<u>5</u>	<u>no</u>	FAC	4 - Morphological Adapt		ting	
8. <u>Trifolium repens</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	data in Remarks or c	n a separate sheet)		
9. <u>Trifolium pratense</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	5 - Wetland Non-Vascul	ar Plants ¹		
10				☐ Problematic Hydrophytic	Vegetation ¹ (Explain)		
11				1,			
50% = <u>77.5,</u> 20% = <u>31</u>	<u>155</u>	= Total Cove	er	Indicators of hydric soil and was be present, unless disturbed of			
Woody Vine Stratum (Plot size: 5M)				·			
1. <u>Rubus armeniacus</u>	<u>2</u>	<u>no</u>	<u>FACU</u>				
2				Hydrophytic Vegetation	Yes ⊠	No 🗆	
50% = <u>1</u> , 20% = <u>0.4</u>	<u>2</u>	= Total Cove	er	Present?			
% Bare Ground in Herb Stratum							
Remarks: *excluded from calculations per cha not considered dominant. The 1988 Re species are all FAC disturbance-toleran	gion 9 Nation	al Wetland Pla	int List and 19	93 Supplement were used for the			

Depth	Matri	ix				Redox Fea	atures							
inches)	Color (moist)		%	Colo	or (mo	ist) %	Type ¹	Loc ²	Texture		Rem	arks		
<u>0-5</u>	10YR 2/1	<u>1</u>	00	_					Sa Loam					
<u>5-15</u>	2.5Y 3/2	<u>1</u>	00	_					Gr Sa Loam					
<u>15-18</u>	2.5Y 4/2	<u> </u>	<u>85</u>	<u>10Y</u>	YR 4/6	<u>15</u>	<u>C</u>	<u>M</u>	Gr Sa Loam	with cobbles				
	-	_		_										
		_		_										
	· 	_		_										
	-			_										
Type: C= Co	ncentration D-D	enletion	RM-F	— Aeduced	l Matri	x, CS=Covered or C	oated San	d Grains ² I	ocation: PI -Por	e Lining, M=Matr	iv			
						otherwise noted.)	oalea Gari	d Orallis.		rs for Problema		ic So	ils³:	
] Histos		ioabio t	.o u.i <u>-</u> i			Sandy Redox (S5)			_	cm Muck (A10)	.io iiyai	.0 00		
_	Epipedon (A2)					Stripped Matrix (S6	5)		_	ed Parent Materi	al (TF2)			
	Histic (A3)					Loamy Mucky Mine		xcept MLRA 1)		ery Shallow Dark	` ,		12)	
_	gen Sulfide (A4)			ſ		Loamy Gleyed Mat				ther (Explain in F	Remarks	;)	•	
☐ Deplet	ed Below Dark Su	ırface (A	A11)	ſ		Depleted Matrix (F3	3)							
Thick [Dark Surface (A12	2)		ſ		Redox Dark Surfac	e (F6)							
☐ Sandy	Mucky Mineral (S	51)		[Depleted Dark Surf	ace (F7)			rs of hydrophytic				
Sandy	Gleyed Matrix (S4	4)		[Redox Depressions	s (F8)			s disturbed or pro				
estrictive l	_ayer (if present)	:												
ype:														
epth (inche	s):							Hydric Soils	Present?	Yes	S]	No	\boxtimes
Remarks:	Garbage debris	at 12 ind	ches.											
		at 12 ind	ches.											
HYDROLO			ches.											
HYDROLO Vetland Hyd	GY	rs:		check a	ıll that	apply)			Secondary	r Indicators (2 or	more re	quired	1)	
HYDROLO Vetland Hyd Primary Indic	GY drology Indicator	rs:			ıll that	apply) Water-Stained Lea	ves (B9)		· 	/ Indicators (2 or er-Stained Leave		quired	1)	
HYDROLO Vetland Hyd Primary India Surfac High V	GY drology Indicator eators (minimum c	rs:			_		` ,	4B)	☐ Wate		s (B9)	quirec	너)	
HYDR OLO Vetland Hyd Primary Indic Surfac High V	GY drology Indicator eators (minimum of the Water (A1) Vater Table (A2) ution (A3)	rs:				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11)	, 4A, and	4B)	☐ Wate (MLI	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B	s (B9) 4B) 10)		d)	
HYDROLO Wetland Hyd Primary Indic Surfac High V Satura Water	GY drology Indicator cators (minimum of the Water (A1) Vater Table (A2) tion (A3) Marks (B1)	rs: of one re				Water-Stained Lead (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate	es (B13)	4B)	☐ Wate (MLi	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta	s (B9) 4B) 10) able (C2))	•	
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Water Sedim	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2)	rs: of one re				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C	es (B13)	·	Wate (MLi Drain Dry-3	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on	s (B9) 4B) 10) able (C2) Aerial In)	•	
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Water Sedim Drift D	GY drology Indicators eators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) deposits (B3)	rs: of one re				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizospho	es (B13) Odor (C1) eres along	Living Roots (C	Wate	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position	s (B9) 4B) 10) able (C2) Aerial In)	•	
HYDROLO Wetland Hyd Primary Indic Surfac High V Satura Water Sedim Algal I	GY drology Indicator cators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)	rs: of one re				Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduc	es (B13) Odor (C1) eres along ed Iron (C4)	Living Roots (C:	Wate (MLi Drain Dry-1 Satu Satu Geoi	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3	s (B9) 4B) 10) able (C2) Aerial In (D2))	•	
HYDR OLO Wetland Hyd Primary Indic Surfac High V Satura Water Sedim Drift D Iron D	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	rs: of one re				Water-Stained Leav (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct	es (B13) Dodor (C1) eres along ed Iron (C4) tion in Tille	Living Roots (C: 4) d Soils (C6)	Wate	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5	s (B9) 4B) 10) able (C2) Aerial In (D2)) nager	•	
HYDROLO Wetland Hyd Primary Indic High V Satura Water Sedim Drift D Algal I Iron D Surface	GY drology Indicator cators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6)	rs: of one re	equired;			Water-Stained Lead (except MLRA 1, 2) Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses	es (B13) Odor (C1) eres along ed Iron (C4 tion in Tille s Plants (D	Living Roots (C: 4) d Soils (C6)	Wate (MLi Drain Dry-3 Satu Satu FAC Rais	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) ble (C2) Aerial In (D2) (D3) C6) (LRI) nager R A)	•	
HYDROLO Wetland Hyd Primary Indic High V Satura Water Sedim Drift D Algal I Iron D Surface Inunda	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6 ation Visible on A6	rs: of one re	equired;	37)		Water-Stained Leav (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct	es (B13) Odor (C1) eres along ed Iron (C4 tion in Tille s Plants (D	Living Roots (C: 4) d Soils (C6)	Wate (MLi Drain Dry-3 Satu Satu FAC Rais	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5	s (B9) 4B) 10) ble (C2) Aerial In (D2) (D3) C6) (LRI) nager R A)	•	
HYDROLO Wetland Hyd Primary Indic Surfac High V Satura Vater Sedim Drift D Algal I Iron D Surfac	GY drology Indicator cators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6 attion Visible on Ae thely Vegetated Cor	rs: of one re	equired;	37)		Water-Stained Lead (except MLRA 1, 2) Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses	es (B13) Odor (C1) eres along ed Iron (C4 tion in Tille s Plants (D	Living Roots (C: 4) d Soils (C6)	Wate (MLi Drain Dry-3 Satu Satu FAC Rais	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) ble (C2) Aerial In (D2) (D3) C6) (LRI) nager R A)	•	
HYDROLO Vetland Hyd Primary Indic Surfac High V Satura Sedim Drift D Algal I Iron D Surfac Inunda	GY drology Indicator cators (minimum of the Water (A1) Vater Table (A2) tition (A3) Marks (B1) tent Deposits (B2) teposits (B3) Mat or Crust (B4) teposits (B5) te Soil Cracks (B6 tation Visible on Act tely Vegetated Corvations:	rs: of one re	equired; agery (E urface	37) (B8)		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses Other (Explain in R	es (B13) Door (C1) Heres along	Living Roots (C: 4) d Soils (C6)	Wate (MLi Drain Dry-3 Satu Satu FAC Rais	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) ble (C2) Aerial In (D2) (D3) C6) (LRI) nager R A)	•	
HYDROLO Vetland Hyd Primary Indic High V Satura Water Sedim Inon D Surfac	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Activity Vegetated Convertions: the Present?	rs: of one re of one re of one re Yes	equired;	37) (B8) No		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses Other (Explain in R	es (B13) Door (C1) eres along ed Iron (C4 tion in Tille s Plants (D emarks)	Living Roots (C: 4) d Soils (C6)	Wate (MLi Drain Dry-3 Satu Satu FAC Rais	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) ble (C2) Aerial In (D2) (D3) C6) (LRI) nager R A)	•	
HYDROLO Wetland Hyde Primary Indic High V Satura Water Sedim Iron D Iron D Inunda Sparse Field Observ Surface Water Water Table Saturation Primary Indices Section 1000 1000 1000 1000 1000 1000 1000 10	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Active Vegetated Convertions: the Present?	rs: of one re	equired; agery (E urface	37) (B8)		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses Other (Explain in R	es (B13) Dodor (C1) eres along ed Iron (C4 tion in Tille s Plants (D emarks) : 16	Living Roots (C: 4) d Soils (C6) 11) (LRR A)	Wate (MLi Drain Dry-3 Satu Satu FAC Rais	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i t-Heave Hummon	s (B9) 4B) 10) ble (C2) Aerial In (D2) (D3) C6) (LRI	nager	•	o [
HYDROLO Wetland Hyd Primary Indic High V Satura Water Sedim Iron D Iron D Inunda Sparse Field Observ Surface Water Vater Table Saturation Princludes cap	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Active Vegetated Convertions: the Present? Present? The service of the Water (A1) The Water (A2) The Water (of one results of one	equired;	37) (B8) No No No		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses Other (Explain in R Depth (inches) Depth (inches)	es (B13) Dodor (C1) eres along ed Iron (C4 tion in Tille s Plants (D emarks) : 16 : 10	Living Roots (C: 4) d Soils (C6) d) (LRR A)	Wate (MLI Drain Satu Satu Shal FAC Rais Fros	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i t-Heave Hummon	s (B9) 4B) 10) able (C2) Aerial In (D2) 5) D6) (LRI	nager	y (C9)	o [
HYDROLO Wetland Hyd Primary Indic High V Satura Water Sedim Iron D Iron D Inunda Sparse Field Observ Surface Water Vater Table Saturation Princludes cap	GY drology Indicators cators (minimum of the Water (A1) Vater Table (A2) ation (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) the Soil Cracks (B6) ation Visible on Active Vegetated Convertions: the Present? Present? The service of the Water (A1) The Water (A2) The Water (of one results of one	equired;	37) (B8) No No No		Water-Stained Lear (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide C Oxidized Rhizospho Presence of Reduct Recent Iron Reduct Stunted or Stresses Other (Explain in R Depth (inches)	es (B13) Dodor (C1) eres along ed Iron (C4 tion in Tille s Plants (D emarks) : 16 : 10	Living Roots (C: 4) d Soils (C6) d) (LRR A)	Wate (MLI Drain Satu Satu Shal FAC Rais Fros	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position low Aquitard (D3 -Neutral Test (D5 ed Ant Mounds (i t-Heave Hummon	s (B9) 4B) 10) able (C2) Aerial In (D2) 5) D6) (LRI	nager	y (C9)	o [

Project Site:	Lynnwood Link Extension			City/Coun	ty: <u>Shoreline/King</u>	Sampling Date:	3/15/12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSH2-SP1	
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Ran	ge: <u>S17, T26N, R4E</u>	<u>:</u>	
Landform (hillslope, te	rrace, etc.): <u>swale</u>		Loca	l relief (conc	ave, convex, none): <u>concave</u>	Slop	pe (%): 2	
Subregion (LRR):	<u>A</u>	Lat: 47.73	3871180380		Long: <u>-122.32704887700</u>	Datum:	NAD83	
Soil Map Unit Name:	<u>Urban Land</u>				NWI clas	ssification: <u>PEM</u>		
Are climatic / hydrolog	ic conditions on the site typical for	this time of y	/ear? Ye	es 🗆	No 🛛 (If no, explain i	in Remarks.)		
Are Vegetation □,	Soil □, or Hydrology	☐, signification	antly disturbed	? Are "l	Normal Circumstances" present	? Yes	⊠ No □	
Are Vegetation □,	Soil □, or Hydrology	□, naturall	ly problematic?	? (If ne	eded, explain any answers in Re	emarks.)		
0.11444 B.V. 05 F.W.	IDINIO A. I. I.	_						
	IDINGS – Attach site map sh			locations,	transects, important featu	res, etc.		\neg
Hydrophytic Vegetation	n Present?	Yes ⊠		Is the Samp	oled Area	V	M N- 0	
Hydric Soil Present?	10	Yes ⊠	NO L	within a We		Yes	⊠ No □	
Wetland Hydrology Pro		Yes 🛚	L.					\dashv
Remarks: Located ir days prior	n centerof swale, approximately 8	feet west of s	sound wall. Hea	avy rains dur	ing site investigation and more the	nan average precipita	ition for the five	
,.	•							
VEGETATION III	eo eciontific names of plants	•						
	se scientific names of plants	Absolute	Dominant	Indicator	Dominance Test Worksheet:			
Tree Stratum (Plot siz	e. <u>10W</u>)	% Cover	Species?	<u>Status</u>	Dominance rest worksneet.			
1					Number of Dominant Species That Are OBL, FACW, or FAC	. <u>1</u>	(A)	
2					matric obe, triove, of trio	•		
3 4					Total Number of Dominant Species Across All Strata:	<u>1</u>	(B)	
50% =, 20% =			= Total Cover		·			
Sapling/Shrub Stratum			= 10tal Cover		Percent of Dominant Species That Are OBL, FACW, or FAC	: <u>100</u>	(A/E	B)
•	<u>1</u> (1 lot 3126. <u>0141</u>)				Prevalence Index worksheet			
1 2					Total % Cover of:		ply by:	
3					OBL species	x1 =	DIY DY.	
4					FACW species	x2 =		
5					FAC species	x3 =		
50% =, 20% =			= Total Cover		FACU species	x4 =		
Herb Stratum (Plot siz			- 1 olai 0010i		UPL species	x5 =		
Juncus effusus	C. <u>ZIW</u>)	<u>50</u>	VAS	FACW		_(A)	(B)	
Scirpus microcarp	NI C	<u>50</u>	<u>yes</u>	OBL		(A) - Index = B/A =		
·	<u>uo</u>	<u> </u>	<u>no</u>	OBL			•	
3 4.					Hydrophytic Vegetation India 1 – Rapid Test for Hydro			
5					2 - Dominance Test is >			
6.								
7.					5 1 10 talolilo ilitaox lo <u>-</u>	- "		
8.					4 - Morphological Adapta data in Remarks or or	ations" (Provide suppo n a separate sheet)	orting	
9					5 - Wetland Non-Vascula			
10.							`	
11. <u>Unknown grasses</u>	3	90	<u>n/a*</u>		☐ Problematic Hydrophytic	vegetation (Explain)	
50% = <u>27.5</u> , 20% = <u>11</u>		<u>55</u>	= Total Cover	-	¹ Indicators of hydric soil and w		st	
Woody Vine Stratum (=	<u>50</u>	- 1 olai 0010i		be present, unless disturbed o	r problematic.		
1								-
2.					Hydrophytic			
50% =, 20% =			= Total Cover			′es ⊠	No 🗆	
% Bare Ground in Her			. 3.6. 00101		Present?			
**	The dominant vegetation (grasses	s) is mowed a	nd unidentified	le May he s	WSDOT mix The 1988 Regio	n 9 National Wetland	Plant List and	_
nelliaino.	upplement were used for this delir	,	ina uniucililidb	no. Iviay be a	TWODOT HIM. THE 1300 Region	ii o manonai vvendilu	i idili Liol allu	

SOIL Sampling Point: WSH2-SP1 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features (inches) Color (moist) % Color (moist) % Type¹ Loc2 Texture Remarks 10YR 2/2 <u>70</u> 5YR 3/4 <u>25</u> <u>C</u> Gr Sa Loam 0-11 M 7.5YR 2.5/3 5 C M 11-20 2.5Y 3/1 100 Silt Loam Compacted ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) \boxtimes Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: **Hydric Soils Present?** Yes \boxtimes No Depth (inches): Remarks: Lower layer appears to be disturbed and contains inclusions. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) П Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes \boxtimes No Depth (inches): 4 \boxtimes Water Table Present? Yes No Depth (inches): surface Saturation Present? \boxtimes Wetland Hydrology Present? Yes \boxtimes No Yes No Depth (inches): surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: <u>Shoreline/King</u> Sampling Da	ate: <u>3/15/12</u>
Applicant/Owner: Sound Transit				State: WA Sampling Po	oint: WSH2-SP2
Investigator(s): M. Maynard, C. Worsley				Section, Township, Range: S17, T26	<u>ôN, R4E</u>
Landform (hillslope, terrace, etc.):		Loca	al relief (conc	ave, convex, none): <u>convex</u>	Slope (%): <u>1</u>
Subregion (LRR): <u>A</u>	Lat: <u>47.7</u>	<u> 3875709240</u>		Long: <u>-122.32704648000</u>	Datum: NAD83
Soil Map Unit Name: <u>Urban Land</u>			_	NWI classification:	<u>Upland</u>
Are climatic / hydrologic conditions on the site typical fo	_	-	es 🗆	, , , ,	
Are Vegetation □, Soil □, or Hydrology		cantly disturbed		Normal Circumstances" present?	Yes ⊠ No □
Are Vegetation □, Soil □, or Hydrology	∐, natural	lly problematic	? (If ne	eded, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map si	howing sar	npling point	locations,	transects, important features, etc.	
Hydrophytic Vegetation Present?	Yes 🗆	No ⊠			
Hydric Soil Present?	Yes 🗆	No ⊠	Is the Samp within a We		Yes □ No ⊠
Wetland Hydrology Present?	Yes 🛛	No □	within a we	cialiu:	
Remarks: The sample plot is located approximately 3	feet north of	the wetland bo	undary and 4	4 feet west of the sound wall. Heavy rains duri	ng site investigation and
more than average precipitation for the five			, , , , ,	,	g
VEGETATION – Use scientific names of plant		Daminant	la dia atau		
<u>Tree Stratum</u> (Plot size: <u>10M</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1				Number of Dominant Species	<u>1</u> (A)
2				That Are OBL, FACW, or FAC:	_ ('')
3				Total Number of Dominant	<u>2</u> (B)
4				Species Across All Strata:	
50% =, 20% =		= Total Cove	r	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u> (A/B)
Sapling/Shrub Stratum (Plot size: 5M)					
1				Prevalence Index worksheet:	Multiply by
2 3				Total % Cover of: OBL species	Multiply by: x1 =
4				FACW species	x2 =
5				FAC species	x3 =
50% =, 20% =		= Total Cove	 r	FACU species	x4 =
Herb Stratum (Plot size: 2M)		. otal ooro	•	UPL species	x5 =
Galium aparine	<u>25</u>	<u>yes</u>	FACU		(B)
2. Geranium molle	2	no	NL (UPL)	Column Totals: (A) Prevalence Index = B/A =	
3. Holcus lanatus	<u>2</u>	no	FAC	Hydrophytic Vegetation Indicators:	<u>- </u>
4. Echinochloa crus-galli	<u>=</u> 10	<u>ves</u>	FACW	☐ 1 – Rapid Test for Hydrophytic Vegeta	ation
5	<u></u>	<u>,100</u>	<u>. , , , , , , , , , , , , , , , , , , ,</u>	2 - Dominance Test is >50%	
6.				☐ 3 - Prevalence Index is <3.0 ¹	
7				4. Manufacture in addition of (Decode	to supporting
8				data in Remarks or on a separate s	sheet)
9				☐ 5 - Wetland Non-Vascular Plants ¹	
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11. <u>Unknown grass</u>	<u>95</u>	n/a*	=		
50% = <u>19.5</u> , 20% = <u>7.8</u>	39	= Total Cove	r	¹ Indicators of hydric soil and wetland hydrole be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: 5M)				be present, unless disturbed or problematic.	•
1					-
2				Hydrophytic	,
50% =, 20% =		= Total Cove	r	Vegetation Yes Present?] No ⊠
% Bare Ground in Herb Stratum					
		and unidentifiat	ole. May be a	a WSDOT mix. The 1988 Region 9 National V	Vetland Plant List and
1993 Supplement were used for this deli	ieation.				

Depth	Matri	Х				Redox Feat	ures		<u> </u>					
inches)	Color (moist)		%	Cold	or (mo	ist) %	Type ¹	Loc ²	Texture		R	Remarks	3	
<u>0-2</u>	10YR 2/2	<u>1</u>	00	-					<u>Loam</u>					
<u>2-6</u>	10YR 2/2	<u>1</u>	00	-					Gr Sa Loam	· —				
<u>6-18</u>	10YR 3/2	<u>1</u>	00	-					Gr Sa Loam	with cobble	<u>es</u>			
		_		-										
				-										
		_		-										
				_										
						ix, CS=Covered or Co otherwise noted.)	ated San	d Grains. L	ocation: PL=Po	ors for Proble		vdric S	oile ³ :	
Histoso		icable t	O all Li			Sandy Redox (S5)			_	2 cm Muck (A1	•	yunc 3	olis .	
_	Epipedon (A2)					Stripped Matrix (S6)			_	Red Parent Ma	-	F2)		
	Histic (A3)					Loamy Mucky Minera	al (F1) (e :	vcent MI RA 1)		√ery Shallow D	,	,	- 12)	
_	en Sulfide (A4)					Loamy Gleyed Matri		ACCPL III EIGH 1)	_	Other (Explain i		•	12)	
_ , ,	ed Below Dark Su	ırface (A	(11)			Depleted Matrix (F3)	` ,			otrici (Explain)	III I CIII C	arico)		
_	Dark Surface (A12	-	,			Redox Dark Surface								
_	Mucky Mineral (S	•				Depleted Dark Surfa			³ Indicate	ors of hydrophy	ytic vege	etation a	and	
_	Gleyed Matrix (S4	-				Redox Depressions				and hydrology r ss disturbed or			t,	
	ayer (if present)						(-/		unie	ss distarbed or	problem	iauc.		
ype:														
epth (inches	s):							Hydric Soils	Present?		Yes		No	\boxtimes
	Soil is disturbed,	pieces	of cond	crete.										
emarks:	GY		of cond	crete.										
IYDROLO	GY Irology Indicator	rs:			all the other	onali)			Connection	uu la diaptara (2			- d)	
IYDROLOG Vetland Hyd	GY Irology Indicator ators (minimum o	rs:			_		(D0)			ry Indicators (2			ed)	
IYDROLOG /etland Hyd rimary Indic	GY Irology Indicator ators (minimum o e Water (A1)	rs:			all that	Water-Stained Leave	` '	40)	☐ Wa	ter-Stained Lea	aves (B9		ed)	
YDROLOGI /etland Hyd rimary Indic Surface High W	GY Irology Indicator ators (minimum o e Water (A1) /ater Table (A2)	rs:				Water-Stained Leave (except MLRA 1, 2,	` '	4 B)	□ Wa	ter-Stained Lea	aves (B9 and 4B)		ed)	
YDROLOGI Vetland Hydrimary Indic Surface High W	GY Irology Indicator ators (minimum o e Water (A1) / ater Table (A2) tion (A3)	rs:				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and	4B)	☐ Wa (ML	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns	aves (B9 and 4B) (B10)	9)	ed)	
YDROLOG Vetland Hyd rimary Indic Surface High W Satura	GY Irology Indicator ators (minimum o e Water (A1) /ater Table (A2) tion (A3) Marks (B1)	rs: of one re				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	4A, and ss (B13)	4 B)	□ Wa (ML □ Dra □ Dry	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water	aves (B9 and 4B) (B10) r Table ((C2)		
YDROLOG /etland Hyd rimary Indic Surfac High W Satura Water Sedime	GY Irology Indicator ators (minimum o e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)	rs: of one re				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc	4A , and s (B13) dor (C1)		☐ Wa (ML ☐ Dra ☐ Dry ☐ Sate	ter-Stained Lea .RA 1, 2, 4A, a inage Patterns -Season Water uration Visible	aves (B9 and 4B) (B10) r Table (on Aeria	(C2)		
YDROLO Vetland Hyd rimary Indic Surfac High W Satura Water Sedime Drift De	GY Irology Indicator ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	rs: of one re				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and s (B13) dor (C1) res along	Living Roots (C	Wa (ML Dra Dry Sate S) Geo	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible omorphic Positi	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2)	(C2)		
IYDROLOG Vetland Hyd Irimary Indic Surface High W Satura Water Water Sedime Algal M	GY Irology Indicator ators (minimum o e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) //at or Crust (B4)	rs: of one re				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduce	4A, and as (B13) dor (C1) res along d Iron (C4	Living Roots (C:	Wa (ML Dra Dry Satu Sha	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible omorphic Positi	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2)	(C2)		
IYDROLOG Vetland Hyd Irrimary Indic Surface High W Satura Water Sedime Drift De	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vator Crust (B4) eposits (B5)	rs: of one re				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille	Living Roots (C: 4) d Soils (C6)		ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible pmorphic Positi allow Aquitard (C-Neutral Test	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5)	(C2)	ery (C9)	
YDROLOG Vetland Hyd rimary Indic Surface High W Satura Water Sedime Drift De Algal N Iron De	GY Irology Indicator ators (minimum o e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) //at or Crust (B4) eposits (B5) e Soil Cracks (B6	rs: of one re	quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wa (ML Dra Dry Sati Sha FAC	ter-Stained Lea RA 1, 2, 4A, a inage Patterns -Season Water uration Visible proorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	
IYDROLOU /etland Hyd rimary Indic Surface Water Sedime Drift De Algal N Iron De Surface Inunda	GY Irology Indicator ators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6 tition Visible on Ae	s: If one re	quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wa (ML Dra Dry Sati Sha FAC	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible pmorphic Positi allow Aquitard (C-Neutral Test	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	
YDROLOU /etland Hyd rimary Indic Surfac High W Satura Water Sedime Drift De Iron De Surface	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6 tion Visible on Ae	s: If one re	quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wa (ML Dra Dry Sati Sha FAC	ter-Stained Lea RA 1, 2, 4A, a inage Patterns -Season Water uration Visible proorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	
IYDROLOGIVETIAND HIGH WATER SEDIMENT OF THE PROPERTY OF THE PR	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6 tion Visible on Ae ely Vegetated Corvations:	s: If one re	quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Octobrial Stained Octobrial Stained Octobrial Stained Octobrial Stained Octobrial Stained or Stresses Other (Explain in Res	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wa (ML Dra Dry Sati Sha FAC	ter-Stained Lea RA 1, 2, 4A, a inage Patterns -Season Water uration Visible proorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	
YDROLOGIVETIAND IN THE PROPERTY OF THE PROPERT	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6 tion Visible on Ae ely Vegetated Conventions: er Present?	of one response of one respons	quired;	37) (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and s (B13) dor (C1) res along d Iron (C-on in Tille Plants (D marks)	Living Roots (C: 4) d Soils (C6)	Wa (ML Dra Dry Sati Sha FAC	ter-Stained Lea RA 1, 2, 4A, a inage Patterns -Season Water uration Visible proorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	
YDROLOGIVETIAND IN COLOGIVETIAND IN COLO	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6 tion Visible on Ae ely Vegetated Convations: er Present? Present?	ers: of one re of one re	quired; gery (B urface (37) (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Octobrial Stained Octobrial Stained Octobrial Stained Octobrial Stained Octobrial Stained or Stresses Other (Explain in Res	4A, and as (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6) 11) (LRR A)	Wa (ML Dra Dry Sati Sha FAC	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible comorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound st-Heave Humi	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	lo
IYDROLOGIVETION OF THE PROPERTY OF THE PROPERT	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6 tion Visible on Ae ely Vegetated Convations: er Present? Present? esent?	of one restriction of the second of the seco	quired; gery (Burface (37) (B8) No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	4A, and s (B13) dor (C1) res along d Iron (C-con in Tille Plants (Dmarks)	Living Roots (C: 4) d Soils (C6) d) (LRR A)	Wa (ML Dra Dry Satu Sha FAC	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible comorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound st-Heave Humi	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	lo
IYDROLOO Vetland Hyd Vetland Hyd Vetland Hyd Vetland Hyd Surface High W Satura Sedim Surface Inunda Sparse Vetland Observ Surface Water Vetland Observ Surface Observ	GY Irology Indicator ators (minimum of e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Vat or Crust (B4) eposits (B5) e Soil Cracks (B6 tion Visible on Ae ely Vegetated Convations: er Present? Present? esent?	of one restriction of the second of the seco	quired; gery (Burface (37) (B8) No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	4A, and s (B13) dor (C1) res along d Iron (C-con in Tille Plants (Dmarks)	Living Roots (C: 4) d Soils (C6) d) (LRR A)	Wa (ML Dra Dry Satu Sha FAC	ter-Stained Lea LRA 1, 2, 4A, a inage Patterns -Season Water uration Visible comorphic Positi allow Aquitard (C-Neutral Test sed Ant Mound st-Heave Humi	aves (B9 and 4B) (B10) r Table (on Aeria ion (D2) (D3) (D5) ds (D6) ((C2) al Image	ery (C9)	lo

Project Site:	Lynnwood Link Ex	<u>ktension</u>					City/Cour	nty:	Shore	eline/King	l	Samplin	ng Date:	3/15	5/12	
Applicant/Owner:	Sound Transit									Sta	ite: WA	Samplin	ng Point:	WS	H3-SI	<u>21</u>
Investigator(s):	M. Maynard, C. W	<u>'orsley</u>							Se	ction, To	wnship, Rar	nge: <u>S17</u>	<u>, T26N, R4E</u>			
Landform (hillslope, te	rrace, etc.):	_				Loca	al relief (cond	ave, c	conve	x, none):	none		Slop	e (%):	<u>2</u>	
Subregion (LRR):	<u>A</u>		Lat:	47.740	08901	7690		Lo	ong:	-122.328	28328200		Datum:	NAD8	<u>3</u>	
Soil Map Unit Name:	Urban Land										NWI cla	ssification	: <u>PEM</u>			
Are climatic / hydrolog	ic conditions on the	site typical for	this time	e of ye	ar?	Υ	es 🗆	N	٧o	⊠ (If	no, explain	in Remarl	ks.)			
Are Vegetation □,	, Soil □, o	r Hydrology	□, sig	nificar	ntly dis	sturbed	l? Are '	Norma	al Circ	cumstand	es" present	?	Yes	\boxtimes	No	
Are Vegetation □,	, Soil □, o	r Hydrology	□, nat	turally	proble	ematic'	? (If ne	eded,	, expla	ain any ar	nswers in R	emarks.)				
SUMMARY OF FIN	IDINGS – Attach	site map sh	owing	samp	oling	point	locations	tran	sect	s, impo	rtant featu	ıres, etc				
Hydrophytic Vegetatio	n Present?		Yes	\boxtimes	No		1.4.6									
Hydric Soil Present?			Yes	\boxtimes	No		Is the Samp within a We						Yes	\boxtimes	No	
Wetland Hydrology Pre	esent?		Yes	\boxtimes	No											
Remarks: The samp	ole plot is located ap	proximately 5	feet west	t of the	e chair	nlink fe	nce. Heavy i	ains d	during	site inve	stigation an	d more tha	an average p	recipita	ation 1	for the
five days	prior.															
VEGETATION – Us	se scientific nan	nes of plants	8													
Tree Stratum (Plot siz	e: <u>10M</u>)		Absolut % Cove		Domin Specie		Indicator Status	Don	minan	nce Test	Worksheet	:				
1. <u>Thuja plicata</u>			15		<u>ves</u>	<u> </u>	FAC	Num	nher (of Domina	ant Species					
2				•							CW, or FAC	:	<u>2</u>			(A)
3.				-				Tota	al Nur	mber of D	ominant					
4.				-						Across Al			<u>3</u>			(B)
50% = <u>7.5</u> , 20% = <u>3</u>			<u>15</u>		= Tota	I Cove	r	Pero	cent c	of Domina	int Species					
Sapling/Shrub Stratun	n (Plot size: <u>5M</u>)										CW, or FAC	: :	<u>66</u>			(A/B)
1								Prev	valen	ce Index	worksheet	:				
2										Total	% Cover of:	<u>:</u>	Multip	ly by:		
3								OBL	L spec	cies			x1 =			
4				_				FAC	CW sp	oecies			x2 =			
5								FAC	Spec	cies			x3 =			
50% =, 20% =				=	= Tota	I Cove	r	FAC	CU sp	ecies			x4 =			
Herb Stratum (Plot siz	re: <u>2M</u>)							UPL	_ spec	cies			x5 =			
1. Phalaris arundina	cea		100	,	<u>yes</u>		FACW	Colu	ımn T	Γotals:		(A)			(E	3)
Equisetum telmate			15		no		FACW	Oole	u	i otais.	Prevalence		B/A =	_		,
3	<u> </u>			-				Hvd	droph	vtic Vea	etation Indi					
4.				-					-	_	est for Hydro		egetation			
5				-						- ·	ce Test is >		gotation			
6				-							ce Index is					
7.				-							-	_				
8.				-					4 - (Morpholo data in Re	gical Adapt emarks or o	ations" (Pi n a separ	rovide suppo ate sheet)	rting		
9				-							Non-Vascul	٠.	,			
10				-									1,			
				-					Pro	blematic	Hydropnytic	vegetatio	on ¹ (Explain)			
11	5		115	-		ıl Cove		1Ind	licator	rs of hydri	c soil and w	vetland hy	drology must			
50% = 57.5, 20% = 23 Woody Vine Stratum (="		<u>115</u>	-	= 10ta	ii Cove		be p	oreser	nt, unless	disturbed of	r problem	atic.			
	·		10				EACH									
1. Rubus armeniacus	<u>S</u>		<u>10</u>	2	<u>yes</u>		<u>FACU</u>	Hvd	droph	vtic						
2				-				_	jetatio	•	١	es		No		
50% = 5, $20% = 2$			<u>10</u>	-	= I ota	I Cove	r	Pres	sent?	?						
% Bare Ground in Her																
Remarks: T	he 1988 Region 9 h	National Wetlar	nd Plant	List ar	nd 199	3 Sup	olement were	e used	for th	his deline	ation.					

Depth N	atrix				Redox Feat	tures		_					
nches) Color (moi	st)	%	Color (ı	moist)	%	Type ¹	Loc ²	Texture	-	R	Remarks	i	
<u>0-5</u> <u>10YR 4/</u>	<u>2</u>	<u>100</u>		_				Gr Sa Loam	<u> </u>				
<u>5-19</u> <u>10YR 4/</u>	<u>2</u>	<u>70</u>	<u>7.5YR</u>	3/4	<u>30</u>			Gr Sa Loam	n with cobb	<u>les</u>			
	_			_									
	_			_									
	_			_									
	_			_									
	_		-	_									
ype: C= Concentration, [– –Depletio	 n RM-F	—— Reduced M	_ atrix_CS-	-Covered or Co	ated Sand	d Grains 2	ocation: PL=Po	ore Lining M-I	Matrix			
ydric Soil Indicators: (A						atou ouric	Joians. L		ors for Proble		vdric S	oils³:	
Histosol (A1)	-				ly Redox (S5)			_	2 cm Muck (A		,		
Histic Epipedon (A2)					ped Matrix (S6)			_	Red Parent Ma		F2)		
Black Histic (A3)							ccept MLRA 1)		Very Shallow I	•	,	-12)	
☐ Hydrogen Sulfide (A	4)				ny Gleyed Matri		, ,	_	Other (Explain		,	,	
Depleted Below Dark		A11)	\boxtimes		eted Matrix (F3)	` ,			` '		,		
Thick Dark Surface (A12)	•		Redo	x Dark Surface	(F6)							
Sandy Mucky Minera	I (S1)			Depl	eted Dark Surfa	ice (F7)			tors of hydroph				
Sandy Gleyed Matrix	(S4)			Redo	x Depressions	(F8)			and hydrology ess disturbed o			i,	
estrictive Layer (if prese	ent):									•			
ype:													
epth (inches):							Hydric Soils I	Present?		Yes	\boxtimes	No	
emarks:													
Remarks:													
HYDROLOGY Vetland Hydrology Indic													
IYDROLOGY Vetland Hydrology Indica irmary Indicators (minimu		equired;							ry Indicators (;			ed)	
IYDROLOGY Vetland Hydrology Indica rrimary Indicators (minimu Surface Water (A1)	m of one re	equired;	check all th	Wate	er-Stained Leav	` ,	40)	☐ Wa	ater-Stained Le	eaves (B9		ed)	
IYDROLOGY Vetland Hydrology Indication imary Indicators (minimumary Indicators (Minimumar	m of one re	equired;		Wate	er-Stained Leav	` ,	4B)	□ Wa	ater-Stained Le	eaves (B9 and 4B)		ed)	
IYDROLOGY Vetland Hydrology Indication Surface Water (A1) High Water Table (A) Saturation (A3)	m of one re	equired;		Wate (exce	er-Stained Leav ept MLRA 1, 2, Crust (B11)	4A, and 4	4B)	☐ Wa	ater-Stained Le	eaves (B9 and 4B) s (B10)	9)	ed)	
YDROLOGY /etland Hydrology Indicarimary Indicators (minimu) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1)	m of one re	equired;		Wate (exce Salt (er-Stained Leav ept MLRA 1, 2, Crust (B11) tic Invertebrate	4A , and 4	48)	☐ Wa	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate	eaves (B9 and 4B) as (B10) er Table ((C2)		
VPDROLOGY /etland Hydrology Indication rimary Indicators (minimulation) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (m of one re	equired;		Wate (exce Salt (Aqua Hydr	er-Stained Leavert MLRA 1, 2, Crust (B11) titic Invertebrate	4A, and 4s (B13) dor (C1)		□ Wa (MI □ Dra □ Dry □ Sat	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible	eaves (B9 and 4B) is (B10) er Table (e on Aeria	(C2)		
IYDROLOGY /etland Hydrology Indicators (minimumary Indicators (minimumary Indicators (Material Indicators (Materi	m of one re	equired;		Wate (exce Salt (Aqua Hydro Oxidi	er-Stained Leav ept MLRA 1, 2, Crust (B11) tic Invertebrate ogen Sulfide Od zed Rhizosphe	4A, and 4 s (B13) dor (C1) res along	Living Roots (C3	Wa (MI Dra Dry Sat S) Ge	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2)	(C2)		
IYDROLOGY Vetland Hydrology Indicators (minimum of the properties	m of one re	equired;		Wate (exce Salt (Aqua Hydro Oxidi Prese	er-Stained Leav ept MLRA 1, 2, Crust (B11) utic Invertebrate ogen Sulfide Ou zed Rhizosphe ence of Reduce	4A, and 4 s (B13) dor (C1) res along ed Iron (C4	Living Roots (C3	War (MI) Dra Dry Sat Sha	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard	eaves (B9 and 4B) as (B10) er Table (e on Aeria ition (D2) (D3)	(C2)		
IYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Material Paper) Surface Water (A1) High Water Table (A3) Water Marks (B1) Sediment Deposits (B3) Drift Deposits (B3) Algal Mat or Crust (B3) Iron Deposits (B5)	m of one ro 2) B2)	equired;		Wate (exce Salt (Aqua Hydr Oxidi Prese Rece	er-Stained Leaver MLRA 1, 2, Crust (B11) utic Invertebrate ogen Sulfide Or zed Rhizosphe ence of Reducernt Iron Reducti	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6)	Wa	ter-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2) (D3) t (D5)	(C2)	ery (C9)	
IYDROLOGY Vetland Hydrology Indications (minimum of the properties	m of one ro 2) B2) (B6)			Water (excessed Salt (Aquater Hydricolor Oxidi Presion Recessed Stunt	er-Stained Leaver MLRA 1, 2, Crust (B11) Itic Invertebrate ogen Sulfide October Sulfide October Sulfide October State of Reduce ent Iron Reductived or Stresses	s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 I) d Soils (C6)	Wa (MI Dra Dry Sat Ge Sha FAI	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2) (D3) t (D5) ads (D6) ((C2) ILRR A)	ery (C9)	
IYDROLOGY /etland Hydrology Indicators (minimumal programmer) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B2) Iron Deposits (B5) Surface Soil Cracks Inundation Visible on	m of one ro 2) B2) (B6) (Aerial Ima	agery (B		Water (excessed Salt (Aquater Hydricolor Oxidi Presion Recessed Stunt	er-Stained Leaver MLRA 1, 2, Crust (B11) utic Invertebrate ogen Sulfide Or zed Rhizosphe ence of Reducernt Iron Reducti	s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 I) d Soils (C6)	Wa (MI Dra Dry Sat Ge Sha FAI	ter-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2) (D3) t (D5) ads (D6) ((C2) ILRR A)	ery (C9)	
IYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Male Indicators (Mal	m of one ro 2) B2) (B6) (Aerial Ima	agery (B		Water (excessed Salt (Aquater Hydricolor Oxidi Presion Recessed Stunt	er-Stained Leaver MLRA 1, 2, Crust (B11) Itic Invertebrate ogen Sulfide October Sulfide October Sulfide October State of Reduce ent Iron Reductived or Stresses	s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 I) d Soils (C6)	Wa (MI Dra Dry Sat Ge Sha FAI	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2) (D3) t (D5) ads (D6) ((C2) ILRR A)	ery (C9)	
WDROLOGY Vetland Hydrology Indicators (minimum primary Indicators (minimum primary Indicators (minimum primary Indicators (minimum primary Indicators (Mater Marks (B1)) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated ideld Observations:	m of one ro 2) B2) (B6) (Aerial Ima	agery (B		Wate (exce Salt (Aqua Hydre Oxidi Prese Rece Stunt Othe	er-Stained Leaver MLRA 1, 2, Crust (B11) Itic Invertebrate ogen Sulfide October Sulfide October Sulfide October State of Reduce ent Iron Reductived or Stresses	s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 I) d Soils (C6)	Wa (MI Dra Dry Sat Ge Sha FAI	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2) (D3) t (D5) ads (D6) ((C2) ILRR A)	ery (C9)	
WDROLOGY Vetland Hydrology Indications (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Material Control (m of one ro 2) B2) (B6) A Aerial Im: Concave S	agery (B		Wate (exce Salt (Aqua Hydri Oxidi Presi Rece Stunt Othe	er-Stained Leaver the MLRA 1, 2, Crust (B11) etic Invertebrate ogen Sulfide Or zed Rhizosphe ence of Reduce ent Iron Reductived or Stresses r (Explain in Reduction Re	s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 I) d Soils (C6)	Wa (MI Dra Dry Sat Ge Sha FAI	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun	eaves (B9 and 4B) s (B10) er Table (e on Aeria ition (D2) (D3) t (D5) ads (D6) ((C2) ILRR A)	ery (C9)	
Wetland Hydrology Indicators (minimum Indicators (minimum Indicators (minimum Indicators (minimum Indicators (minimum Indicators (minimum Indicators (Max Indicators (Minimum Indicato	m of one ro 2) B2) (B6) Aerial Im: Concave S	agery (B Surface (37) (B8)	Wate (exce Salt (Aqua Hydre Oxidi Press Rece Stunt Othe	er-Stained Leaver the MLRA 1, 2, Crust (B11) title Invertebrate ogen Sulfide Or zed Rhizosphe ence of Reduce ent Iron Reductited or Stresses r (Explain in Research (inches):	s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Wa (MI Dra Dry Sat Ge Sha FAI	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun ost-Heave Hum	eaves (B9 and 4B) is (B10) er Table (e on Aeria ition (D2) (D3) it (D5) inds (D6) (Innmocks (I	(C2) ILRR A)	ery (C9)	lo
HYDROLOGY Vetland Hydrology Indicators (minimum land) Surface Water (A1) High Water Table (A saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B lron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated iteld Observations: Surface Water Present? Vater Table Present?	m of one ro 2) B2) (B6) Aerial Ima Concave S Yes Yes Yes	agery (B Surface (□ □		Wate (exce Salt (Aqua Hydri Oxidi Presi Rece Stunt Othe	er-Stained Leaver the MLRA 1, 2, Crust (B11) Itic Invertebrate ogen Sulfide Or zed Rhizosphe ence of Reduce ent Iron Reductited or Stresses r (Explain in Reduction Cepth (inches): Depth (inches):	s (B13) dor (C1) res along dd Iron (C4 on in Tilled Plants (D marks)	Living Roots (C3 i) d Soils (C6) 1) (LRR A)	Wa (MI) Dra Dra Sat Sha Rai FAG	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun ost-Heave Hum	eaves (B9 and 4B) is (B10) er Table (e on Aeria ition (D2) (D3) it (D5) inds (D6) (Innmocks (I	(C2) al Image	ery (C9)	lo
IYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B2) Iron Deposits (B5) Surface Soil Cracks Inundation Visible on Sparsely Vegetated ield Observations: surface Water Present? Vater Table Present? includes capillary fringe)	m of one ro 2) B2) (B6) Aerial Ima Concave S Yes Yes Yes	agery (B Surface (□ □		Wate (exce Salt (Aqua Hydri Oxidi Presi Rece Stunt Othe	er-Stained Leaver the MLRA 1, 2, Crust (B11) Itic Invertebrate ogen Sulfide Or zed Rhizosphe ence of Reduce ent Iron Reductited or Stresses r (Explain in Reduction Cepth (inches): Depth (inches):	s (B13) dor (C1) res along dd Iron (C4 on in Tilled Plants (D marks)	Living Roots (C3 i) d Soils (C6) 1) (LRR A)	Wa (MI) Dra Dra Sat Sha Rai FAG	ater-Stained Le LRA 1, 2, 4A, ainage Pattern y-Season Wate turation Visible comorphic Posi allow Aquitard C-Neutral Tes ised Ant Moun ost-Heave Hum	eaves (B9 and 4B) is (B10) er Table (e on Aeria ition (D2) (D3) it (D5) inds (D6) (Innmocks (I	(C2) al Image	ery (C9)	lo

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: Shoreline/King	Sampling Date:	3/15/12
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSH3-SP2
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ran	ge: <u>S17, T26N, R4E</u>	
Landform (hillslope, terrace, etc.):		Loca	I relief (conc	ave, convex, none): <u>none</u>	Slope	(%): <u>2</u>
Subregion (LRR): <u>A</u>	Lat: 47.7	4094607150		Long: <u>-122.32831303000</u>	Datum: N	IAD83
Soil Map Unit Name: <u>Urban Land</u>				NWI clas	ssification: <u>Upland</u>	
Are climatic / hydrologic conditions on the site typical for	this time of y	ear? Ye	es 🗆	No 🛛 (If no, explain i	n Remarks.)	
Are Vegetation \square , Soil \square , or Hydrology	□, signific	antly disturbed	? Are "	Normal Circumstances" present	? Yes	⊠ No □
Are Vegetation □, Soil □, or Hydrology	□, natural	ly problematic?	(If ne	eded, explain any answers in Re	emarks.)	
SUMMARY OF FINDINGS – Attach site map sh		 -	locations,	transects, important featu	res, etc.	
Hydrophytic Vegetation Present?	Yes 🛛	No 🗆	Is the Samp	led Area		
Hydric Soil Present?	Yes 🗆	NO 🖾	within a We		Yes	□ No ⊠
Wetland Hydrology Present?	Yes 🛚	No 🗆				
Remarks: Heavy recent rains prior to delineations. The SP1. Heavy rains during site investigation a					of the fence and 15 feet	north of WSH3-
SF1. Heavy fains during site investigation a	na more mar	i average preci	pitation for ti	le live days pilot.		
VEGETATION – Use scientific names of plants	Absolute	Dominant	Indicator			
<u>Tree Stratum</u> (Plot size: <u>10M</u>)	% Cover	Species?	Status	Dominance Test Worksheet:		
1. <u>Ornamental cedar</u>	<u>15</u>	<u>n/a*</u>	Ξ	Number of Dominant Species	. 1	(A)
2				That Are OBL, FACW, or FAC	: =	(- 4
3				Total Number of Dominant	1	(B)
4				Species Across All Strata:	-	()
50% =, 20% =		= Total Cover		Percent of Dominant Species	. 100	(A/B)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC	•	
1. <u>Ornamental shrub</u>	<u>5</u>	<u>n/a*</u>	Ξ	Prevalence Index worksheet		
2				Total % Cover of:		<u>/ by:</u>
3				OBL species	x1 =	·
4			—	FACW species	x2 =	-
5				FAC species	x3 =	
50% =, 20% =		= Total Cover	•	FACU species	x4 =	·
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	. (A)	(B)
2			—	Prevalence	Index = B/A =	
3				Hydrophytic Vegetation India		
4				☐ 1 – Rapid Test for Hydro	phytic Vegetation	
5				△ 2 - Dominance Test is >5	50%	
6				☐ 3 - Prevalence Index is <	:3.0 ¹	
7				4 - Morphological Adapta		ing
8				data in Remarks or or		
9				5 - Wetland Non-Vascula	ar Plants'	
10				☐ Problematic Hydrophytic	Vegetation ¹ (Explain)	
11				¹ Indicators of hydric soil and w	retland hydrology must	
50% = 50, 20% = 20	<u>100</u>	= Total Cover	•	be present, unless disturbed o		
Woody Vine Stratum (Plot size: 5M)	_					
1. Rubus armeniacus	<u>5</u>	<u>no</u>	<u>FACU</u>	Hydrophytic		
2					′es ⊠	No 🗆
50% =, 20% =		= Total Cover	•	Present?		
% Bare Ground in Herb Stratum						
Remarks: The ornamental species are located dominant. The 1988 Region 9 National W					solute coverage were no	t considered
dominant. The 1900 Region 3 National V	onana Fiaill	_13t and 1333	Cappieilleill	word adda for this actilication.		

Depth	Matrix				Redox Feat	ures		_					
inches) C	color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture			Remark	3	
<u>0-11</u>	10YR 3/2	<u>100</u>	_	_				Gr Sa Loan					
<u>11-18</u>	<u>10YR 4/2</u>	<u>70</u>	<u>7.5YR</u>	3/4	<u>30</u>			Gr Sa Loan	n with cob	<u>obles</u>			
			_	_									
				_									
				_									
				_									
				_									
 Tyne: C= Concer	ntration, D=Deple	tion RM=	Reduced M	— atrix CS:	=Covered or Co	ated Sand	d Grains 2	ocation: PL=P	ore Lining M	l=Matrix			
	ators: (Applicab					atou Carre	a Oramo.		tors for Prob		Hvdric S	Soils ³ :	
Histosol (A1					dy Redox (S5)			_	2 cm Muck (,		
Histic Epipe					ped Matrix (S6)			_	Red Parent	•	TF2)		
Black Histic				-	ny Mucky Minera	al (F1) (e x	xcept MLRA 1)		Very Shallov	w Dark Su	ırface (T	F12)	
☐ Hydrogen S	Sulfide (A4)			Loan	ny Gleyed Matri	x (F2)			Other (Expla	ain in Rem	narks)		
Depleted Be	elow Dark Surfac	e (A11)		Depl	leted Matrix (F3)								
☐ Thick Dark \$	Surface (A12)			Redo	ox Dark Surface	(F6)							
☐ Sandy Muck	ky Mineral (S1)			Depl	leted Dark Surfa	ce (F7)			tors of hydro				
Sandy Gley	ed Matrix (S4)			Redo	ox Depressions	(F8)			land hydrolog ess disturbed			it,	
estrictive Layer	(if present):												
ype:													
epth (inches):							Hydric Soils F	Present?		Yes		No	\boxtimes
temarks: Deb	oris in soil.												
Remarks: Deb	oris in soil.												
HYDROLOGY Vetland Hydrolo	gy Indicators:												
HYDROLOGY Vetland Hydrolo Primary Indicators	gy Indicators: s (minimum of on	e required			•				ary Indicators			ed)	
HYDROLOGY Vetland Hydrolo Primary Indicators Surface Wa	gy Indicators: s (minimum of on	e required	l; check all t	Wate	er-Stained Leave	. ,		□ Wa	ater-Stained I	Leaves (E	39)	ed)	
HYDROLOGY Vetland Hydrolo Primary Indicators Surface Wa High Water	gy Indicators: s (minimum of on ater (A1) Table (A2)	e required		Wate	er-Stained Leave	. ,	4B)	□ Wa	ater-Stained LRA 1, 2, 4A	Leaves (E	39))	ed)	
HYDROLOGY Vetland Hydrolo rrimary Indicators Surface Wa High Water Saturation (gy Indicators: s (minimum of on ater (A1) Table (A2) (A3)	e required		Wate (exc Salt	er-Stained Leave ept MLRA 1, 2, Crust (B11)	4A, and 4	4B)	□ Wa (M	ater-Stained l LRA 1, 2, 4A ainage Patter	Leaves (E A, and 4B rns (B10)	39))	ed)	
IYDROLOGY Vetland Hydrolo trimary Indicators Surface Wa High Water Saturation (Water Mark	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1)	e required		Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates	4A , and 4	4B)	□ Wa (M □ Dra	ater-Stained I LRA 1, 2, 4A ainage Patter y-Season Wa	Leaves (E A, and 4B rns (B10) ater Table	39)) (C2)	·	
IYDROLOGY /etland Hydrolo rimary Indicators Surface Wa High Water Saturation (Water Mark	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2)	e required		Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc	4A , and 4 s (B13) dor (C1)		☐ Wa (M) ☐ Dra ☐ Dra ☐ Dra ☐ Sa	ater-Stained LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib	Leaves (EA, and 4B) rns (B10) ater Table ble on Aer	39) (C2) (C3) (C3)	·	
IYDROLOGY /etland Hydrolo rimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3)	e required		Wate (exc Salt Aqua Hydr Oxid	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher	4A, and 4 s (B13) dor (C1) res along	Living Roots (C3	Wa	ater-Stained I LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib	Leaves (EA, and 4B) rns (B10) ater Table ole on Aer osition (D2	39) (C2) (C3) (C3)	·	
IYDROLOGY Vetland Hydrolo rimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat o	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4)	e required		Wate (exc Salt Aqua Hydr Oxid	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher eence of Reduce	4A, and 4 s (B13) dor (C1) res along d Iron (C4	Living Roots (C3	Wa	ater-Stained la LRA 1, 2, 4A ainage Patter y-Season Waturation Visib comorphic Potallow Aquitar	Leaves (E A, and 4B rns (B10) ater Table ble on Aer osition (D2 rd (D3)	39) (C2) (C3) (C3)	·	
HYDROLOGY Vetland Hydrolo Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat o	rgy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	e required		Wate (exc Salt Aqua Hydr Oxid Pres Rece	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher eence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3 4) d Soils (C6)	Wa	LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitan C-Neutral Te	Leaves (EA, and 4B) rns (B10) ater Table ole on Aer osition (D2) rd (D3) est (D5)		ery (C9)	
AYDROLOGY Wetland Hydrolo rimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat o Iron Deposi	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4) its (B5) il Cracks (B6)			Wate (exc Salt Aqua Hydr Oxid Pres Recce Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 4) d Soils (C6)	Wa (M Dra Dr	ater-Stained I LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te	Leaves (E A, and 4B, rns (B10) ater Table ble on Aer osition (D2 rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
HYDROLOGY Wetland Hydrolo Inimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat o Iron Deposi Surface Soi Inundation	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) sil Cracks (B6) Visible on Aerial	lmagery (l		Wate (exc Salt Aqua Hydr Oxid Pres Recce Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher eence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 4) d Soils (C6)	Wa	LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitan C-Neutral Te	Leaves (E A, and 4B, rns (B10) ater Table ble on Aer osition (D2 rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
HYDROLOGY Wetland Hydrolo rimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat o Iron Deposi Surface Soi Inundation V	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4) its (B5) il Cracks (B6) Visible on Aerial egetated Concav	lmagery (l		Wate (exc Salt Aqua Hydr Oxid Pres Recce Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 4) d Soils (C6)	Wa (M Dra Dr	ater-Stained I LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te	Leaves (E A, and 4B, rns (B10) ater Table ble on Aer osition (D2 rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
Water Mark Sediment D Drift Depos Algal Mat o Iron Deposi Surface Soi Inundation Sparsely Vericed	rgy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4) its (B5) il Cracks (B6) Visible on Aerial egetated Concavens:	Imagery (I	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher ence of Reduce ent Iron Reduction ated or Stresses er (Explain in Rei	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 4) d Soils (C6)	Wa (M Dra Dr	ater-Stained I LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te	Leaves (E A, and 4B, rns (B10) ater Table ble on Aer osition (D2 rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
WDROLOGY Vetland Hydrolo rimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat o Iron Deposi Surface Soi Inundation (Sparsely Vetical Cobservation urface Water Pre	rgy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) il Cracks (B6) Visible on Aerial egetated Concav ns: eseent? Yes	Imagery (I	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc dized Rhizospher sence of Reduce ent Iron Reduction ated or Stresses er (Explain in Rei	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roots (C3 4) d Soils (C6)	Wa (M Dra Dr	ater-Stained I LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te	Leaves (E A, and 4B, rns (B10) ater Table ble on Aer osition (D2 rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
HYDROLOGY Vetland Hydrolo Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Algal Mat of Iron Deposi Surface Soi	rgy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) il Cracks (B6) Visible on Aerial egetated Concav ns: esent? Yes ent? Yes	Imagery (I	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc lized Rhizospher ence of Reduce ent Iron Reduction ated or Stresses er (Explain in Rei	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Wa (M Dra Dr	LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te ised Ant Mou ost-Heave Hu	Leaves (E A, and 4B rns (B10) ater Table ble on Aer position (D2 rd (D3) est (D5) unds (D6)	(LRR A)	lo I
HYDROLOGY Vetland Hydrolo Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Inon Deposi Inundation (Sparsely Vetrice Water Presentation	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Il Cracks (B6) Visible on Aerial egetated Concav ns: esent? Yes ent? Yes tt? Yes	Imagery (I e Surface	B7)	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc dized Rhizospher sence of Reduces ent Iron Reduction ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks) 12 surface	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Wa (MM Dra Dra Sa Sh FA Fro	LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te ised Ant Mou ost-Heave Hu	Leaves (E A, and 4B rns (B10) ater Table ble on Aer position (D2 rd (D3) est (D5) unds (D6)	(D7))	lo [
HYDROLOGY Vetland Hydrolo Primary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Depos Iron Deposi Surface Soi Inundation Sparsely Verical Observation Surface Water Presentation Presenta	gy Indicators: s (minimum of on ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Il Cracks (B6) Visible on Aerial egetated Concav ns: esent? Yes ent? Yes tt? Yes	Imagery (I e Surface	B7)	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc dized Rhizospher sence of Reduces ent Iron Reduction ted or Stresses er (Explain in Rei Depth (inches): Depth (inches):	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks) 12 surface	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Wa (MM Dra Dra Sa Sh FA Fro	LRA 1, 2, 4A ainage Patter y-Season Wa turation Visib comorphic Po allow Aquitar C-Neutral Te ised Ant Mou ost-Heave Hu	Leaves (E A, and 4B rns (B10) ater Table ble on Aer position (D2 rd (D3) est (D5) unds (D6)	(D7))	lo

Project Site:	Lynnwood Link Extension			City/Coun	ty: <u>Shoreline/King</u> Sar	mpling Date:	3/21/12	
Applicant/Owner:	Sound Transit				State: <u>WA</u> Sar	mpling Point:	WSH4-SP	<u> 1</u>
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Range:	S05, T26N, R4E		
Landform (hillslope, ter	rrace, etc.): <u>linear depression</u>	<u>on</u>	Loca	l relief (conc	ave, convex, none): <u>concave</u>	Slope	(%): <u>1</u>	
Subregion (LRR):	<u>A</u>	Lat: 47.7	7536223460		Long: <u>-122.31685488000</u>	Datum: N	IAD83	
Soil Map Unit Name:	<u>Urban Land</u>				NWI classifica	ation: <u>PFO</u>		
Are climatic / hydrologi	ic conditions on the site typical	for this time of	year? Y	es 🗆	No	marks.)		
Are Vegetation □,	Soil □, or Hydrology	☐, signific	cantly disturbed	i? Are "	Normal Circumstances" present?	Yes	⊠ No	
Are Vegetation □,	Soil □, or Hydrology	□, natura	lly problematic	? (If ne	eded, explain any answers in Remark	ks.)		
SUMMARY OF FIN	DINGS – Attach site map	showing sa	mpling point	locations,	transects, important features,	etc.		
Hydrophytic Vegetation	n Present?	Yes 🗵	No □					
Hydric Soil Present?		Yes 🗵	No 🗆	Is the Samp within a We		Yes	⊠ No	
Wetland Hydrology Pre	esent?	Yes 🗵	No □	within a we	etianu r			
		eet west south	west of red hou	ise annroxin	nately 18 feet west of right-of-way fen	ce in the lowest no	art of the we	etland
(in ditch).	ot is located approximately of i	cot west south	west of rea flot	isc, approxim	nately to leet west of right of way feri	cc, in the lowest pe	art or the we	ctiaria
VEGETATION - IIs	se scientific names of plar	nte						
Tree Stratum (Plot size		Absolute	Dominant	Indicator	Dominance Test Worksheet:	_		
	e. <u>1014)</u>	% Cover	Species?	Status	Dominance rest Worksheet.			
1. <u>Alnus rubra</u>		<u>90</u>	<u>ves</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>4</u>		(A)
2					That Are OBL, I ACW, OF I AC.			
3					Total Number of Dominant	<u>5</u>		(B)
4					Species Across All Strata:			
50% = <u>45</u> , 20% = <u>18</u>		<u>90</u>	= Total Cove	ſ	Percent of Dominant Species	80		(A/B)
Sapling/Shrub Stratum	n (Plot size: <u>5M</u>)				That Are OBL, FACW, or FAC:			, ,
1. Rubus spectabilis		<u>40</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index worksheet:			
2					Total % Cover of:	Multiply	<u>/ by:</u>	
3					OBL species	x1 =		
4					FACW species	x2 =		
5					FAC species	x3 =		
50% = 20, 20% = 8		<u>40</u>	= Total Cove	١	FACU species	x4 =		
Herb Stratum (Plot siz	e: <u>2M</u>)				UPL species	x5 =		
1. Phalaris arundinad	cea	<u>45</u>	<u>yes</u>	<u>FACW</u>	Column Totals: (A)		(B	3)
2. Glyceria striata		<u>15</u>	<u>no</u>	<u>OBL</u>	Prevalence Inde	x = B/A =		
3. Equisetum telmata	<u>aeia</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicator	's:		
4. Ranunculus repen	<u> </u>	<u>5</u>	<u>no</u>	<u>FACW</u>	☐ 1 – Rapid Test for Hydrophyti	c Vegetation		
5. Athyrium filix-femin	<u>na</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	□ 2 - Dominance Test is >50%			
6					☐ 3 - Prevalence Index is ≤3.01			
7					4 - Morphological Adaptations	s1 (Provide supporti	ing	
8					data in Remarks or on a se		J	
9					☐ 5 - Wetland Non-Vascular Pla	ınts ¹		
10					☐ Problematic Hydrophytic Veg	etation ¹ (Explain)		
11						(=)		
50% = <u>55</u> , 20% = <u>22</u>		110	= Total Cove	 r	¹ Indicators of hydric soil and wetlan			
Woody Vine Stratum (Plot size: 5M)				be present, unless disturbed or prol	nemauc.		
1. Rubus armeniacus		<u>40</u>	<u>yes</u>	FACU				
2.	=	<u> </u>			Hydrophytic			
50% = <u>20</u> , 20% = <u>8</u>		40	= Total Cove	 r	Vegetation Yes		No	
	h Stratum	10	- 101010000		Present?			
% Bare Ground in Her		tland Di	and 1000 O	-lama ar-+ · · · ·	upped for this deligrantian			
Remarks:	he 1988 Region 9 National We	liand Piant List	and 1993 Supp	nement were	e used for this delineation.			

Depth	Matrix				Redox Feat	ures		_						
nches) (Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture			Remark	(S		
<u>0-4</u>	10YR 2/1	<u>100</u>		_				Si Loam	high or	ganics				
<u>4-20</u>	10YR 2/2	<u>100</u>		_				Sand						
				_										
				_										
				_										
				_										
	entration, D=Deple		Poducod M	— atriv CS	-Covered or Co	atod Sano	I Grains 21	cation: PL=P	oro Lining N	1_Matrix				
	cators: (Applical					aleu Sanc	Giallis. Li		tors for Prol		Hydric !	Soils ³ ·		
] Histosol (A		510 to un E			dy Redox (S5)				2 cm Muck (yu.io			
Histic Epip	•				ped Matrix (S6)				Red Parent		(TF2)			
Black Histi			_	-	ny Mucky Miner	al (F1) (e x	(cept MLRA 1)	_	Very Shallo	`	,	F12)		
_	Sulfide (A4)				ny Gleyed Matri		,		Other (Expla			,		
_ , ,	Below Dark Surface	e (A11)			eted Matrix (F3)				()		,			
_ '	Surface (A12)	, ,		=	ox Dark Surface									
_	cky Mineral (S1)				eted Dark Surfa				tors of hydro					
Sandy Gle	yed Matrix (S4)			Redo	ox Depressions	(F8)			land hydrologess disturbed			nt,		
estrictive Laye	er (if present):													
ype:														
epth (inches):							Hydric Soils P	resent?		Yes	\boxtimes	No		
emarks:														
HYDROLOGY														
IYDROLOGY Vetland Hydrol	ogy Indicators:													
IYDROLOGY Vetland Hydrol	ogy Indicators: rs (minimum of or	ne required			,	(00)			ary Indicators			red)		
IYDROLOGY Vetland Hydrol rimary Indicator Surface W	ogy Indicators: rs (minimum of or ater (A1)	ne required	l; check all t	Wate	er-Stained Leave	. ,		□ Wa	ater-Stained	Leaves (E	B9)	red)		
YDROLOGY /etland Hydrolorimary Indicator Surface W High Wate	ogy Indicators: rs (minimum of or later (A1) er Table (A2)	ne required		Wate (exc	er-Stained Leave	. ,	IB)	□ W:	ater-Stained	Leaves (E A, and 4B	B9)	red)		
IYDROLOGY Vetland Hydrolorimary Indicator Surface W High Wate Saturation	ogy Indicators: rs (minimum of or tater (A1) er Table (A2) (A3)	ne required		Wate (exc Salt	er-Stained Leave ept MLRA 1, 2, Crust (B11)	4A, and 4	IB)	□ W: (M	ater-Stained ILRA 1, 2, 4,4 ainage Patte	Leaves (E A, and 4B erns (B10)	B9)	red)		
YDROLOGY /etland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar	ogy Indicators: rs (minimum of or rater (A1) er Table (A2) r(A3) rks (B1)	ne required		Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates	4A , and 4	4B)	W: (M Dr. Dr.	ater-Stained ILRA 1, 2, 44 ainage Patte y-Season W	Leaves (E A, and 4B erns (B10) ater Table	B9) (B) (C2)	,	0)	
IYDROLOGY /etland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mai Sediment	ogy Indicators: rs (minimum of or later (A1) er Table (A2) (A3) rks (B1) Deposits (B2)	ne required		Wate (exc Salt Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc	4A , and 4 s (B13) dor (C1)		☐ Wi (M) ☐ Dr. ☐ Dr. ☐ Dr. ☐ Sa	ater-Stained ILRA 1, 2, 44 ainage Patte y-Season W aturation Visil	Leaves (EAA, and 4Berns (B10) ater Table	B9) (C2) (C3)	,	9)	
IYDROLOGY /etland Hydrology imary Indicator Surface W High Water Saturation Water Mail Sediment Drift Depo	ogy Indicators: rs (minimum of or rater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3)	ne required		Wate (exc Salt Aqua Hydr Oxid	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: rogen Sulfide Oc ized Rhizospher	4A, and 4 s (B13) dor (C1) res along	Living Roots (C3	War (M) Dr Dr Dr Dr Gr Gr Gr Gr	ater-Stained ILRA 1, 2, 44 ainage Patte y-Season W aturation Visil	Leaves (BA, and 4Berns (B10) ater Table ble on Aerosition (D2)	B9) (C2) (C3)	,	9)	
HYDROLOGY Vetland Hydrology Indicator Surface W High Wate Saturation Water Mar Sediment Drift Depo Algal Mar	ogy Indicators: rs (minimum of or fater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)	ne required		Wate (exc Salt Aqua Hydr Oxid	ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce	4A, and 4 s (B13) dor (C1) res along d Iron (C4	Living Roots (C3	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil ecomorphic Po nallow Aquita	Leaves (EAA, and 4BA erns (B10) ater Table ble on Aerosition (D2 rd (D3)	B9) (C2) (C3)	,	9)	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Wate Saturation Water Mai Sediment Drift Depo	ogy Indicators: rs (minimum of or rater (A1) re Table (A2) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	ne required		Wate (exc Salt Aqua Hydr Oxid Pres	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled	Living Roots (C3 b) d Soils (C6)	W;	atter-Stained ILRA 1, 2, 44 ainage Patte y-Season W attration Visil eomorphic Po allow Aquita	Leaves (EA, and 4B) erns (B10) ater Table ble on Ael osition (D3) est (D5)	B9) () () () () () () () () () () () () (gery (C	9)	
IYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment Drift Depo Algal Mat of Iron Depos	ogy Indicators: rs (minimum of or rater (A1) r Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)			Wate (exc Salt Aqua Hydr Oxid Pres Reca	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 b) d Soils (C6)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Po allow Aquita AC-Neutral To	Leaves (EA, and 4B) arms (B10) atter Table ble on Aerosition (D2) rd (D3) est (D5) unds (D6)	B9) B9) Comparison of the co	gery (C	9)	
IYDROLOGY Vetland Hydrol virimary Indicator Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mater Iron Depose Surface Sed	ogy Indicators: 's (minimum of or 'ater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) bil Cracks (B6)	Imagery (I		Wate (exc Salt Aqua Hydr Oxid Pres Reca	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 b) d Soils (C6)	W:	atter-Stained ILRA 1, 2, 44 ainage Patte y-Season W attration Visil eomorphic Po allow Aquita	Leaves (EA, and 4B) arms (B10) atter Table ble on Aerosition (D2) rd (D3) est (D5) unds (D6)	B9) B9) Comparison of the co	gery (C	9)	
IYDROLOGY /etland Hydrology imary Indicator Surface W High Water Saturation Water Mai Sediment Drift Depo	ogy Indicators: rs (minimum of or fater (A1) r Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) I Visible on Aerial	Imagery (I		Wate (exc Salt Aqua Hydr Oxid Pres Reca	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 b) d Soils (C6)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Po allow Aquita AC-Neutral To	Leaves (EA, and 4B) arms (B10) atter Table ble on Aerosition (D2) rd (D3) est (D5) unds (D6)	B9) B9) Comparison of the co	gery (C	99)	
IYDROLOGY Vetland Hydrology Surface W High Water Sediment Sediment Drift Depo Algal Mater Iron Depos Surface So Inundation Sparsely V ield Observation	ogy Indicators: rs (minimum of or fater (A1) r Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aerial fegetated Concavons:	lmagery (I		Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (D	Living Roots (C3 b) d Soils (C6)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Po allow Aquita AC-Neutral To	Leaves (EA, and 4B) arms (B10) atter Table ble on Aerosition (D2) rd (D3) est (D5) unds (D6)	B9) B9) Comparison of the co	gery (C	99)	
IYDROLOGY /etland Hydrology /etland Hydrology Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mater Iron Depos Surface So Inundation Sparsely V ield Observation	ogy Indicators: rs (minimum of or fater (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aerial fegetated Concavons: resent? Ye	Imagery (I ve Surface	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Re	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tilled Plants (Di marks)	Living Roots (C3 c) d Soils (C6) 1) (LRR A)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Po allow Aquita AC-Neutral To	Leaves (EA, and 4B) arms (B10) atter Table ble on Aerosition (D2) rd (D3) est (D5) unds (D6)	B9) B9) Comparison of the co	gery (C	99)	
HYDROLOGY Vetland Hydrology Vetland Hydrology Vetland Hydrology Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mater Iron Depose Inundation Sparsely V Veter Table Prese	ogy Indicators: rs (minimum of or fater (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aerial fegetated Concav ons: resent? Ye sent? Ye	Imagery (I /e Surface s 🏻	B7) (B8)	Wate (exc Salt Aqua Hydr Oxid Pres Rece Stun Othe	ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses er (Explain in Re	4A, and 4 s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks)	Living Roots (C3 d) d Soils (C6) 1) (LRR A)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Pe nallow Aquita AC-Neutral Te aised Ant Mo ost-Heave He	Leaves (EAA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and all all all all all all all all all al	B9) B9) Comparison of the co	gery (C	No No	
HYDROLOGY Vetland Hydrology Vetland Hydrology Vetland Hydrology Surface W High Water Saturation Sediment Drift Depo Algal Mater Iron Depose Inundation Sparsely \ Veter Table Preservation Preservation Preservation Indeposed Incompany Veter Table Preservation Preserv	ogy Indicators: rs (minimum of or fater (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aerial fegetated Concav ons: resent? Ye sent? Ye	Imagery (I ve Surface s 🏻 s	B7)	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductive ted or Stresses er (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks) 1 surface surface	Living Roots (C3 c) d Soils (C6) 1) (LRR A)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Pe nallow Aquita AC-Neutral Te aised Ant Mo ost-Heave He	Leaves (EAA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and all all all all all all all all all al	B9) e (C2) rial Imag 2) (LRR A	A)		
Primary Indicator Surface W High Wate Saturation Water Man Sediment Drift Depo Algal Mate Iron Depos Surface So Inundation Sparsely V Field Observation Surface Water P Vater Table Prese Saturation Prese includes capillar	ogy Indicators: rs (minimum of or rater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aerial /egetated Concavons: resent? ye sent? ye y fringe)	Imagery (I ve Surface s 🏻 s	B7)	Wate (exc Salt Aqua Hydr Oxid Pres Recc Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates rogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductive ted or Stresses er (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D marks) 1 surface surface	Living Roots (C3 c) d Soils (C6) 1) (LRR A)	W:	ater-Stained ILRA 1, 2, 4,4 ainage Patte y-Season W aturation Visil eomorphic Pe nallow Aquita AC-Neutral Te aised Ant Mo ost-Heave He	Leaves (EAA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and all all all all all all all all all al	B9) e (C2) rial Imag 2) (LRR A	A)		

Project Site:	Lynnwood Link Extension			City/Cour	nty: Shoreline/King	Sampling Date:	3/21/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WSH4-SP2
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Ran	ige: <u>S05, T26N, R4E</u>	
Landform (hillslope, te	errace, etc.): small terrace (she	elf) on hillslop	<u>e</u> Loca	al relief (conc	eave, convex, none): none	Slope	e (%): <u>0</u>
Subregion (LRR):	<u>A</u>	Lat: 47.7	7541550900		Long: <u>-122.31689681300</u>	Datum: 1	NAD83
Soil Map Unit Name:	<u>Urban Land</u>				NWI clas	ssification: <u>Upland</u>	
Are climatic / hydrolog	gic conditions on the site typical fo	r this time of	year? Y	es 🗆	No 🗌 (If no, explain i	in Remarks.)	
Are Vegetation □,	, Soil □, or Hydrology	☐, signific	antly disturbed	d? Are "	'Normal Circumstances" present	? Yes	⊠ No □
Are Vegetation □,	, Soil □, or Hydrology	☐, natural	lly problematic	? (If ne	eeded, explain any answers in Re	emarks.)	
	NDINGS – Attach site map s		· • ·	locations,	transects, important featu	ıres, etc.	
Hydrophytic Vegetatio	n Present?	Yes 🗆		Is the Samp	nled Area		
Hydric Soil Present?		Yes 🗆		within a We		Yes	□ No ⊠
Wetland Hydrology Pro	esent?	Yes 🗆	No 🛛				
Remarks: The samp	ole plot is located approximately 1	8 feet upslop	e of WSH4-SP	1 on a shelf	of the hillslope. The overall hillslo	ope is an approximately	/ 30% slope.
VEGETATION – Us	se scientific names of plant		Daminant	la di aatan	Т		
Tree Stratum (Plot siz	:e: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	:	
1. Alnus rubra		<u>20</u>	<u>ves</u>	<u>FAC</u>	Number of Dominant Species	4	(4)
2. Pseudotsuga men	<u>nzesii</u>	<u>25</u>	<u>ves</u>	<u>FACU</u>	That Are OBL, FACW, or FAC	: <u>1</u>	(A)
3					Total Number of Dominant	<u>3</u>	(B)
4					Species Across All Strata:	<u>5</u>	(В)
50% = 22.5, 20% = 9		<u>45</u>	= Total Cove	r	Percent of Dominant Species	. <u>33</u>	(A/B)
Sapling/Shrub Stratun	<u>n</u> (Plot size: <u>5M</u>)				That Are OBL, FACW, or FAC	: <u>55</u>	(AB)
1					Prevalence Index worksheet	:	
2					Total % Cover of:	Multipl	y by:
3					OBL species	x1 =	
4					FACW species	x2 =	
5					FAC species	x3 =	
50% =, 20% =			= Total Cove	r	FACU species	x4 =	
Herb Stratum (Plot siz	ze: <u>2M</u>)				UPL species	x5 =	
1. Equisetum telmate	<u>eia</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	Column Totals:	_ (A)	(B)
2					Prevalence	e Index = B/A =	
3					Hydrophytic Vegetation Indi	cators:	
4					☐ 1 – Rapid Test for Hydro	phytic Vegetation	
5					☐ 2 - Dominance Test is >	50%	
6					3 - Prevalence Index is	≤3.0 ¹	
7					4 - Morphological Adapta	- ations ¹ (Provide suppor	ting
8					data in Remarks or or	n a separate sheet)	3
9					5 - Wetland Non-Vascula	ar Plants ¹	
10					☐ Problematic Hydrophytic	: Vegetation ¹ (Explain)	
11							
50% = <u>2.5</u> , 20% = <u>1</u>		<u>5</u>	= Total Cove	r	¹ Indicators of hydric soil and w be present, unless disturbed o		
Woody Vine Stratum ((Plot size: <u>5M</u>)				be present, unless disturbed o	i problematic.	
1. Rubus armeniacus	<u>'S</u>	90	<u>yes</u>	<u>FACU</u>			
2					Hydrophytic	, 	
50% = <u>45</u> , 20% = <u>9</u>		90	= Total Cove	r	Vegetation Y Present?	∕es □	No 🗵
% Bare Ground in Her	rb Stratum						
c	Species with 5% or less absolute	coverage wer	e not consider	ed dominant.	The 1988 Region 9 National W	etland Plant List and 19	993 Supplement
i itelliains.	sed for this delineation.	J - 01			<u> </u>		

	Matrix	(Redox Feat	ures		_						
nches)	Color (moist)	%	6	Cole	or (mo	ist) %	Type ¹	Loc ²	Texture	<u> </u>		Rema	arks		
<u>0-6</u>	10YR 3/1	<u>10</u>	<u>00</u>	-					Gr Sa Lo		_				
<u>6-19</u>	2.5Y 4/2	<u>10</u>	<u>00</u>	_					Gr Sa Lo	oam	_				
				-			-			<u> </u>	_				
				-							<u>—</u>				
		_	_	-			-								
				-											
				-			-				_				
vne: C= Co	ncentration D=De	-nletion	— RM=R	- Reduced	- Matri	ix, CS=Covered or Co	ated Sand	d Grains 2	ocation: PL:	=Pore Lining	— g, M=Matrix				
						otherwise noted.)	atou ourio	J Oranio.			Problemation		c Soi	ls³:	
Histoso						Sandy Redox (S5)				2 cm Mu		,			
	pipedon (A2)					Stripped Matrix (S6)					ent Material	(TF2)			
_	listic (A3)					Loamy Mucky Minera	al (F1) (ex	(cept MLRA1)			allow Dark S	, ,	(TF1	2)	
_	en Sulfide (A4)					Loamy Gleyed Matri		. ,		-	xplain in Re			•	
	ed Below Dark Sur	face (A1	11)			Depleted Matrix (F3)				,	•	,			
Thick D	ark Surface (A12)					Redox Dark Surface	(F6)								
Sandy	Mucky Mineral (S1	1)				Depleted Dark Surfa	ce (F7)				drophytic v			d	
Sandy	Gleyed Matrix (S4))				Redox Depressions	(F8)				ology must bed or prob				
estrictive L	ayer (if present):										-				
pe:															
pth (inches	s):							Hydric Soils F	Present?		Yes			No	\boxtimes
emarks:															
YDROLO(
=	rology Indicators														
YDROLOG	rology Indicators ators (minimum of		quired;	check a	_						itors (2 or m		uired)	
YDROLO etland Hyd rimary Indic	rology Indicators		quired;	check a	all that	Water-Stained Leave	` '			Water-Stair	ned Leaves	(B9)	uired)	
YDROLOG etland Hyd imary Indic Surface	rology Indicators ators (minimum of e Water (A1) /ater Table (A2)		quired;	check a		Water-Stained Leave (except MLRA 1, 2,	` '	4B)		Water-Stair	ned Leaves 2, 4A, and 4	(B9) B)	uired)	
YDROLOG etland Hyd imary Indic Surface High W	rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3)		quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and 4	4B)		Water-Stair (MLRA 1, 2 Drainage Pa	ned Leaves 2, 4A, and 4 atterns (B10	(B9) B)))	<u> </u>)	
YDROLOG etland Hyd imary Indic Surface High W Satura Water	rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1)		quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	4A , and 4	4B)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Season	ned Leaves 2, 4A, and 4 atterns (B10 1 Water Tab	(B9) B) (B)		,	
YDROLOG etland Hyd imary Indic Surface High W Satura Water Sedimo	ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc	4A , and 4 s (B13) dor (C1)			Water-Stair (MLRA 1, 2 Drainage Pa Dry-Season Saturation \	ned Leaves 2, 4A, and 4 atterns (B10 a Water Tab Visible on A	(B9) B) (B) (B) (B) (B) (B)		,	
YDROLO etland Hyd imary Indic Surfac High W Satura Water Sedime	rology Indicators ators (minimum of a Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and 4 s (B13) dor (C1) res along l	Living Roots (C3		Water-Stair (MLRA 1, 2 Drainage Parainage Para	ned Leaves 2, 4A, and 4 atterns (B10 a Water Tab Visible on A	(B9) B) (B) (B) (B) (B) (B)		,	
YDROLOGETIAND HYDROLOGIC Surface High W Satura Water Sedime Drift De	rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4)		quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduce	4A, and 4 s (B13) dor (C1) res along I d Iron (C4	Living Roots (C3		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation N Geomorphic	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on Ac ic Position (I uitard (D3)	(B9) B) (B) (B) (B) (B) (B)		,	
YDROLOG etland Hydrimary Indice Surface High W Satura Water Sedime Drift De Algal M	ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4)	one req	quired;	check a		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec	Living Roots (C3 I) d Soils (C6)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphi Shallow Aqı FAC-Neutra	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on Ai c Position (I uitard (D3) al Test (D5)	(B9) B) O) le (C2) erial Im D2)	agery	,	
YDROLOGIC TENT OF THE PROPERTY	ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6)	one req				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves c, 4A, and 4 atterns (B10 n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (Do	(B9) B) Ile (C2) erial Im D2)	agery	,	
YDROLOG etland Hyd imary Indic Surface High W Satura Water Sedime Drift De Algal N Iron De Surface Inunda	rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer	one req	gery (B	57)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on Ai c Position (I uitard (D3) al Test (D5)	(B9) B) Ile (C2) erial Im D2)	agery	,	
YDROLOGE TELLOG TO THE PROPERTY OF THE PROPERT	rology Indicators ators (minimum of a Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer	one req	gery (B	57)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves c, 4A, and 4 atterns (B10 n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (Do	(B9) B) Ile (C2) erial Im D2)	agery	,	
YDROLOGE TELL STATE TO THE PROPERTY OF THE PRO	rology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer ely Vegetated Conditations:	one req rial Imag cave Su	gery (B	57) (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Octoor Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Re	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves c, 4A, and 4 atterns (B10 n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (Do	(B9) B) Ile (C2) erial Im D2)	agery	,	
YDROLOG etland Hyd imary Indic Surface High W Satura Water Sedime Drift De Indicate Inunda Sparsee eld Observ	ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer ely Vegetated Concestr Present?	one req rial Imag cave Su Yes	gery (B	57) (B8) No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves c, 4A, and 4 atterns (B10 n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (Do	(B9) B) Ile (C2) erial Im D2)	agery	,	
YDROLOG etland Hyd imary Indic Surface High W Satura Water Sedime Drift De Indicate Inunda Sparse eld Observ ater Table laturation Pre	rology Indicators ators (minimum of a Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer ations: ar Present? Present?	one req rial Imag cave Su	gery (B	57) (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Octoor Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Re	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tilled	Living Roots (C3 I) d Soils (C6) 1) (LRR A)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphio Shallow Aq FAC-Neutra Raised Ant Frost-Heave	ned Leaves 4, 4A, and 4 atterns (B10 a Water Tab Visible on Ac c Position (I uitard (D3) al Test (D5) Mounds (D0 e Hummock	(B9) B) Ile (C2) erial Im D2)	agery	,	
YDROLOG etland Hyd imary Indic Surface High W Satura Water Sedime Drift De Income Income Surface Income Inc	ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer ely Vegetated Conc ations: er Present? Present? elilary fringe)	rial Imag cave Su Yes Yes Yes	ggery (B	57) (B8) No No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1 marks)	Living Roots (C3 s) d Soils (C6) 1) (LRR A)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphio Shallow Aq FAC-Neutra Raised Ant Frost-Heave	ned Leaves 4, 4A, and 4 atterns (B10 a Water Tab Visible on Ac c Position (I uitard (D3) al Test (D5) Mounds (D0 e Hummock	(B9) B) Ile (C2) erial Im D2) (LRR S (D7)	agery	, (C9)	
YDROLOG etland Hyd imary Indic Surface High W Satura Water Sedime Drift De Income Income Surface Income Inc	ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Aer ely Vegetated Conc ations: er Present? Present? elilary fringe)	rial Imag cave Su Yes Yes Yes	ggery (B	57) (B8) No No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	4A, and 4 s (B13) dor (C1) res along I d Iron (C4 on in Tillec Plants (D1 marks)	Living Roots (C3 s) d Soils (C6) 1) (LRR A)		Water-Stair (MLRA 1, 2 Drainage Pa Dry-Seasor Saturation \ Geomorphio Shallow Aq FAC-Neutra Raised Ant Frost-Heave	ned Leaves 4, 4A, and 4 atterns (B10 a Water Tab Visible on Ac c Position (I uitard (D3) al Test (D5) Mounds (D0 e Hummock	(B9) B) Ile (C2) erial Im D2) (LRR S (D7)	agery	, (C9)	

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: Shoreline/King	Sampling Date:	3/21/12
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSH5-SP1
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ran	ige: <u>S05, T26N, R4E</u>	<u>.</u>
Landform (hillslope, terrace, etc.):		Loca	l relief (conc	ave, convex, none): <u>convex</u>	Slop	oe (%): <u>3</u>
Subregion (LRR): <u>A</u>	Lat: 47.7	7671936140		Long: <u>-122.31690827100</u>	Datum:	NAD83
Soil Map Unit Name: <u>Urban Land</u>				NWI clas	ssification: PFO	
Are climatic / hydrologic conditions on the site typical for	this time of y	ear? Ye	es 🗆	No 🗌 (If no, explain	in Remarks.)	
Are Vegetation □, Soil □, or Hydrology	☐, significa	antly disturbed	? Are "l	Normal Circumstances" present	? Yes	⊠ No □
Are Vegetation \square , Soil \square , or Hydrology	□, naturall	ly problematic?	? (If ne	eded, explain any answers in Re	emarks.)	
SUMMARY OF FINDINGS - Attach site map sh	owing san	npling point	locations,	transects, important featu	ıres, etc.	
Hydrophytic Vegetation Present?	Yes 🛛	No 🗆				
Hydric Soil Present?	Yes 🛛	No 🗆	Is the Samp within a We		Yes	⊠ No □
Wetland Hydrology Present?	Yes 🛚	No 🗆				
Remarks: The sample plot is located on the west side	of McAleer C	reek, approxin	nately 40 fee	t west northwest of the outlet.		
		, , , , , ,	,			
VEGETATION – Use scientific names of plants	;					
Tree Stratum (Plot size: 10M)	Absolute	Dominant	Indicator	Dominance Test Worksheet:		
1. Salix scouleriana	% Cover 30	<u>Species?</u> <u>yes</u>	Status FAC	Number of Deminent Coories		
2. Alnus rubra	<u>15</u>	<u>yes</u>	FAC	Number of Dominant Species That Are OBL, FACW, or FAC	: <u>3</u>	(A)
3. Betula sp.	<u>15</u>	<u>yes</u>	<u>- 710</u>	Total Number of Deminent		
4.	10	<u>100</u>	-	Total Number of Dominant Species Across All Strata:	<u>4</u>	(B)
50% = <u>60</u> , 20% = <u>12</u>	60	= Total Cover		Paraent of Dominant Charles		
Sapling/Shrub Stratum (Plot size: 5M)	<u>50</u>			Percent of Dominant Species That Are OBL, FACW, or FAC	: <u>75</u>	(A/B)
1				Prevalence Index worksheet		
2				Total % Cover of:		ply by:
3				OBL species	x1 =	2.17 20 1.
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =	·	= Total Cover		FACU species	x4 =	
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
Phalaris arundinacea	100	V06	FACW			(D)
2	100	<u>yes</u>	<u>I AOW</u>	Column Totals:	_ (A) e Index = B/A =	(B)
3 4.				Hydrophytic Vegetation Indi		
5				□ 1 – Rapid Test for Hydro☑ 2 - Dominance Test is >		
6.				_		
				☐ 3 - Prevalence Index is s	-	
7				4 - Morphological Adapta data in Remarks or o		orting
8				5 - Wetland Non-Vasculi		
9				_		
10				☐ Problematic Hydrophytic	Vegetation' (Explain)	'
11			—	¹ Indicators of hydric soil and w	vetland hydrology mus	st
50% = 50, 20% = 20	<u>100</u>	= Total Cover		be present, unless disturbed of		
Woody Vine Stratum (Plot size: 5M)	_		E4011			
1. Rubus armeniacus	<u>5</u>	<u>no</u>	<u>FACU</u>	Hydrophytic		
2					∕es ⊠	No 🗆
50% = 2.5, 20% = 1	<u>5</u>	= Total Cover	•	Present?		
% Bare Ground in Herb Stratum						
Remarks: Species with 5% or less absolute or	overage were	not considere	ed dominant.	The 1988 Region 9 National We	etland Plant List and 1	993 Supplement
were used for this delineation.						

AYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) Saturation (A3) Saturation (A3) Sati Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Srift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8)	0-10	Color (moint)				Redox Feat									
Indicators (Applicable to all LRRs, unless otherwise noted.)		Color (Illoist)	%	Color (moist)	%	Type ¹	Loc²	Texture	<u> </u>		Remar	ks		
VPROLOGY VPROLO	40.40	10YR 3/2	<u>100</u>		_				Sa Loa	<u> </u>	•				
Histosol (A1)	<u>10-19</u>	2.5Y 3/1	<u>99</u>	<u>10YR</u>	3/6	<u>1</u>	<u>C</u>	<u>M</u>	<u>Gr San</u>	<u></u>					
Histosol (A1)					_				-	-	•				
Histosol (A1)					_				-	-					
Histosol (A1)					_				-	-	•				
Histics (AF) Sandy Redox (S5) 2 cm Muck (Af10) 3 sandy Redox (S5) 3 cm Muck (Af10) 3 sandy Mucky Mineral (F1) (except MLRA 1) 4 very Shallow Dark Surface (TF12) 4 very Shallow Dark Surface (TF1					_										
Histosol (A1)					_					-					
Histosol (A1)		ntration D-Donk	ation PM-	Poducod M	 otriv CS-	-Covered or Co	atod Sand	I Grains ² Lor		-Poro Lining	M_Matrix				
Histosol (A1)							aleu Sanu	I Giailis. Lo				Hydric	Soils	3.	
Histic Epipedon (A2)	_		no to an L									yuo	00		
Black Histic (A3)	. `	·										(TF2)			
Hydrogen Sulfide (A4)					-			cept MLRA 1)				` '	TF12)	
Depleted Below Dark Surface (A12)	_									-					
Sandy Mucky Mineral (S1)	_		e (A11)			-						*			
Sandy Gleyed Matrix (S4)	Thick Dark	Surface (A12)			Redo	ox Dark Surface	(F6)								
Sandy Gleyed Matrix (S4)	Sandy Mud	cky Mineral (S1)			Depl	eted Dark Surfa	ce (F7)								
Pype:epth (inches):	Sandy Gle	yed Matrix (S4)			Redo	ox Depressions	(F8)						ent,		
PyDROLOGY Mater Table Mater Table Mater M	estrictive Laye	er (if present):									•				
PYDROLOGY Vettand Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required)															
Application Companies Co	ype:								_			M			
Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Field Observations:	Depth (inches):	dox concentration	is in upper	part of lowe	er layer.			Hydric Soils Pr	esent?		Yes			lo	<u> </u>
Surface Water (A1)	Depth (inches): Remarks: Re		is in upper	part of lowe	er layer.			Hydric Soils Pr	esent?		Yes			No	
High Water Table (A2) Saturation (A3) Salt Crust (B11) 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) Salt Crust (B11) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Frost-Heave Hummocks (D7)	HYDROLOGY Vetland Hydrol	ogy Indicators:						Hydric Soils Pr						No	
Saturation (A3)	AYDROLOGY Vetland Hydrology	ogy Indicators: rs (minimum of on		; check all t	nat apply	<u>'</u>		Hydric Soils Pr	Secon		rs (2 or mc	ore requi		No	
Water Marks (B1)	Nepth (inches): Remarks: Re RYDROLOGY Vetland Hydrol Primary Indicator Surface W	logy Indicators: rs (minimum of on		; check all t	nat apply Wate	er-Stained Leave	` '		Secon	Water-Stained	rs (2 or mo	ore requi		No	
Sediment Deposits (B2)	epth (inches): emarks: Re EYDROLOGY Vetland Hydrol rimary Indicator Surface W High Wate	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2)		; check all tl	nat apply Wate (exce	er-Stained Leave	` '		Secon	Water-Stained	rs (2 or mo d Leaves (I IA, and 4E	ore requi B9)		No	
Drift Deposits (B3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Oxidized Rhizospheres along Living Roots (C3) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8)	IYDROLOGY Vetland Hydrol rimary Indicator Surface W High Wate Saturation	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3)		; check all tl	nat apply Wate (exce	er-Stained Leave ept MLRA 1, 2, Crust (B11)	4A, and 4		Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt	rs (2 or mo d Leaves (I l A, and 4E erns (B10)	ore requi B9) 3)		No	
Algal Mat or Crust (B4)	Pepth (inches): emarks: Re Pepth (inches): emarks: Re Pepth (inches): Pepth (inches):	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1)		; check all ti	nat apply Wate (exc Salt (er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates	4A , and 4		Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V	rs (2 or mo d Leaves (I I A, and 4E erns (B10) Vater Table	ore requi B9) 3)) e (C2)	ired)		
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) ield Observations:	IYDROLOGY Vetland Hydrol- rimary Indicator Surface W High Wate Saturation Water Mar	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)		; check all tl	nat apply Wate (exce Salt e Aqua	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates ogen Sulfide Oc	4A, and 4 s (B13) dor (C1)	·B)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	rs (2 or mo d Leaves (I I A, and 4E erns (B10) Vater Table ible on Ae	ore requi B9) 3)) e (C2) rial Imag	ired)		
Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) ield Observations:	IYDROLOGY Vetland Hydrol rimary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depo	logy Indicators: rs (minimum of on Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3)		; check all ti	nat apply Wate (exce Salt e Aqua Hydr Oxide	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher	4A, and 4 s (B13) dor (C1) res along L	JB)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F	rs (2 or mod Leaves (I IA, and 4E erns (B10) Vater Table Sible on Ae Position (D	ore requi B9) 3)) e (C2) rial Imag	ired)		
Inundation Visible on Aerial Imagery (B7)	AYDROLOGY Wetland Hydrol wimary Indicator Surface W Saturation Water Mar Sediment Drift Depo	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)		; check all the	mat apply Wate (exc Salt (Aqua Hydr Oxidi Pres	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrates ogen Sulfide Oc ized Rhizospher ence of Reduce	4A , and 4 s (B13) dor (C1) res along L d Iron (C4)	BB) Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	rs (2 or mod d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3)	ore requi B9) 3)) e (C2) rial Imag	ired)		
Sparsely Vegetated Concave Surface (B8) Field Observations:	HYDROLOGY Vetland Hydrol Surface W High Water Mater Mai Sediment Drift Depo Algal Mater Iron Depoi	logy Indicators: rs (minimum of on Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)		; check all the	mat apply Wate (exc Salt (Aqua Hydr Oxidi Pres Rece	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	4A, and 4 s (B13) dor (C1) res along L d Iron (C4)	Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or module and 4E erns (B10) Vater Table on Ae Position (D ard (D3)	ore requi B9) 3)) e (C2) rial Imag	ired)		
	HYDROLOGY Wetland Hydrol Surface W High Water Saturation Water Man Sediment Drift Depo Algal Mat Iron Depoe	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	e required	; check all th	mat apply Wate (exce Salt (Aqua Hydr Oxidi Pres Rece Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	s (B13) dor (C1) res along l d Iron (C4 on in Tilled Plants (D1	Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (I IA, and 4E erns (B10) Vater Table dible on Ae Position (D ard (D3) Fest (D5) bounds (D6	ore requi B9) 3)) e (C2) rial Imag 2)	ired)		
surface Water Present? Yes No Depth (inches):	AYDROLOGY Wetland Hydrol Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depo: Inundation	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4) sits (B5) oil Cracks (B6) n Visible on Aerial	e required	; check all the	mat apply Wate (exce Salt (Aqua Hydr Oxidi Pres Rece Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	s (B13) dor (C1) res along l d Iron (C4 on in Tilled Plants (D1	Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (I IA, and 4E erns (B10) Vater Table dible on Ae Position (D ard (D3) Fest (D5) bounds (D6	ore requi B9) 3)) e (C2) rial Imag 2)	ired)		
· ···· · · · · · · · · · · · · · · · ·	AYDROLOGY Wetland Hydrol Primary Indicator Surface W High Water Mar Sediment Drift Depo Algal Mat Iron Depo: Surface S Inundatior Sparsely \	rogy Indicators: rs (minimum of on Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4) sits (B5) oil Cracks (B6) n Visible on Aerial Vegetated Concav	e required	; check all the	mat apply Wate (exce Salt (Aqua Hydr Oxidi Pres Rece Stun	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	s (B13) dor (C1) res along l d Iron (C4 on in Tilled Plants (D1	Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (I IA, and 4E erns (B10) Vater Table dible on Ae Position (D ard (D3) Fest (D5) bounds (D6	ore requi B9) 3)) e (C2) rial Imag 2)	ired)		
Vater Table Present? Yes 🛛 No 🔲 Depth (inches): 9	AYDROLOGY Vetland Hydrol Verimary Indicator Surface W High Water Mar Sediment Drift Depo Algal Mat Iron Depo: Surface Si Inundatior Sparsely V Tield Observation	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) esits (B3) or Crust (B4) sits (B5) oil Cracks (B6) n Visible on Aerial Vegetated Concavons:	e required	; check all th	wate apply Wate (exce Salt of Aqua Hydr Oxidi Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction	s (B13) dor (C1) res along l d Iron (C4 on in Tilled Plants (D1	Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (I IA, and 4E erns (B10) Vater Table dible on Ae Position (D ard (D3) Fest (D5) bounds (D6	ore requi B9) 3)) e (C2) rial Imag 2)	ired)		
includes capillary fringe) Yes No Depth (inches): surface Wetland Hydrology Present? Yes No	HYDROLOGY Wetland Hydrol- Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depo: Surface Sc Inundatior Sparsely V Sield Observation	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) n Visible on Aerial Vegetated Concav ons: resent? Yes	lmagery (E	; check all ti	mat apply Wate (exc Salt (Aqua Hydr Oxid Pres Rece Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductic ted or Stresses or (Explain in Re	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1 marks)	Living Roots (C3)	Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod d Leaves (I IA, and 4E erns (B10) Vater Table dible on Ae Position (D ard (D3) Fest (D5) bounds (D6	ore requi B9) 3)) e (C2) rial Imag 2)	ired)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	HYDROLOGY Wetland Hydrol Primary Indicator Surface W High Water Man Sediment Drift Depo Algal Mat Iron Depos Surface Si Inundation Sparsely \ Gurface Water P Water Table Prese	ogy Indicators: rs (minimum of on /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) n Visible on Aerial Vegetated Concav ons: resent? Yes ent? Yes	Imagery (E	; check all the second	mat apply Wate (exce Salt e Aqua Hydr Oxidi Pres Stun Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reduction ted or Stresses or (Explain in Re Depth (inches):	s (B13) dor (C1) res along L d Iron (C4 on in Tilled Plants (D1 marks)	Living Roots (C3)) d Soils (C6) I) (LRR A)	Secon	Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave H	rs (2 or mod Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) ounds (D6) Hummocks	ore requi B9) 3) e (C2) rial Imag 2) (LRR A	gery ((C9)	
	HYDROLOGY Wetland Hydrol Primary Indicator Surface W High Water Man Sediment Drift Depo Algal Mat Iron Depo: Inundation Surface Si Inundation Sparsely \ Gurface Water P Water Table Prese Saturation Prese Sincludes capillar	logy Indicators: rs (minimum of on Vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) n Visible on Aerial Vegetated Concavons: resent? yes ent? yes ry fringe)	Imagery (Eve Surface	; check all ti	nat apply Wate (excessalt) Aqua Hydr Oxidi Presi Recesstuni Othe	er-Stained Leave ept MLRA 1, 2, Crust (B11) atic Invertebrate: ogen Sulfide Oc ized Rhizospher ence of Reduce ent Iron Reductic ted or Stresses or (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along l d Iron (C4) on in Tilled Plants (D1 marks) g surface	Living Roots (C3)) d Soils (C6) d) (LRR A)	Secon	Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave H	rs (2 or mod Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) ounds (D6) Hummocks	ore requi B9) 3) e (C2) rial Imag 2) (LRR A	gery ((C9)	

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: Shoreline/King	Sampling Date:	3/21/12
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WSH5-SP2
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ran	ige: <u>S05, T26N, R4E</u>	
Landform (hillslope, terrace, etc.): slope		Loca	I relief (conc	ave, convex, none): none	Slope	e (%): <u>15</u>
Subregion (LRR): <u>A</u>	Lat: 47.7	7676142620		Long: <u>-122.31717815600</u>	Datum: N	NAD83
Soil Map Unit Name: <u>Urban Land</u>				NWI clas	ssification: <u>Upland</u>	
Are climatic / hydrologic conditions on the site typical for	this time of y	ear? Ye	es 🗆	No	in Remarks.)	
Are Vegetation \square , Soil \square , or Hydrology	□, signification	antly disturbed	? Are "l	Normal Circumstances" present	? Yes	⊠ No □
Are Vegetation \square , Soil \square , or Hydrology	□, naturall	ly problematic?	(If ne	eded, explain any answers in Re	emarks.)	
SUMMARY OF FINDINGS – Attach site map sh	owing san	npling point	locations,	transects, important featu	ıres, etc.	
Hydrophytic Vegetation Present?	Yes	No 🛛	la tha Camm	lad Araa		
Hydric Soil Present?	Yes 🛛		Is the Samp within a We		Yes	□ No ⊠
Wetland Hydrology Present?	Yes 🛚	No 🗆				
Remarks: The sample plot is located west of the wetla	nd and McAle	eer Creek, on t	he I-5 slope.			
VEGETATION – Use scientific names of plants	S					
Tree Stratum (Plot size: 10M)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	:	
1. <u>Populus balsamifera</u>	80	ves	FAC	Number of Dominant Species		
2. Pdeudotsuga menzeisii	20	<u>ves</u>	FACU	That Are OBL, FACW, or FAC	: <u>1</u>	(A)
3				Total Number of Dominant		(5)
4				Species Across All Strata:	<u>3</u>	(B)
50% = 50, $20% = 20$	<u>100</u>	= Total Cover	•	Percent of Dominant Species	00	(4(5)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC	: <u>33</u>	(A/B)
1				Prevalence Index worksheet	:	
2				Total % Cover of:	Multiply	y by:
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% =, 20% =		= Total Cover	•	FACU species	x4 =	
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
1				Column Totals:	_ (A)	(B)
2					e Index = B/A =	、 /
3				Hydrophytic Vegetation Indi		
4.				☐ 1 – Rapid Test for Hydro		
5				2 - Dominance Test is >		
6.				☐ 3 - Prevalence Index is <		
7				5 1 10 valonico in acx 10 <u> </u>		st
8				4 - Morphological Adapta data in Remarks or or		ing
9				☐ 5 - Wetland Non-Vascula	ar Plants ¹	
10				□ Problematic Hydrophytic		
11				— Problematic Hydrophytic	vegetation (Explain)	
50% =, 20% =		= Total Cover		¹ Indicators of hydric soil and w		
Woody Vine Stratum (Plot size: 5M)		= 10tal 00vcl		be present, unless disturbed o	r problematic.	
1. Rubus armeniacus	<u>75</u>	<u>yes</u>	<u>FACU</u>			
Hedera helix	<u>10</u> 2		NL (UPL)	Hydrophytic		
		no = Total Cover		Vegetation Y	∕es □	No 🗵
50% = <u>38.5</u> , 20% = <u>15.4</u>	<u>77</u>	- i olai covei		Present?		
% Bare Ground in Herb Stratum		1 / TI /0	D	. 1347 d. 1551	200.0	16 11:
Remarks: Moss covers approximately 40% of delineation.	the sample p	plot. The 1988	Region 9 Na	ational Wetland Plant List and 19	393 Supplement were u	sed for this

Depth	Matrix				Redox Feat	tures								
nches) Colo	or (moist)	%	Color (m	noist)	%	Type ¹	Loc ²	Texture			Remark	s		
<u>0-9</u> <u>10</u>	OYR 3/3	<u>100</u>		_				Loam						
<u>9-18</u> <u>5</u>	5Y 5/2	<u>85</u>	10YR 4	<u>l/6</u>	<u>15</u>	<u>C</u>	<u>M</u>	Gr Sa Lo	oam					
	<u> </u>			_										
				_					-					
	<u> </u>			-										
				_					-					
				_					-					
ype: C= Concentra	tion D-Donloti		Poducod Ma	- triv CS-C	Covered or Co	atod Sand	Grains ² Lo	cation: DI -	=Pore Lining, N	M_Matrix				
dric Soil Indicato						Jaleu Sanu	Giallis. Lo		cators for Pro		Hydric 9	Soils ³ ·		
Histosol (A1)	ro. (rippiioubio	r to all El			Redox (S5)				2 cm Muck		,			
Histic Epipedor	n (A2)			-	ed Matrix (S6)				Red Parent		TF2)			
Histic Epipedor Black Histic (A	-						cept MLRA 1)		Very Shallo	`	,	F12)		
Hydrogen Sulfi	•			-	Gleyed Matri		,		Other (Expl		-	,		
	w Dark Surface	(A11)		-	ed Matrix (F3)						-,			
Depleted Below Thick Dark Sur		, ,		-	Dark Surface									
Sandy Mucky M	Mineral (S1)				ed Dark Surfa				cators of hydro					
Sandy Gleyed	Matrix (S4)			Redox	Depressions	(F8)			etland hydrolo nless disturbe			nt,		
estrictive Layer (if	present):									,				
pe: _														
pth (inches):							Hydric Soils P	esent?		Yes	\boxtimes	No		
						ı								
emarks: YDROLOGY														
YDROLOGY (etland Hydrology			shoot all th					Cooper	don lodicate	. (2 00 00		ro d)		
YDROLOGY etland Hydrology	ninimum of one	required;			Chained Louis				dary Indicator			red)		
YDROLOGY etland Hydrology imary Indicators (m	ninimum of one	required;	; check all th	Water-	Stained Leav	, ,	D)		Water-Stained	Leaves (E	39)	red)		
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta	ninimum of one (A1) able (A2)	required;		Water-	ot MLRA 1, 2,	, ,	В)		Water-Stained	Leaves (E	39) 3)	red)		
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3	(A1) able (A2)	required;		Water- (exception Salt Cr	ot MLRA 1, 2, rust (B11)	4A, and 4	В)	\ 	Water-Stained (MLRA 1, 2, 4, Drainage Patte	Leaves (E A, and 4B erns (B10)	39)	red)		
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (ninimum of one (A1) able (A2) b) B1)	required;		Water- (except Salt Cr Aquation	ot MLRA 1, 2, rust (B11) c Invertebrate	4A, and 4 les (B13)	B)		Water-Stained (MLRA 1, 2, 4) Drainage Patte Dry-Season W	Leaves (EA, and 4Berns (B10)	39) 3) e (C2)	,		
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep	ninimum of one (A1) able (A2) b) B1) osits (B2)	required;		Water- (except Salt Cr Aquation Hydrog	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od	4A , and 4l es (B13) dor (C1)			Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi	Leaves (EA, and 4B) erns (B10) ater Table	39) (C2) (C3) (C3)	,	3)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits	ninimum of one (A1) able (A2) b) B1) osits (B2) (B3)	required;		Water- (except Salt Cr Aquation Hydrog Oxidize	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe	4A, and 4les (B13) dor (C1) res along L	iving Roots (C3)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P	Leaves (EA, and 4B) erns (B10) ater Table ble on Ael	39) (C2) (C3) (C3)	,	3)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	runinimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4)	required;		Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce	4A, and 4l es (B13) dor (C1) res along L ed Iron (C4)	.iving Roots (C3)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita	Leaves (EA, and 4B) erns (B10) dater Table dible on Aer dosition (D2) ard (D3)	39) (C2) (C3) (C3)	,	9)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (ninimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4) (B5)	required;		Water- (excep Salt Cr Aquatic Hydrog Oxidize Preser Recen	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce t Iron Reduction	4A, and 4l es (B13) dor (C1) res along L ed Iron (C4) on in Tilled	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T	Leaves (EA, and 4B) erns (B10) dater Table dible on Ael dosition (D2) ard (D3) Fest (D5)		ery (CS	9)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C I Iron Deposits (Surface Soil C	hinimum of one (A1) Able (A2) B1) Oosits (B2) (B3) rust (B4) (B5) Fracks (B6)			Water- (exception Salt Critical Aquation Aquation Countries Countr	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses	es (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	Leaves (EA, and 4B) erns (B10) dater Table dible on Aer dosition (D2) and (D3) dest (D5) dest (D6)	39) (C2) (C3) (C3) (C4) (C5) (C5)	ery (CS	3)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis	ninimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4) (B5) tracks (B6) ible on Aerial In	nagery (E		Water- (exception Salt Critical Aquation Aquation Countries Countr	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce t Iron Reduction	es (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T	Leaves (EA, and 4B) erns (B10) dater Table dible on Aer dosition (D2) and (D3) dest (D5) dest (D6)	39) (C2) (C3) (C3) (C4) (C5) (C5)	ery (CS	3)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege	ninimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4) (B5) cracks (B6) dible on Aerial In	nagery (E		Water- (exception Salt Critical Aquation Aquation Countries Countr	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses	es (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	Leaves (EA, and 4B) erns (B10) dater Table dible on Aer dosition (D2) and (D3) dest (D5) dest (D6)	39) (C2) (C3) (C3) (C4) (C5) (C5)	ery (CS	9)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Innudation Vis Surface Soil C Inundation Vis Sparsely Vege eld Observations:	ninimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4) (B5) cracks (B6) able on Aerial In	nagery (E		Water- (excep Salt Cr Aquatir Hydrog Oxidize Preser Recen Stunte	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses	es (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	Leaves (EA, and 4B) erns (B10) dater Table dible on Aer dosition (D2) and (D3) dest (D5) dest (D6)	39) (C2) (C3) (C3) (C4) (C5) (C5)	ery (CS	3)	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits (Surface Soil C Inundation Vis Sparsely Vege eld Observations:	minimum of one (A1) able (A2) b) B1) osits (B2) (B3) rrust (B4) (B5) bracks (B6) able on Aerial Inetated Concave ent? Yes	nagery (E Surface		Water- (excep Salt Cr Aquatin Hydrog Oxidize Preser Recen Stunte Other	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Od ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses (Explain in Re	dA, and 4ld as (B13) dor (C1) ares along Led Iron (C4) on in Tilled Plants (D1 emarks)	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	Leaves (EA, and 4B) erns (B10) dater Table dible on Aer dosition (D2) and (D3) dest (D5) dest (D6)	39) (C2) (C3) (C3) (C4) (C5) (C5)	ery (CS	3)	
YDROLOGY Vetland Hydrology Immary Indicators (m. 1) Surface Water High Water Ta Saturation (A3) Water Marks (in 1) Sediment Deposits (in 1) Algal Mat or Control Information Vision Sparsely Vege (in 1) Inface Water Present (in 1) Version State (in 1) Inface Water Present (in 1) Interval Inface (in 1) Inte	minimum of one (A1) able (A2) b) B1) osits (B2) (B3) rrust (B4) (B5) iracks (B6) able on Aerial In etated Concave ent? Yes ? Yes	nagery (E Surface		Water- (excep Salt Cr Aquatin Hydrog Oxidize Preser Recen Stunte Other	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Oc ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses (Explain in Re	dA, and 4l as (B13) dor (C1) ares along L ad Iron (C4) on in Tilled Plants (D1 amarks)	Soils (C6)		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	Leaves (EA, and 4B) A, and 4B) A terns (B10) A ter Table Bostion (D) Ard (D3) Fest (D5) Bounds (D6) Bummocks	39) (C2) (C3) (C3) (C4) (C5) (C5)	ery (CS	No.	
YDROLOGY etland Hydrology imary Indicators (m Surface Water High Water Ta Saturation (A3 Water Marks (i) Sediment Dep Drift Deposits Algal Mat or C I Iron Deposits (i) Surface Soil C I Inundation Vis Sparsely Vege eld Observations: urface Water Present aturation Present? icludes capillary frii	ninimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4) (B5) tracks (B6) tible on Aerial In etated Concave ent? Yes ? Yes nge)	nagery (E Surface d		Water- (excep Salt Cr Aquatin Hydrog Oxidize Preser Recen Stunte Other	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Oc ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses (Explain in Re	dA, and 4ld as (B13) dor (C1) ares along Led Iron (C4) on in Tilled Plants (D1 emarks)	Soils (C6)) (LRR A) Wet		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave H	Leaves (EA, and 4B) A, and 4B) A terns (B10) A ter Table Bostion (D) Ard (D3) Fest (D5) Bounds (D6) Bummocks	agy) (C2) (C2) (C3) (C3) (LRR A	ery (CS		
YDROLOGY Tetland Hydrology Timary Indicators (many Indi	ninimum of one (A1) able (A2) b) B1) osits (B2) (B3) rust (B4) (B5) tracks (B6) tible on Aerial In etated Concave ent? Yes ? Yes nge)	nagery (E Surface d		Water- (excep Salt Cr Aquatin Hydrog Oxidize Preser Recen Stunte Other	ot MLRA 1, 2, rust (B11) c Invertebrate gen Sulfide Oc ed Rhizosphe nce of Reduce t Iron Reducti d or Stresses (Explain in Re	dA, and 4ld as (B13) dor (C1) ares along Led Iron (C4) on in Tilled Plants (D1 emarks)	Soils (C6)) (LRR A) Wet		Water-Stained (MLRA 1, 2, 4. Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave H	Leaves (EA, and 4B) A, and 4B) A terns (B10) A ter Table Bostion (D) Ard (D3) Fest (D5) Bounds (D6) Bummocks	agy) (C2) (C2) (C3) (C3) (LRR A	ery (CS		

Project Site:	Lynnwood Link Extension	<u>n</u>		City/Cour	nty: ML Terrace/Snohor	nish Sampling	Date:	3/27/12	<u>2</u>
Applicant/Owner:	Sound Transit				State: \(\frac{1}{2}\)	WA Sampling	Point:	<u>WMT1-</u>	-SP1
Investigator(s):	M. Maynard, C. Worsley				Section, Townshi	ip, Range: <u>S32, T</u>	727N, R4E		
Landform (hillslope, te	errace, etc.):		Loc	al relief (conc	ave, convex, none): co	onvex	Slope	(%): <u>2</u>	
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	77842833220		Long: <u>-122.3165653</u>	2200	Datum: N	AD83	
Soil Map Unit Name:	<u>Urban Land</u>				N	WI classification:	<u>PFO</u>		
Are climatic / hydrolog	jic conditions on the site ty	pical for this time of	year?	∕es □	No 🗌 (If no, e	xplain in Remarks.	.)		
Are Vegetation	, Soil □, or Hydr	ology \square , signifi	cantly disturbe	d? Are "	Normal Circumstances" p	resent?	Yes	⊠ No	o 🗆
Are Vegetation	, Soil □, or Hydr	ology \square , natura	ally problemation	? (If ne	eded, explain any answer	rs in Remarks.)			
SUMMARY OF FIN	IDINGS – Attach site	map showing sa	mpling poin	t locations,	transects, important	features, etc.			
Hydrophytic Vegetatio	n Present?	Yes 🛭	I No □						
Hydric Soil Present?		Yes 🛭	I No □	Is the Samp			Yes	⊠ No	• 🗆
Wetland Hydrology Pr	esent?	Yes 🛭	No □						
Remarks: The sam	ple plot is located appro	ximately 40 feet so	uthwest of Mo	Aleer Creek	inlet/culvert. It is located	d on the northwe	st side of th	e wetlar	nd,
approxin	nately 10 feet west of Mo	Aleer Creek.							
VEGETATION – U	se scientific names o	•							
Tree Stratum (Plot siz	e: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Work	sheet:			
1. Alnus rubra		<u>40</u>	<u>yes</u>	FAC	Number of Dominant Sp	pecies	_		(4)
2. Betula sp		<u>15</u>	<u>ves</u>	<u>=</u>	That Are OBL, FACW, o		<u>5</u>		(A)
3					Total Number of Domin	ant	7		(D)
4					Species Across All Stra	ta:	<u>7</u>		(B)
50% = <u>27.5</u> , 20% = <u>1</u>	<u>1</u>	<u>55</u>	= Total Cove	er	Percent of Dominant Sp	ecies	71		(A/D)
Sapling/Shrub Stratur	<u>m</u> (Plot size: <u>5M</u>)				That Are OBL, FACW, o	or FAC:	<u>71</u>		(A/B)
Rubus spectabilis		<u>25</u>	<u>yes</u>	FAC	Prevalence Index work	ksheet:			
2					Total % Co	over of:	Multiply	by:	
3					OBL species		x1 =		
4					FACW species		x2 =		
5		-			FAC species		x3 =		
50% = <u>12.5</u> , 20% = <u>5</u>		<u>25</u>	= Total Cove	er	FACU species		x4 =		
Herb Stratum (Plot siz	ze: <u>2M</u>)				UPL species		x5 =		
Equisetum telmate	<u>eia</u>	<u>75</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	(A)			(B)
2. Athyrium filix-femi	<u>ina</u>	<u>35</u>	<u>ves</u>	<u>FAC</u>	Prev	ralence Index = B/A	A =		
3. Ranunculus reper	<u>าร</u>	<u>35</u>	<u>yes</u>	<u>FACW</u>	Hydrophytic Vegetation	on Indicators:			
4. Polystichum muni	<u>tum</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	☐ 1 – Rapid Test for	Hydrophytic Vege	etation		
5		-			2 - Dominance Te	est is >50%			
6		-			3 - Prevalence Inc	dex is <u><</u> 3.0¹			
7						Adaptations ¹ (Pro		ng	
8		-			data in Reman	ks or on a separate	e sheet)		
9		-			5 - Wetland Non-\	/ascular Plants			
10		•			☐ Problematic Hydro	ophytic Vegetation	¹ (Explain)		
11					¹ Indicators of hydric soil	l and wetland hydr	ology must		
50% = <u>77.5,</u> 20% = <u>3</u>	-	<u>155</u>	= Total Cove	er	be present, unless distu				
Woody Vine Stratum	· —								
1. <u>Rubus armeniacu</u>	<u>S</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic				
2		•			Vegetation	Yes	\boxtimes	No	
50% = 7.5, 20% = 3		<u>15</u>	= Total Cove	er	Present?				
% Bare Ground in He	rb Stratum								
Remarks:	The 1988 Region 9 Nation	al Wetland Plant Lis	t and 1993 Sup	plement were	e used for this delineation.				

SOIL Sampling Point: WMT1-SP1 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features Texture (inches) Color (moist) % Color (moist) % Type¹ Loc² Remarks 10YR 3/2 100 Silt Loam <u>0-5</u> Ξ _ <u>5-9</u> 10YR 4/1 80 10YR 4/6 20 <u>C</u> Μ Gr Sa Loam 9-18 10Y 4/1 60 10YR 4/6 <u>40</u> <u>C</u> v. Sa Loam ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) \boxtimes Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): **Hydric Soils Present?** Yes \boxtimes No Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) П Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): \boxtimes Water Table Present? Yes No Depth (inches): 13 Saturation Present? \boxtimes Wetland Hydrology Present? Yes \boxtimes No Yes No Depth (inches): surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Project Site:	Lynnwood Link Extension			City/Coun	ty: ML Terrace/Snohomish Sampling D	ate: <u>3/</u>	<u>/27/12</u>	
Applicant/Owner:	Sound Transit				State: WA Sampling Po	oint: <u>W</u>	/MT1-SP2	
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Range: <u>\$32, T2</u>	<u>7N, R4E</u>		
Landform (hillslope, te	errace, etc.): <u>hillslope</u>		Loca	I relief (conca	ave, convex, none): <u>convex</u>	Slope (%	,): <u>18</u>	
Subregion (LRR):	<u>A</u>	Lat: <u>47.7</u>	7849900740		Long: <u>-122.31659300400</u>	Datum: NAD	<u>)83</u>	
Soil Map Unit Name:	<u>Urban Land</u>				NWI classification:	<u>Upland</u>		
Are climatic / hydrolog	ic conditions on the site typical for	this time of y	year? Ye	es 🗆	No			
Are Vegetation □,	, Soil □, or Hydrology	_	antly disturbed		Normal Circumstances" present?	Yes 🛚	No 🗆	
Are Vegetation □,	, Soil □, or Hydrology	□, natural	ly problematic?	' (If ne	eded, explain any answers in Remarks.)			
	·			locations,	transects, important features, etc.			_
Hydrophytic Vegetatio	n Present?	Yes □		Is the Samp	oled Area	v	. N. 57	
Hydric Soil Present?		Yes ⊠	NO L	within a We		Yes □	No ⊠	
Wetland Hydrology Pro	esent?	Yes 🗆	No 🛛					4
Remarks: The samp	ple plot is located approximately	/ 40 feet wes	st of McAleer (Creek inlet/c	culvert, on the slope northwest of the wetla	ınd.		
VECETATION		_						_
	se scientific names of plants	Absolute	Dominant	Indicator	Daminana Tari Wadahari			\neg
Tree Stratum (Plot siz	.e: <u>10M</u>)	% Cover	Species?	<u>Status</u>	Dominance Test Worksheet:			
1. <u>Alnus rubra</u>		<u>55</u>	<u>ves</u>	<u>FAC</u>	Number of Dominant Species	<u>1</u>	(A)	
Pseudotsuga men -	<u>ızeisii</u>	<u>8</u>	<u>no</u>	<u>FACU</u>	That Are OBL, FACW, or FAC:			
3					Total Number of Dominant Species Across All Strata:	<u>2</u>	(B)	
4					Species Across All Strata.			
50% = <u>31.5</u> , 20% = <u>12</u>		<u>63</u>	= Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u>	(A/B))
Sapling/Shrub Stratun	<u>n</u> (Plot size: <u>5M</u>)							_
1					Prevalence Index worksheet:	Marildin Irola		
2					Total % Cover of:	Multiply by	<u>r:</u>	
3					OBL species	x1 = x2 =		
4 5					FACW species FAC species	x2 = x3 =		
			= Total Cover					
50% =, 20% =			= 10tal Cover		FACU species	x4 =		
Herb Stratum (Plot siz		_		E4011	UPL species	x5 =		
Polystichum muni	<u>tum</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	Column Totals:(A)	_	(B)	
2					Prevalence Index = B/A =	<u>- — </u>		_
3					Hydrophytic Vegetation Indicators:			
4					1 – Rapid Test for Hydrophytic Vegeta	ation		
5					2 - Dominance Test is >50%			
6					☐ 3 - Prevalence Index is ≤3.0 ¹			
7					4 - Morphological Adaptations ¹ (Provided that a in Remarks or on a separate s	de supporting		
8						<i>,</i> 1100t/		
9					5 - Wetland Non-Vascular Plants			
10					Problematic Hydrophytic Vegetation ¹ ((Explain)		
11					¹ Indicators of hydric soil and wetland hydrol	oav must		
50% =, 20% =	<u> </u>	<u>5</u>	= Total Cover		be present, unless disturbed or problematic			
Woody Vine Stratum (· —	00		FACIL				\dashv
Rubus armeniacus	<u>S</u>	<u>80</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic			
2					Vegetation Yes] N	lo 🛛	
50% = <u>40</u> , 20% = <u>16</u>		<u>80</u>	= Total Cover		Present?			
% Bare Ground in Her								\Box
	Moss covers approximately 40% of nal Wetland Plant List and 1993 S				s absolute coverage were not considered don	ninant. The 1	988 Region	
o mano	olana i lant Elot ana 1000 o	-pp.o.non W	2.5 GOOG TOT UIT					

Depth	Matrix	(Redox Fea	tures							
nches)	Color (moist)	%	,	Color (m	oist)	%	Type ¹	Loc ²	Texture		F	Remarks	5	
<u>0-9</u>	10YR 3/2	<u>10</u>	0						Gr Sa Loam					
<u>9-18</u>	2.5Y 5/2	<u>70</u>	<u> </u>	7.5YR 4	<u>/6</u>	<u>30</u>	<u>C</u>	<u>M</u>	Gr Sa Loam	Mostly sa	<u>nd</u>			
					. <u>-</u>									
		-			-									
		-												
		-		-	· -									
vne: C- Cor	ncentration, D=De	nletion	— RM−R≏	duced Mat	rix CS=Co	wered or Co	ated Sand	Grains ² I o	cation: PL=Por	e Lining M-I	Matrix			
	ndicators: (Applic	•					alca Garia	Oranio. Ec		rs for Proble		lvdric S	oils³:	
] Histosol						edox (S5)			_	cm Muck (A		,		
_	pipedon (A2)				=	Matrix (S6)			_	Red Parent Ma	-	F2)		
_	istic (A3)							cept MLRA 1)	□ ∨	ery Shallow I	Dark Sur	face (TF	- 12)	
] Hydroge	en Sulfide (A4)				Loamy G	leyed Matri	ix (F2)			Other (Explain	n in Rema	arks)		
Deplete	d Below Dark Sur	face (A1	1)	\boxtimes	Depleted	Matrix (F3))							
Thick D	ark Surface (A12)				Redox D	ark Surface	e (F6)							
Sandy M	Mucky Mineral (S1)			Depleted	Dark Surfa	ace (F7)			ors of hydroph nd hydrology				
] Sandy (Gleyed Matrix (S4))			Redox D	epressions	(F8)			s disturbed o			ι,	
estrictive La	ayer (if present):													
ype:														
epth (inches):							Hydric Soils P	resent?		Yes	\boxtimes	No	
Remarks:	,													
Remarks:														
IYDROLOG		3:												
IYDROLOO Vetland Hydi rimary Indica	BY.		uired; ch							y Indicators (:			ed)	
IYDROLOG Vetland Hydi rimary Indica	SY rology Indicators		uired; ch	neck all tha	Water-St	ained Leav	` ,		☐ Wate	er-Stained Le	eaves (B	9)	ed)	
IYDROLOG Vetland Hydi rrimary Indica Surface High W	GY rology Indicators ators (minimum of a Water (A1) ater Table (A2)		uired; ch		Water-St	MLRA 1, 2,	` ,		☐ Wate	er-Stained Le	eaves (Bs	9)	ed)	
YDROLOG /etland Hydi rimary Indica Surface High W Saturat	GY rology Indicators ators (minimum of Water (A1) ater Table (A2) ion (A3)		uired; ct		Water-St (except Salt Crus	MLRA 1, 2, st (B11)	4A, and 4		☐ Wate (ML)	er-Stained Le RA 1, 2, 4A, nage Pattern	eaves (B9 and 4B) as (B10)	9)	ed)	
YDROLOG /etland Hydr rimary Indica Surface High W Saturat Water I	rology Indicators ators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1)		uired; cl		Water-Si (except Salt Crus Aquatic I	MLRA 1, 2, st (B11) nvertebrate	4A , and 4 es (B13)		☐ Wate (ML) ☐ Drai	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate	eaves (B9 and 4B) is (B10) er Table	9) (C2)	,	
YDROLOG /etland Hydi rimary Indica Surface High W Saturat Water !	rology Indicators ators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		uired; cł		Water-St (except Salt Crus Aquatic I Hydroger	MLRA 1, 2, st (B11) nvertebrate n Sulfide Od	4A , and 4 as (B13) dor (C1)	В)	□ Wate (ML) □ Drai □ Dry- □ Satu	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate iration Visible	eaves (B9 and 4B) as (B10) er Table e on Aeria	(C2)	,	
IYDROLOG /etland Hydi rimary Indica Surface High W Saturat Water I Sedime Drift De	rology Indicators ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) aposits (B3)		uired; cł		Water-St (except Salt Crus Aquatic I Hydroger Oxidized	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe	4A, and 4 s (B13) dor (C1) res along L	B)	Wate (ML) Drai Dry- Satu Geo	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate iration Visible morphic Posi	eaves (BS and 4B) as (B10) er Table e on Aeria ition (D2)	(C2)	,	
IYDROLOG Vetland Hydi rimary Indica Surface High W Saturat Water I Sedime Drift De	rology Indicators ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) aposits (B3) lat or Crust (B4)		uired; cł		Water-Si (except Salt Crus Aquatic I Hydrogei Oxidized Presence	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4)	B) Living Roots (C3)		er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate iration Visible morphic Posi	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3)	(C2)	,	
HYDROLOG Vetland Hydi rimary Indica Surface High W Saturat Water I Sedime Drift De Algal M	rology Indicators ators (minimum of a Water (A1) fater Table (A2) fion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5)	one requ	uired; cl		Water-Si (except Salt Crus Aquatic I Hydrogei Oxidized Presence Recent I	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce ron Reducti	4A, and 4 as (B13) dor (C1) res along L ad Iron (C4) on in Tilled	B) Living Roots (C3)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate uration Visible morphic Posi llow Aquitard 5-Neutral Tes	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) tt (D5)	(C2) al Image	ery (C9)	
IYDROLOG Vetland Hydrimary Indica Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface	rology Indicators ators (minimum of wWater (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) e Soil Cracks (B6)	one req			Water-St (except Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce ron Reducti or Stresses	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	B) Living Roots (C3)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate aration Visible morphic Posi flow Aquitard c-Neutral Tes sed Ant Moun	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image	ery (C9)	
IYDROLOG Vetland Hydi rimary Indica Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface	rology Indicators ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ant Deposits (B2) aposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aer	one requ	ery (B7)		Water-St (except Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce ron Reducti	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	B) Living Roots (C3)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate uration Visible morphic Posi llow Aquitard 5-Neutral Tes	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image	ery (C9)	
NYDROLOG Wetland Hydi rimary Indica Surface High W Saturat Water I Sedime Drift De Algal M Iron De Surface	rology Indicators ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) aposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aer ly Vegetated Cond	one requ	ery (B7)		Water-St (except Salt Crus Aquatic I Hydroger Oxidized Presence Recent In Stunted	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce ron Reducti or Stresses	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	B) Living Roots (C3)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate aration Visible morphic Posi flow Aquitard c-Neutral Tes sed Ant Moun	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image	ery (C9)	
YDROLOG Vetland Hydi rimary Indica Surface High W Saturat Sedime Sedime Algal M Iron De Surface Inundat Sparsel	rology Indicators ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aer	one required in the second sec	ery (B7)		Water-St (except Salt Crus Aquatic I Hydrogei Oxidized Presence Recent Ii Stunted of Other (E	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce ron Reducti or Stresses	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	B) Living Roots (C3)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate aration Visible morphic Posi flow Aquitard c-Neutral Tes sed Ant Moun	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image	ery (C9)	
IYDROLOG /etland Hydi rimary Indica Surface High W Saturat Sedime Drift De Algal M Iron De Surface Inundat Sparse ield Observa	rology Indicators ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) and Deposits (B2) aposits (B3) lat or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aerly Vegetated Concations:	one required in the requirement of the requirement	ery (B7)		Water-St (except Salt Crus Aquatic I Hydrogei Oxidized Presence Recent Ii Stunted of Other (E	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce ron Reducti or Stresses xplain in Re	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	B) Living Roots (C3)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate aration Visible morphic Posi flow Aquitard c-Neutral Tes sed Ant Moun	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image	ery (C9)	
HYDROLOG Vetland Hydi Primary Indica Surface High W Saturat Sedime Drift De Surface Inundat Sparse Field Observate Surface Water Table Footbattration Pre-	rology Indicators ators (minimum of a Water (A1) fater Table (A2) from (A3) Marks (B1) for Deposits (B2) fator Crust (B4) from Visible on Aerity Vegetated Concations: r Present?	one required in the second sec	ery (B7)		Water-Si (except Salt Crus Aquatic I Hydrogei Oxidized Presence Recent Ii Stunted of Other (E	MLRA 1, 2, st (B11) nvertebrate n Sulfide Oo Rhizosphe e of Reduce on Reducti or Stresses xxplain in Re	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1	B) Living Roots (C3) Soils (C6) (LRR A)	Wate (ML Drai Dry- Satu Geo Shal	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate uration Visible morphic Posi Illow Aquitard -Neutral Tes sed Ant Moun st-Heave Hum	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image	ery (C9)	0
HYDROLOG Vetland Hydi Primary Indica Surface High W Saturat Sedime Drift De Surface Inundat Sparse Jurface Water Vater Table Featuration Prencludes capi	rology Indicators ators (minimum of a Water (A1) fater Table (A2) from (A3) Marks (B1) for Deposits (B2) fator Crust (B4) from Visible on Aerity Vegetated Concations: r Present?	one requirial Image cave Sur Yes Yes	ery (B7) rface (B		Water-St (except Salt Crus Aquatic I Hydrogei Oxidized Presence Recent Ii Stunted o Other (E	MLRA 1, 2, st (B11) nvertebrate in Sulfide Or Rhizosphe e of Reduceron Reduction Stresses explain in Research (inches): th (inches):	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1 emarks)	B) Living Roots (C3) Soils (C6) (LRR A)	□ Wate (ML) □ Drai □ Dry- □ Satu □ Geo □ Shal □ FAC □ Rais	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate uration Visible morphic Posi Illow Aquitard -Neutral Tes sed Ant Moun st-Heave Hum	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image) (LRR A)	ery (C9)	0
HYDROLOG Vetland Hydi Primary Indica Surface High W Saturat Water I Sedime Inon De Inundat Sparsei Gurface Water Vater Table F Saturation Preincludes capi	rology Indicators ators (minimum of a Water (A1) fater Table (A2) from (A3) Marks (B1) for Deposits (B2) fater or Crust (B4) from Visible on Aerity Vegetated Concations: r Present? persont? present? present? present? present? present? present? present? present?	one requirial Image cave Sur Yes Yes	ery (B7) rface (B		Water-St (except Salt Crus Aquatic I Hydrogei Oxidized Presence Recent Ii Stunted o Other (E	MLRA 1, 2, st (B11) nvertebrate in Sulfide Or Rhizosphe e of Reduceron Reduction Stresses explain in Research (inches): th (inches):	4A, and 4 s (B13) dor (C1) res along L ed Iron (C4) on in Tilled Plants (D1 emarks)	B) Living Roots (C3) Soils (C6) (LRR A)	Wate (ML) Drai Dry- Satu Geo Shal FAC Rais	er-Stained Le RA 1, 2, 4A, nage Pattern Season Wate uration Visible morphic Posi Illow Aquitard -Neutral Tes sed Ant Moun st-Heave Hum	eaves (B9 and 4B) as (B10) er Table e on Aeria ition (D2) (D3) at (D5) ads (D6) ((C2) al Image) (LRR A)	ery (C9)	io

Project Site:	Lynnwood Link Extension			City/Cour	nty: ML Terrace/Snohomish	Sampling Date:	3/27/12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WMT2-SP1	<u>'1</u>
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Rar	nge: <u>\$32, T27N, R4E</u>		
Landform (hillslope, te	errace, etc.): <u>mid slope</u>		Loca	al relief (conc	eave, convex, none): none	Slop	oe (%): <u>50</u>	
Subregion (LRR):	<u>A</u>	Lat: <u>47.7</u>	7953531010		Long: <u>-122.31607243300</u>	Datum:	NAD83	
Soil Map Unit Name:	<u>Urban Land</u>				NWI cla	ssification: PFO		
Are climatic / hydrolog	ic conditions on the site typical fo	r this time of	year? Y	es 🗆	No 🗌 (If no, explain	in Remarks.)		
Are Vegetation ☐,	, Soil □, or Hydrology	☐, signific	cantly disturbed	d? Are "	'Normal Circumstances" present	t? Yes	⊠ No	
Are Vegetation ☐,	, Soil □, or Hydrology	☐, natura	lly problematic	? (If ne	eeded, explain any answers in R	emarks.)		
CUMAN A DV OF FIN	IDINOC Attack site men e							
	IDINGS – Attach site map sl	Yes 🗵		locations,	transects, important feati	ires, etc.		
Hydrophytic Vegetatio	n Present?			Is the Samp	oled Area	Yes	⊠ No	
Hydric Soil Present?	onont?	Yes ⊠ Yes ⊠		within a We	tland?	res	⊠ No	
Wetland Hydrology Pro								
Remarks: The samp	ple plot is located on the slope	east of McA	leer Creek, ap	proximately	40 feet from the stream and 3	0 feet west of the righ	nt-of-way fend	ice.
VEGETATION - III	se scientific names of plant	e						
Tree Stratum (Plot siz		Absolute	Dominant	Indicator	Dominance Test Worksheet	•		
	•	% Cover	Species?	Status 540				
Populus balsamife Nov aguifolium	<u>#a</u>	<u>40</u>	<u>yes</u>	FAC	Number of Dominant Species That Are OBL, FACW, or FAC	7	((A)
Ilex aquifolium 3		<u>5</u>	<u>no</u>	NL (UPL)		,		
4.					Total Number of Dominant Species Across All Strata:	<u>4</u>	((B)
50% = <u>22.5</u> , 20% = <u>9</u>		<u>45</u>	= Total Cove		Develop of Deminant Charles			
Sapling/Shrub Stratun	n (Plot size: 5M)	<u>10</u>	= 10tai 0010	•	Percent of Dominant Species That Are OBL, FACW, or FAC		((A/B)
1	<u>- (</u>				Prevalence Index workshee	 t:		
2					Total % Cover of		oly by:	
3					OBL species	x1 =	<u> </u>	
4.					FACW species 90	x2 =	180	
5.					FAC species 40	x3 =	120	
50% =, 20% =			= Total Cove	r	FACU species 80	x4 =	<u>320</u>	
Herb Stratum (Plot siz	ze: 2M)				UPL species <u>5</u>	x5 =	<u>25</u>	
1. Equisetum hymale		90	<u>yes</u>	FACW	Column Totals: 215 (A	A)	645 (B)	
2. Rubus ursinus	<u>-</u>	<u>70</u>	<u>yes</u>	FACU		ce Index = B/A = <u>3.0</u>	<u> </u>	
3		<u></u>	<u>,100</u>	<u>. , , , o o</u>	Hydrophytic Vegetation Ind			
4.					☐ 1 – Rapid Test for Hydro			
5					2 - Dominance Test is >	-		
6					☐ 3 - Prevalence Index is			
7.					o i rovalerico iridox io	-		
8.					4 - Morphological Adapt data in Remarks or o	ations (Provide suppo on a separate sheet)	rting	
9.					5 - Wetland Non-Vascul	ar Plants ¹		
10.					□ Problematic Hydrophytic			
11					- Floblematic Hydrophytic	, vegetation (Explain)		
50% = <u>80</u> , 20% = <u>32</u>		<u>160</u>	= Total Cove	 r	¹ Indicators of hydric soil and v		t	
Woody Vine Stratum ((Plot size: 5M)	100	. o.a. ooro		be present, unless disturbed of	or problematic.		
Rubus armeniacus	· —	<u>10</u>	<u>yes</u>	FACU				
2.	±	<u></u>	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	<u></u>	Hydrophytic			
50% = <u>5</u> , 20% = <u>2</u>		<u>10</u>	= Total Cove		"	Yes ⊠	No	
% Bare Ground in Her	rh Stratum	<u></u>	. o.a. ooro		Present?			
-	Species with 5% or less absolute of	covorago wor	o not consider	nd dominant	The 1099 Pegion 9 National M	/otland Plant List and 1	1003 Supplom	ont
	sed for this delineation.	coverage wer	e not considere	eu dominant.	The 1900 Region 9 National W	reliand Flant List and 1	993 Suppleme	ent
l								

SOIL							or or con	firm the above								
rofile Descript	ion: (Describe t	o the dep	th neede	ed to d	locument th	e indicato		iiiiii tiie abse	nce of indi	ators.)						
Depth	Matrix				R	edox Feat	ures									
(inches)	Color (moist)	%	Co	lor (m	oist)	%	Type ¹	Loc ²	Text	ıre			Rema	rks		
<u>0-6</u>	10YR 3/2	<u>100</u>			_				<u>Sa I</u>	<u>oam</u>						
<u>6-12</u>	2.5Y 4/2		<u>10</u>	0YR 5/	<u></u>		<u>C</u>	<u>M</u>	<u>Gr Sa</u>	Loam						
<u>12+</u>					_						Extrem	ely comp	acted s	<u>oil</u>		
					_					_						
					_				_							
					_					_						
					_	—			_	_						
					_				2							
*	entration, D=Dep						ated San	d Grains.	² Location: I				I leaded		3.	
_	cators: (Applica	ible to all	LKKS, U	_		-				_		blematic	Hyaric	501	IIS :	
Histosol (A	•				Sandy Red					_	cm Muck		(TEO)			
Histic Epip					Stripped M			waant MI DA) [Material		/T [4	2)	
Black Histi					-	-		xcept MLRA1	, L	_	•	w Dark S		(IFI	2)	
	Sulfide (A4)	00 (411)			Loamy Gle	-				1 0	nei (Expi	ain in Rer	narks)			
	Selow Dark Surfa	ce (ATT)			Depleted I											
_	Surface (A12)					rk Surface			³ I	ndicator	s of hydro	phytic ve	getatio	n an	d	
	cky Mineral (S1) yed Matrix (S4)				-	Dark Surfad pressions (wetlan	d hydrolo	gy must b	oe pres	ent,	_	
estrictive Laye					Redux De	7162210112 ((1 0)			unless	disturbe	d or probl	ematic.			
ype:	Very compact	eline hat														
epth (inches):	at 12 inches b		ourfooo					Hydric Soil	e Procont?			Yes	\boxtimes		No	
emarks: Re	strictive layer/ex	tremely co	ompated a	at 12 ir	nches.			-								
Remarks: Re		tremely co	ompated a	at 12 ir	nches.											
HYDROLOGY		tremely co	ompated a	at 12 ir	nches.											
HYDROLOGY Vetland Hydrolo									See	condary	Indicators	s (2 or mo	ore requ	uired)	
HYDROLOGY Vetland Hydrolo Primary Indicator	ogy Indicators: 's (minimum of o				t apply)	ined Leave	es (B9)		Sec			s (2 or mo		uired))	
HYDROLOGY Vetland Hydrolov Primary Indicator	ogy Indicators: 's (minimum of o			all tha	t apply) Water-Sta	ined Leave LRA 1, 2, 4	` '	4B)		Wate	r-Stained	•	B9)	uired))	
HYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate	ogy Indicators: rs (minimum of o			all tha	t apply) Water-Sta	LRA 1, 2,	` '	4B)		Wate	r-Stained A 1, 2, 4	Leaves (B9) 3)	uired))	
IYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation	ogy Indicators: rs (minimum of o fater (A1) er Table (A2) (A3)			all tha	t apply) Water-Sta (except M Salt Crust	LRA 1, 2,	4A, and	4B)		Wate (MLR Drain	r-Stained RA 1, 2, 4	Leaves (B9) 3)	uired))	
IYDROLOGY Vetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar	ogy Indicators: rs (minimum of o fater (A1) er Table (A2) (A3)			all tha	t apply) Water-Sta (except M Salt Crust Aquatic In	LRA 1, 2, (B11)	4A , and s (B13)	4B)		Wate (MLR Drain	r-Stained A 1, 2, 4 age Patte Season W	Leaves (A, and 4E erns (B10)	B9) (C2)		,	
HYDROLOGY Wetland Hydrolo rimary Indicator Surface W High Wate Saturation Water Mar Sediment	ogy Indicators: Ts (minimum of o later (A1) Table (A2) (A3) Tks (B1) Deposits (B2)			all tha	t apply) Water-Sta (except M Salt Crust Aquatic In Hydrogen	LRA 1, 2, 4 (B11) vertebrates Sulfide Od	4A , and s (B13) dor (C1)	4B) Living Roots (Wate (MLR Drain Dry-S Satur	r-Stained AA 1, 2, 4, age Patte Season W ation Visi	Leaves (A, and 4E erns (B10) ater Tabl	B9) (B) (C2) (rial Image)		,	
HYDROLOGY Wetland Hydrolo Irrimary Indicator Surface W High Wate Saturation Water Mar Sediment Drift Depo	ogy Indicators: Ts (minimum of o later (A1) Table (A2) (A3) Tks (B1) Deposits (B2)			all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F	LRA 1, 2, 4 (B11) vertebrates Sulfide Od	4A, and s (B13) dor (C1) res along	Living Roots (Wate (MLR Drain Dry-S Satur Geon	r-Stained AA 1, 2, 4, age Patte Season W ation Visi	Leaves (A, and 4E erns (B10) ater Tabl ble on Ae osition (D	B9) (B) (C2) (rial Image)		,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Wate Saturation Water Mar Sediment Drift Depos	ogy Indicators: rs (minimum of o fater (A1) ra Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)			all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F Presence	LRA 1, 2, 4 (B11) vertebrates Sulfide Od Rhizospher of Reduced	4A, and s (B13) dor (C1) res along d Iron (C	Living Roots (C3)	Wate (MLR Drain Dry-S Satur Geon	r-Stained AA1, 2, 4, age Patte Season W ation Visi	Leaves (A, and 4E erns (B10) ater Tabl ble on Ae osition (D ard (D3)	B9) (B) (C2) (rial Image)		,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Wate Saturation Water Mar Sediment Drift Depo	ogy Indicators: rs (minimum of or later (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	ne require	ed; check	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro	LRA 1, 2, 4 (B11) vertebrates Sulfide Od Rhizospher of Reduced in Reduction	4A, and s (B13) dor (C1) res along d Iron (C- on in Tille	Living Roots (C3)	Water (MLR Drain Dry-S Satur Geon Shall	r-Stained RA 1, 2, 4, age Patte Season W ation Visi norphic P ow Aquita Neutral T	Leaves (A, and 4E erns (B10) ater Tabl ble on Ae osition (D ard (D3)	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (e) (d) (e) (e) (f) (e) (f) (f) (f) (f) (f) (f) (f) (f) (f) (f	agery	,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depor	ogy Indicators: 'as (minimum of o later (A1) Par Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) bil Cracks (B6) I Visible on Aeria	ne require	ed; check	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro	LRA 1, 2, 4 (B11) vertebrates Sulfide Od Rhizospher of Reduced in Reduction	4A, and s (B13) dor (C1) res along d Iron (Coon in Tille Plants (D	Living Roots (4) ed Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise	r-Stained RA 1, 2, 4, age Patte Season Williamorphic Pow Aquita Neutral Ted Ant Modern	Leaves (A, and 4E erns (B10) rater Tabl ble on Ae osition (D ard (D3) rest (D5)	B9) (C2) (C2) (C3) (LRR	agery	,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depos Iron Depos Surface Sc Inundation Sparsely V	ogy Indicators: rs (minimum of o fater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aeria /egetated Conca	ne require	ed; check	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or	LRA 1, 2, 4 (B11) vertebrates Sulfide Od Rhizospher of Reduced in Reduction	4A, and s (B13) dor (C1) res along d Iron (Coon in Tille Plants (D	Living Roots (4) ed Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise	r-Stained RA 1, 2, 4, age Patte Season Williamorphic Pow Aquita Neutral Ted Ant Modern	Leaves (A, and 4E erns (B10) fater Table ble on Ae osition (D ard (D3) fest (D5) ounds (D6)	B9) (C2) (C2) (C3) (LRR	agery	,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depos Hron Depos Surface So Inundation Sparsely W	ogy Indicators: rs (minimum of o fater (A1) rr Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) r Visible on Aeria fegetated Conca	ne require	ed; check	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	LRA 1, 2, 4 (B11) wertebrates Sulfide Od Rhizospher of Reduced in Reduction Stresses I plain in Rer	4A, and s (B13) dor (C1) res along d Iron (Coon in Tille Plants (D	Living Roots (4) ed Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise	r-Stained RA 1, 2, 4, age Patte Season Williamorphic Pow Aquita Neutral Ted Ant Modern	Leaves (A, and 4E erns (B10) fater Table ble on Ae osition (D ard (D3) fest (D5) ounds (D6)	B9) (C2) (C2) (C3) (LRR	agery	,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depos Iron Depos Inundation Sparsely W Surface Water Primary	ogy Indicators: rs (minimum of or later (A1) rater (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria legetated Conca	ne require	(B7) No	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	LRA 1, 2, 4 (B11) vertebrates Sulfide Od Rhizospheri of Reduced in Reductio Stresses I blain in Rer (inches):	4A, and s (B13) dor (C1) res along d Iron (Con in Tille Plants (D marks)	Living Roots (4) ed Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise	r-Stained RA 1, 2, 4, age Patte Season Williamorphic Pow Aquita Neutral Ted Ant Modern	Leaves (A, and 4E erns (B10) fater Table ble on Ae osition (D ard (D3) fest (D5) ounds (D6)	B9) (C2) (C2) (C3) (LRR	agery	,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment In Drift Depos Iron Depos Inundation Sparsely V Field Observation Gurface Water Pressure August Pressure P	ogy Indicators: rs (minimum of or rater (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) visible on Aeria /egetated Conca	ne require	ed; check	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In: Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	LRA 1, 2, 4 (B11) wertebrates Sulfide Od Rhizospher of Reduced in Reduction Stresses I plain in Rer	4A, and s (B13) dor (C1) res along d Iron (Coon in Tille Plants (D	Living Roots (4) ed Soils (C6)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise	r-Stained RA 1, 2, 4, age Patte Season Williamorphic Pow Aquita Neutral Ted Ant Modern	Leaves (A, and 4E erns (B10) fater Table ble on Ae osition (D ard (D3) fest (D5) ounds (D6)	B9) (C2) (C2) (C3) (LRR	agery	,	
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depoi Iron Depoi Inundation Sparsely W Field Observation Gurface Water Presented Seturation Presented	ogy Indicators: rs (minimum of or rater (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria /egetated Conca ons: resent? ye sent? ye y fringe)	ne require	(B7) No No	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	LRA 1, 2, (B11) vertebrates Sulfide Od Rhizospher of Reduced In Reduction Stresses I Iolain in Rer (inches): (inches):	4A, and s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks) 10 0-12	Living Roots (4) ed Soils (C6) on) (LRR A)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	r-Stained A 1, 2, 4. age Patte Season W ation Visi norphic P ow Aquita Neutral T ed Ant Mo -Heave H	Leaves (A, and 4E erns (B10) dater Tabl ble on Ae osition (D ard (D3) dest (D5) dest (D5) dest (D6)	B9) (C2) (C2) (C3) (LRR	A)	,	• [
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment Drift Depoi Iron Depoi Inundation Sparsely W Field Observation Gurface Water Presented Seturation Presented	ogy Indicators: rs (minimum of or later (A1) rater (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria legetated Concar ons: resent? you	ne require	(B7) No No	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	LRA 1, 2, (B11) vertebrates Sulfide Od Rhizospher of Reduced In Reduction Stresses I Iolain in Rer (inches): (inches):	4A, and s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks) 10 0-12	Living Roots (4) ed Soils (C6) on) (LRR A)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	r-Stained A 1, 2, 4. age Patte Season W ation Visi norphic P ow Aquita Neutral T ed Ant Mo -Heave H	Leaves (A, and 4E erns (B10) dater Tabl ble on Ae osition (D ard (D3) dest (D5) dest (D5) dest (D6)	B9) (C2) (C2) (C3) (C3) (C4) (C4) (C4) (C4) (C4) (C4) (C4)	A)	y (C9)	0 [
HYDROLOGY Vetland Hydrolo Primary Indicator Surface W High Water Saturation Water Mar Sediment In Drift Depoi Inon Depoi Inundation Sparsely W Tield Observation Surface Water Provided Water Table Presence Includes capillar	ogy Indicators: rs (minimum of or rater (A1) re Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Visible on Aeria /egetated Conca ons: resent? ye sent? ye y fringe)	ne require	(B7) No No	all tha	t apply) Water-Sta (except M Salt Crust Aquatic In Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	LRA 1, 2, (B11) vertebrates Sulfide Od Rhizospher of Reduced In Reduction Stresses I Iolain in Rer (inches): (inches):	4A, and s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks) 10 0-12	Living Roots (4) ed Soils (C6) on) (LRR A)	C3)	Wate (MLR Drain Dry-S Satur Geon Shall FAC- Raise Frost	r-Stained A 1, 2, 4. age Patte Season W ation Visi norphic P ow Aquita Neutral T ed Ant Mo -Heave H	Leaves (A, and 4E erns (B10) dater Tabl ble on Ae osition (D ard (D3) dest (D5) dest (D5) dest (D6)	B9) (C2) (C2) (C3) (C3) (C4) (C4) (C4) (C4) (C4) (C4) (C4)	A)	y (C9)	o [

Project Site: <u>Lynnwood Link Extension</u>			City/Cour	nty: ML Terrace/Snohomish	Sampling Date:	3/27/12	
Applicant/Owner: Sound Transit				State: WA	Sampling Point:	WMT2-SP	22
Investigator(s): M. Maynard, C. Worsley				Section, Township, Ra	ange: <u>\$32, T27N, R4</u>	<u> </u>	
Landform (hillslope, terrace, etc.): <u>flat bench</u>		Loc	al relief (conc	ave, convex, none): none	Sle	ope (%): <u>0</u>	
Subregion (LRR): <u>A</u>	Lat: <u>47.</u>	77955318300		Long: <u>-122.31597964400</u>	Datum	: <u>NAD83</u>	
Soil Map Unit Name: <u>Urban Land</u>				NWI cl	assification: <u>Uplar</u>	<u>nd</u>	
Are climatic / hydrologic conditions on the site typic	al for this time of	year?	∕es □	No	n in Remarks.)		
Are Vegetation \square , Soil \square , or Hydrolog		icantly disturbe		Normal Circumstances" prese	nt? Yes	s 🛭 No	
Are Vegetation □, Soil □, or Hydrolog	y □, natura	ally problemation	? (If ne	eded, explain any answers in	Remarks.)		
SUMMARY OF FINDINGS – Attach site ma	p showing sa	mpling poin	t locations,	transects, important fea	tures, etc.		
Hydrophytic Vegetation Present?	Yes [□ No 🏻					
Hydric Soil Present?	Yes [□ No 🖾	Is the Samp		Yes	s 🗌 No	\boxtimes
Wetland Hydrology Present?	Yes [□ No 🖾		, and the second			
Remarks: The sample plot is located east of th	e wetland on a	flat bench, ap	proximately	5 feet southwest of the right-	of-way fence.		-
			,	Ū	·		
VEGETATION - Use scientific names of pl				T			
Tree Stratum (Plot size: 10M)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Workshee	et:		
1. Pseudotsuga menzeisii	<u>65</u>	<u>ves</u>	FACU	Number of Dominant Specie	s .		(4)
2. Prunus emerginata	<u>10</u>	<u>no</u>	<u>FACU</u>	That Are OBL, FACW, or FA			(A)
3. <u>Alnus rubra</u>	<u>40</u>	<u>yes</u>	FAC	Total Number of Dominant	4		(B)
4				Species Across All Strata:	<u>4</u>		(B)
50% = <u>57.5</u> , 20% = <u>23</u>	<u>115</u>	= Total Cove	er	Percent of Dominant Specie			(A/B)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FA	.C: <u>=0</u>		(710)
1				Prevalence Index workshe	et:		
2				Total % Cover of		Itiply by:	
3				OBL species	x1 =		
4	—			FACW species	x2 =		
5				FAC species	x3 =	<u> </u>	
50% =, 20% =		= Total Cove	er	FACU species	x4 =		
Herb Stratum (Plot size: 2M)	_			UPL species	x5 =	·	
1. Polystichum munitum	<u>5</u>	<u>no</u>	<u>FACU</u>	Column Totals:	(A)	(B	·)
2. <u>Rubus ursinus</u>	<u>70</u>	<u>yes</u>	<u>FACU</u>		ce Index = B/A =		
3				Hydrophytic Vegetation In			
4				1 – Rapid Test for Hyd			
5				2 - Dominance Test is			
6				☐ 3 - Prevalence Index is	_		
7				4 - Morphological Adap	otations¹ (Provide supported on a separate sheet)	porting	
8 9				5 - Wetland Non-Vasci			
10							
11				Problematic Hydrophyt	ic Vegetation (Explai	n)	
50% = <u>37.5</u> , 20% = <u>15</u>	75	= Total Cove		¹ Indicators of hydric soil and	wetland hydrology mu	ust	
Woody Vine Stratum (Plot size: 5M)	<u>75</u>	= Total Cove	71	be present, unless disturbed	or problematic.		
Rubus armeniacus	40	VOC	FACU				
2.	<u>40</u>	<u>yes</u>	<u>1 ACO</u>	Hydrophytic			
50% = <u>20</u> , 20% = <u>8</u>	40	= Total Cove		Vegetation	Yes	No	\boxtimes
	40	= 10tal Cove	ži	Present?			
% Bare Ground in Herb Stratum The 1988 Region 9 National W	Intland Dlant Lia	t and 1002 Cum		used for this delineation			
Remarks: The 1966 Region 9 National V	reliano Piani Lis	t and 1993 Sup	plement were	e used for this defineation.			

	Matrix	(Redox F	eatures		_					
inches)	Color (moist)	%		Color (m	oist) %	Type ¹	Loc ²	Texture		F	Remarks	3	
<u>0-2</u>			_		. <u> </u>			<u>Duff</u>					
<u>2-10</u>	10YR 3/3	100	<u>0</u>		<u> </u>			Sa Loam	with cobb	<u>oles</u>			
<u>10-18</u>	10YR 3/4	<u>100</u>	<u>0</u>		· —			Sa Loam	with cobb	<u>oles</u>			
			_		· —								
			_										
			_		· —								
			_		· —								
	ancontration D-Do	nlotion I	— DM-Dod	ucod Mat	rix, CS=Covered or	Coated Sans	H Grains 21	cation: PL=Pc	oro Lining M-	Matrix			
		-			otherwise noted.)	Coaled Sand	Glailis. LC		ors for Probl		lvdric S	oils ³ ·	
] Histos		Jubic to	an Livix		Sandy Redox (St	5)		_	2 cm Muck (A		iyanc o	0113 .	
_	Epipedon (A2)				Stripped Matrix (•		_	Red Parent M	-	F2)		
	Histic (A3)				Loamy Mucky Mi	•	(cept MLRA 1)		Very Shallow	,	,	- 12)	
_	gen Sulfide (A4)				Loamy Gleyed M	. , .	,	_	Other (Explain		,	,	
_	ed Below Dark Sur	face (A1	1)		Depleted Matrix (, ,		_	0 ti 101 (27p) di		u)		
	Dark Surface (A12)	-	,		Redox Dark Surf								
_	Mucky Mineral (S1				Depleted Dark St				ors of hydrop				
_	Gleyed Matrix (S4				Redox Depression				and hydrology ss disturbed o			t,	
estrictive l	Layer (if present):							uo		o. p. oo.o.			
уре:													
epth (inche	es):						Hydric Soils P	resent?		Yes		No	\boxtimes
	Inclusions of othe	r colors f	rom 2-8	inches.									
emarks:	Inclusions of othe		from 2-8	inches.									
emarks:	Inclusions of othe	s:											
YPDROLO Vetland Hydrimary Indic	Inclusions of othe OGY drology Indicators cators (minimum of	s:		eck all tha					ry Indicators (-		ed)	
IYDROLO Vetland Hy rimary India	Inclusions of other	s:			Water-Stained Le	` '		☐ Wa	ter-Stained L	eaves (B	9)	ed)	
IYDROLO Vetland Hyd Irimary India	OGY drology Indicators cators (minimum of ce Water (A1) Water Table (A2)	s:		eck all tha	Water-Stained Le	` '	4B)	☐ Wa	ter-Stained L	eaves (B	9)	ed)	
IYDROLO /etland Hydrimary India Surface High V	Inclusions of other OGY drology Indicators cators (minimum of ce Water (A1) Water Table (A2) ation (A3)	s:		eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11)	, 2, 4A, and 4	4B)	☐ Wa (ML	ter-Stained L LRA 1, 2, 4A, inage Patterr	eaves (B and 4B) ns (B10)	9)	ed)	
IYDROLO /etland Hydrimary Indic Surface High V Satura Water	Inclusions of other OGY drology Indicators cators (minimum of ce Water (A1) Nater Table (A2) ation (A3) Marks (B1)	s:		eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr	, 2 , 4A , and 4 rates (B13)	48)	☐ Wa (MI ☐ Dra ☐ Dry	ter-Stained Land 1, 2, 4A, inage Patterra-Season Wat	eaves (Band 4B) and 4B) and (B10) ter Table	9) (C2)		
IYDROLO /etland Hydrimary India Surface High V	Inclusions of other OGY drology Indicators cators (minimum of ce Water (A1) Water Table (A2) ation (A3) Marks (B1) nent Deposits (B2)	s:		eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide	ates (B13)		☐ Wa (MI ☐ Dra ☐ Dry ☐ Sat	ter-Stained L. LRA 1, 2, 4A, linage Patterr -Season Wat uration Visibl	eaves (Band 4B) and 4B) ans (B10) ter Table e on Aeri	9) (C2) al Image		
IYDROLO Vetland Hyv rimary Indio Surface High V Satura Water Sedim Drift D	Inclusions of other OGY drology Indicators cators (minimum of ce Water (A1) Water Table (A2) ation (A3) Marks (B1) Deposits (B2) Deposits (B3)	s:		eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp	rates (B13) Odor (C1) Oheres along	Living Roots (C3)	☐ Wa (MI ☐ Dra ☐ Dry ☐ Sat ☐ Gee	ter-Stained L LRA 1, 2, 4A, inage Patterr -Season Wat uration Visible omorphic Pos	eaves (Band 4B) and 4B) ans (B10) are Table are on Aeri sition (D2)	9) (C2) al Image		
HYDROLO Wetland Hydrimary India Surface High Weter Water Sedim Sedim Algal	Inclusions of other OGY drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) hent Deposits (B2) Deposits (B3) Mat or Crust (B4)	s:		eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red	rates (B13) Codor (C1) Coheres along uced Iron (C4	Living Roots (C3)	Wa (MI Dra Dry Sat	ter-Stained L. RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl omorphic Pos allow Aquitarc	eaves (Band 4B) and 4B) ans (B10) ter Table e on Aeri sition (D2)	9) (C2) al Image		
HYDROLO Vetland Hyd Primary India Surface High V Satura Water Sedim Drift D Algal I	Inclusions of other Inclusion	s: one requ		eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu	ates (B13) Codor (C1) Coheres along uced Iron (C4 uction in Tilled	Living Roots (C3)	☐ Wa (MI ☐ Dra ☐ Dry ☐ Sat ☐ Geo ☐ Sha ☐ FAO	Ler-Stained L. LRA 1, 2, 4A, LRA 1, 2, 4A, LINE PARTER Season Wat uration Visible Demorphic Pose Allow Aquitaro C-Neutral Tes	eaves (Band 4B) and 4B) ans (B10) ter Table e on Aeri sition (D2) d (D3) st (D5)	9) (C2) al Image	ery (C9)	
IYDROLO Vetland Hydrimary India Satura Water Sedim Drift D Algal I Surfac	Inclusions of other OGY drology Indicators cators (minimum of ce Water (A1) Nater Table (A2) ation (A3) Marks (B1) nent Deposits (B2) Deposits (B3) Mat or Crust (B4) Peposits (B5) Ce Soil Cracks (B6)	s: one requ	uired; ch	eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Red Stunted or Stress	rates (B13) e Odor (C1) cheres along uced Iron (C4 uction in Tilled ses Plants (D	Living Roots (C3)	Wa (MI Dra Dry Sat Geo Sha FAO	ter-Stained L. RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl pmorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour	eaves (Band 4B) and 4B) are (B10) the Table e on Aeri sition (D2 d (D3) at (D5) ands (D6)	9) (C2) al Image)	ery (C9)	
IYDROLO /etland Hydrimary Indio Surface Water Sedim Drift December Surface Surface Iron December Surface Inunda	Inclusions of other Inclus	s: one requ	uired; ch	eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu	rates (B13) e Odor (C1) cheres along uced Iron (C4 uction in Tilled ses Plants (D	Living Roots (C3)	☐ Wa (MI ☐ Dra ☐ Dry ☐ Sat ☐ Geo ☐ Sha ☐ FAO	Ler-Stained L. LRA 1, 2, 4A, LRA 1, 2, 4A, LINE PARTER Season Wat Uration Visible Demorphic Pose Allow Aquitaro C-Neutral Tes	eaves (Band 4B) and 4B) are (B10) the Table e on Aeri sition (D2 d (D3) at (D5) ands (D6)	9) (C2) al Image)	ery (C9)	
IYDROLO Vetland Hyv rimary Indio Surfac High V Sedim Drift D Algal I Iron D Surfac	Inclusions of other DGY drology Indicators cators (minimum of ce Water (A1) Water Table (A2) ation (A3) Marks (B1) Deposits (B3) Mat or Crust (B4) Deposits (B5) Des Soil Cracks (B6) ation Visible on Aerely Vegetated Concerns	s: one requ	uired; ch	eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Red Stunted or Stress	rates (B13) e Odor (C1) cheres along uced Iron (C4 uction in Tilled ses Plants (D	Living Roots (C3)	Wa (MI Dra Dry Sat Geo Sha FAO	ter-Stained L. RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl pmorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour	eaves (Band 4B) and 4B) are (B10) the Table e on Aeri sition (D2 d (D3) at (D5) ands (D6)	9) (C2) al Image)	ery (C9)	
IYDROLO Vetland Hyv rrimary India Surfac High V Satura Sedim Sedim I ron D Surfac I lron D Surfac	Inclusions of other Inclus	s: one requ rial Image cave Sur	uired; ch	eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	rates (B13) c Odor (C1) cheres along uced Iron (C4 uction in Tilled ses Plants (Di Remarks)	Living Roots (C3)	Wa (MI Dra Dry Sat Geo Sha FAO	ter-Stained L. RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl pmorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour	eaves (Band 4B) and 4B) are (B10) the Table e on Aeri sition (D2 d (D3) at (D5) ands (D6)	9) (C2) al Image)	ery (C9)	
IYDROLO Vetland Hydro Surface High V Satura Sedim Drift D Algal I Iron D Surface Inunda Spars ield Observarface Water	Inclusions of other Inclus	s: one required limage cave Sur	uired; chu	eck all that	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	rates (B13) c Odor (C1) cheres along uced Iron (C4 uction in Tiller ses Plants (D: Remarks)	Living Roots (C3)	Wa (MI Dra Dry Sat Geo Sha FAO	ter-Stained L. RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl pmorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour	eaves (Band 4B) and 4B) are (B10) the Table e on Aeri sition (D2 d (D3) at (D5) ands (D6)	9) (C2) al Image)	ery (C9)	
HYDROLO Vetland Hydrimary India Surface High V Sedim Sedim Sedim Inon D Iron D Inon D	Inclusions of other Inclus	one required limage cave Sur	uired; che	eck all tha	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	rates (B13) c Odor (C1) cheres along uced Iron (C4 uction in Tilled ses Plants (D Remarks)	Living Roots (C3)	Wa (MI Dra Dry Sat Geo Sha FAO	ter-Stained Lu- RA 1, 2, 4A, inage Patterr- -Season Wat uration Visibl pomorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour st-Heave Hur	eaves (Bi and 4B) as (B10) der Table e on Aeri sition (D2 d (D3) st (D5) ands (D6)	9) (C2) al Image)	ery (C9)	lo
HYDROLO Vetland Hyd Verlimary India Surface High V Satura Sedim Sedim Iron D Surface Inunda Spars Vater Table Saturation Pencludes cap	Inclusions of other Inclus	one required limage cave Surrives Yes Yes	ery (B7) face (B8	eck all that	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in Depth (inche	rates (B13) e Odor (C1) cheres along uced Iron (C4 uction in Tiller ses Plants (D Remarks)	Living Roots (C3)	□ Wa (MI □ Dra □ Dry □ Sat □ Gee □ Sha □ FAG □ FAG	ter-Stained Lu- RA 1, 2, 4A, inage Patterr- -Season Wat uration Visibl pomorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour st-Heave Hur	eaves (Bi and 4B) as (B10) der Table e on Aeri sition (D2 d (D3) st (D5) ands (D6)	9) (C2) al Image) (LRR A) (D7)	ery (C9)	io
HYDROLO Vetland Hyd Verlimary India Surface High V Satura Sedim Sedim Iron D Surface Inunda Spars Vater Table Saturation Pencludes cap	Inclusions of other Inclus	one required limage cave Surrives Yes Yes	ery (B7) face (B8	eck all that	Water-Stained Le (except MLRA 1 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	rates (B13) e Odor (C1) cheres along uced Iron (C4 uction in Tiller ses Plants (D Remarks)	Living Roots (C3)	□ Wa (MI □ Dra □ Dry □ Sat □ Gee □ Sha □ FAG □ FAG	ter-Stained Lu- RA 1, 2, 4A, inage Patterr- -Season Wat uration Visibl pomorphic Pos allow Aquitarc C-Neutral Tes sed Ant Mour st-Heave Hur	eaves (Bi and 4B) as (B10) der Table e on Aeri sition (D2 d (D3) st (D5) ands (D6)	9) (C2) al Image) (LRR A) (D7)	ery (C9)	lo

Project Site: <u>Lynnwood Link Extension</u>			City/Cour	nty: ML Terrace/Snohomish Sampling Date:	3/28/12
Applicant/Owner: Sound Transit				State: WA Sampling Point:	WMT3-SP1
Investigator(s): M. Maynard, C. Worsley				Section, Township, Range: S32, T27N, R	<u>4E</u>
Landform (hillslope, terrace, etc.):		Loc	al relief (cond	cave, convex, none): <u>none</u> S	Slope (%): <u>0</u>
Subregion (LRR): <u>A</u>	Lat: <u>47.7</u>	78429623900		Long: <u>-122.31451165100</u> Datum	n: <u>NAD83</u>
Soil Map Unit Name: <u>Indianola loamy sand</u>				NWI classification: PFC	<u>)</u>
Are climatic / hydrologic conditions on the site typical for	or this time of	year?	∕es □	No (If no, explain in Remarks.)	
Are Vegetation □, Soil □, or Hydrology	☐, signific	cantly disturbe	d? Are '	"Normal Circumstances" present?	es 🛛 No 🗆
Are Vegetation □, Soil □, or Hydrology	☐, natura	lly problemation	:? (If ne	eeded, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map s	howing sa	mplina poin	t locations	. transects, important features, etc.	
Hydrophytic Vegetation Present?	Yes 🗵			· ·	
Hydric Soil Present?	Yes 🗵	No □	Is the Samp		es 🛛 No 🗆
Wetland Hydrology Present?	Yes 🗵	No □	within a We	mana?	
Remarks: The sample plot is located near a patch	of skunk cal	bbage, approx	cimately 25 f	eet west of the right-of-way fence. 15 feet west of	of a hemiock on a
stump, and 25 feet south of remnant hig			amutory 20 i	oot wood or the right of way follow, to look wood o	n a nomicon on a
VEGETATION – Use scientific names of plant					
Tree Stratum (Plot size: 10M)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. Tsuga heterophylla (on stump)	<u>15</u>	no	FACU	Number of Dominant Species	(4)
2. Prunus emerginata (on hummock)	<u>40</u>	<u>ves</u>	<u>FACU</u>	That Are OBL, FACW, or FAC:	(A)
3. <u>Alnus rubra</u>	<u>75</u>	<u>yes</u>	FAC	Total Number of Dominant	(B)
4				Species Across All Strata:	(D)
50% = <u>65</u> , 20% = <u>26</u>	<u>130</u>	= Total Cove	er	Percent of Dominant Species	(A/B)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC:	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1. Rubus spectabilis	<u>80</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index worksheet:	
2. <u>Sorbus aucuparia (sapling)</u>	<u>2</u>	<u>no</u>	NL (UPL)		ultiply by:
3. Thuja plicata (sapling)	<u>2</u>	<u>no</u>	<u>FAC</u>	OBL species x1	' <u></u> '
4		—		FACW species x2	<u> </u>
5				FAC species x3	
50% = <u>42</u> , 20% = <u>16.8</u>	<u>84</u>	= Total Cove	er	FACU species x4	·
Herb Stratum (Plot size: 2M)				UPL species x5	·
1. Athyrium filix-femina	<u>70</u>	<u>yes</u>	<u>FAC</u>	Column Totals: (A)	(B)
2. <u>Lysichiton americanus</u>	<u>20</u>	<u>ves</u>	<u>OBL</u>	Prevalence Index = B/A =	_
3. <u>Polystichum munitum</u>	<u>2</u>	<u>no</u>	FACU	Hydrophytic Vegetation Indicators:	
4. Equisetum telmataeia	<u>5</u>	<u>no</u>	<u>FACW</u>	1 – Rapid Test for Hydrophytic Vegetation	
5				△ 2 - Dominance Test is >50%	
6				☐ 3 - Prevalence Index is <3.0 ¹	
7				4 - Morphological Adaptations ¹ (Provide sup data in Remarks or on a separate sheet)	
8				<u> </u>	
9					
10				Problematic Hydrophytic Vegetation ¹ (Expla	iin)
11	07	Total Cour		¹ Indicators of hydric soil and wetland hydrology m	ıust
50% = 48.5, 20% = 19.4	<u>97</u>	= Total Cove	er Er	be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: 5M)					
1				Hydrophytic	
50% =, 20% =		Total Cours		Vegetation Yes ⊠	No 🗆
		= Total Cove	; 1	Present?	
% Bare Ground in Herb Stratum				<u> </u>	
Remarks: The 1988 Region 9 National Wetl	and Plant List	and 1993 Sup	plement were	e used for this delineation.	

Depth	Matrix			Redo	x Features							
nches) Colo	or (moist)	%	Color (r	noist) %	Type ¹	Loc ²	Texture	_		Remarks	S	
<u>0-11</u> <u>10</u>	OYR 3/1	<u>100</u>		_	<u> </u>		Si Loam	<u> </u>				
<u>11-18</u> <u>10</u>	OYR 2/1	<u>100</u>		_	· <u> </u>		Si Loam	<u> </u>				
					<u> </u>							
												
				_	-							
				_								
					· <u></u> .							
ype: C= Concentra						Grains. Loc		Pore Lining, N			3	
ydric Soil Indicato	ors: (Applicable	to all L						ators for Pro		Hyaric S	oolis :	
Histosol (A1)	m (AQ)			Sandy Redox				2 cm Muck		TE0\		
Histic Epipedo Plack Histia (A				Stripped Matrix	-	cont MI D A 1)		Red Parent	,	,	E40\	
Black Histic (AHydrogen Sulf	•				Mineral (F1) (ex	cept wicka i)		Very Shallo			F12)	
	w Dark Surface	(111)		Loamy Gleyed Depleted Matri				Other (Expl	am in Ken	iarks)		
		(A11)		Redox Dark Si	• •							
Thick Dark Sul Sandy Mucky	, ,			Depleted Dark	` ,		³ Indic	ators of hydro	phytic vec	etation a	and	
Sandy Mucky Sandy Gleyed				Redox Depres			WE	etland hydrolo	gy must b	e presen		
estrictive Layer (in	. ,			песси Бергез	310113 (1 0)		un	lless disturbed	a or proble	matic.		
/pe:	procenty.											
epth (inches):						Hydric Soils Pr	esent?		Yes	\boxtimes	No	
emarks: High c	oncentrations of	organic	matter with	varying degrees o	f decomposition.							
YDROLOGY		organic	matter with	varying degrees o	f decomposition.							
IYDROLOGY /etland Hydrology	Indicators:				f decomposition.		Saana	dan ladianton			a di)	
YDROLOGY /etland Hydrology rimary Indicators (n	Indicators: ninimum of one		; check all th	at apply)				dary Indicators			ed)	
YDROLOGY /etland Hydrology rimary Indicators (r] Surface Wate	Indicators: ninimum of one r (A1)			at apply) Water-Stained	Leaves (B9)		⊠ v	Vater-Stained	Leaves (E	39)	ed)	
YDROLOGY /etland Hydrology rimary Indicators (n Surface Wate High Water Ta	Indicators: ninimum of one r (A1) able (A2)		; check all th	at apply) Water-Stained (except MLRA	I Leaves (B9) A 1, 2, 4A, and 4			Vater-Stained	Leaves (E	39))	ed)	
YDROLOGY Vetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (A3	Indicators: ninimum of one r (A1) able (A2)		; check all th	at apply) Water-Stained (except MLRA Salt Crust (B1	I Leaves (B9) A 1, 2, 4A, and 4		W	Vater-Stained MLRA 1, 2, 4 Orainage Patte	Leaves (B A, and 4B) erns (B10)	39))	ed)	
YDROLOGY /etland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (A3	Indicators: ninimum of one r (A1) able (A2) 8) (B1)		; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1)	I Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13)		W W (I	Vater-Stained MLRA 1, 2, 4, Drainage Patte Dry-Season W	Leaves (E A, and 4B) erns (B10) ater Table	39))	·	
YDROLOGY Tetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (A3 Water Marks (Indicators: ninimum of one r (A1) able (A2) 3) (B1) posits (B2)		; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte	Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) iide Odor (C1)	В)	W W (I	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi	Leaves (BA, and 4B) erns (B10) ater Table	(C2)	·	
YDROLOGY Vetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits	Indicators: ninimum of one r (A1) able (A2) 8) (B1) posits (B2) (B3)		check all th	at apply) Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize	Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along L	B)	⋈ W(I□ D□ S□ G	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi	Leaves (EA, and 4B) erns (B10) ater Table ble on Aer osition (D2	(C2)	·	
YDROLOGY Vetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (AS Water Marks (Sediment Dep Drift Deposits Algal Mat or C	Indicators: ninimum of one r (A1) able (A2) B) (B1) posits (B2) (B3) crust (B4)		check all th	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R	Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along L educed Iron (C4)	B) Living Roots (C3)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, 4, 4, 2, 4, 4, 2, 4, 4, 2, 4, 4, 2, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	Leaves (EA, and 4B) erns (B10) ater Table ble on Aer osition (D2) ard (D3)	(C2)	·	
IYDROLOGY Vetland Hydrology rimary Indicators (n Surface Wate High Water Ta Saturation (A3 Water Marks (a) Sediment Dep Drift Deposits Algal Mat or Ca	Indicators: ninimum of one r (A1) able (A2) 8) (B1) posits (B2) (B3) crust (B4) (B5)		; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re	I Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduced Iron (C4) eduction in Tilled	B) Living Roots (C3)) Soils (C6)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T	Leaves (EA, and 4B, erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5)		ery (C9)	
YDROLOGY /etland Hydrology rimary Indicators (n Surface Wate High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C	Indicators: ninimum of one r (A1) able (A2) B) (B1) posits (B2) (B3) crust (B4) (B5) cracks (B6)	required	; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Stunted or Stre	I Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduced Iron (C4) eduction in Tilled esses Plants (D1	B) Living Roots (C3)) Soils (C6)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita AC-Neutral T Raised Ant Mo	Leaves (EA, and 4B, erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) aunds (D6)	(C2) (C2) (LRR A)	ery (C9)	
YDROLOGY Tetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis	Indicators: ninimum of one r (A1) able (A2) 8) (B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) sible on Aerial In	required;	; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re	I Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduced Iron (C4) eduction in Tilled esses Plants (D1	B) Living Roots (C3)) Soils (C6)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T	Leaves (EA, and 4B, erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) aunds (D6)	(C2) (C2) (LRR A)	ery (C9)	
YDROLOGY Vetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vegr	Indicators: ninimum of one r (A1) able (A2) B1) posits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial Inetated Concave	required;	; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Stunted or Stre	I Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduced Iron (C4) eduction in Tilled esses Plants (D1	B) Living Roots (C3)) Soils (C6)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita AC-Neutral T Raised Ant Mo	Leaves (EA, and 4B, erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) aunds (D6)	(C2) (C2) (LRR A)	ery (C9)	
YDROLOGY Vetland Hydrology rimary Indicators (r Surface Wate High Water Ta Saturation (AS Water Marks (r Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vegal	Indicators: ninimum of one r (A1) able (A2) B) (B1) posits (B2) (B3) crust (B4) (B5) cracks (B6) sible on Aerial Inetated Concave	required;	; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Stunted or Stre Other (Explain	Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduced Iron (C4) educed Iron in Tilled esses Plants (D1	B) Living Roots (C3)) Soils (C6)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita AC-Neutral T Raised Ant Mo	Leaves (EA, and 4B, erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) aunds (D6)	(C2) (C2) (LRR A)	ery (C9)	
YDROLOGY Tetland Hydrology Timary Indicators (note: 1	Indicators: Ininimum of one In (A1) Indicators: Indica	required;	; check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre Other (Explain	I Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along L educed Iron (C4) eduction in Tilled esses Plants (D1 in Remarks)	B) Living Roots (C3)) Soils (C6)	W (I C C C C C C C C C	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita AC-Neutral T Raised Ant Mo	Leaves (EA, and 4B, erns (B10) atter Table ble on Aer osition (D2 ard (D3) est (D5) aunds (D6)	(C2) (C2) (LRR A)	ery (C9)	
YDROLOGY /etland Hydrology rimary Indicators (r	Indicators: Ininimum of one In (A1) Indicators: Ininimum of one In (A1) Indicators: Ininimum of one In (A1) Indicators: Ininimum of one Indicators: Ininimum of one Indicators: Indicators	required; nagery (E Surface	check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1' Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre Other (Explain	I Leaves (B9) A 1, 2, 4A, and 4 1) bebrates (B13) ide Odor (C1) bepheres along Leduced Iron (C4) eduction in Tilled esses Plants (D1 in Remarks) ches): thes): 16	B) Living Roots (C3) Soils (C6) (LRR A)	W	Vater-Stained MLRA 1, 2, 4, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita AC-Neutral T Raised Ant Mo	Leaves (E A, and 4B, erns (B10) ater Table ble on Aer osition (D2 ard (D3) est (D5) unds (D6) ummocks	(C2) (C2) (LRR A))	lo
YDROLOGY /etland Hydrology rimary Indicators (n Surface Wate High Water Ta Saturation (A3 Water Marks (Sediment Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vegreled Observations urface Water Preser/aturation Present? ncludes capillary fri	Indicators: Ininimum of one In (A1) Indicators: Ininimum of one In (A1) Indicators: Ininimum of one In (A1) Indicators: Ininimum of one Indicators: Ininimum of one Indicators: Indicators	nagery (E	check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre Other (Explain Depth (inc	Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduction in Tilled esses Plants (D1 in Remarks) ches): ches): ches): 16 ches): 13	B) Living Roots (C3) Soils (C6) (LRR A)	W	Vater-Stained MLRA 1, 2, 4, Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo Grost-Heave H	Leaves (E A, and 4B, erns (B10) ater Table ble on Aer osition (D2 ard (D3) est (D5) unds (D6) ummocks	(C2) ial Image (LRR A))	lo
YDROLOGY Vetland Hydrology rimary Indicators (n Surface Wate High Water Ta Saturation (A3 Water Marks (n Sediment Deposits Algal Mat or Co Iron Deposits Surface Soil Co Inundation Visits Sparsely Veget Vetled Observations urface Water Present aturation Present?	Indicators: Ininimum of one In (A1) Indicators: Ininimum of one In (A1) Indicators: Ininimum of one In (A1) Indicators: Ininimum of one Indicators: Ininimum of one Indicators: Indicators	nagery (E	check all tr	at apply) Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre Other (Explain Depth (inc	Leaves (B9) A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along Leduction in Tilled esses Plants (D1 in Remarks) ches): ches): ches): 16 ches): 13	B) Living Roots (C3) Soils (C6) (LRR A)	W	Vater-Stained MLRA 1, 2, 4, Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mo Grost-Heave H	Leaves (E A, and 4B, erns (B10) ater Table ble on Aer osition (D2 ard (D3) est (D5) unds (D6) ummocks	(C2) ial Image (LRR A))	lo

Project Site:	Lynnwood Link	Extension					City/Cou	nty:	ML T	Terrace/	/Snohomi	ish S	Sampling	g Date:	3/28	8/12	
Applicant/Owner:	Sound Transit									5	State: W	<u>/A</u> \$	Sampling	g Point:	WN	/IT3-SI	22
Investigator(s):	M. Maynard, C.	Worsley							Se	ection, T	Township	, Range	e: <u>S32,</u>	T27N, 4E			
Landform (hillslope, te	errace, etc.):					Loca	al relief (con	cave	, conve	ex, none	e): <u>con</u>	nvex		Slope	e (%):	<u>15</u>	
Subregion (LRR):	<u>A</u>		Lat:	47.784	14467	<u>5300</u>			Long:	-122.3	1462495	000		Datum:	NAD8	<u>3</u>	
Soil Map Unit Name:	Indianola loan	ny sand									NW	/I classi	fication:	<u>Upland</u>			
Are climatic / hydrolog	ic conditions on	the site typical for	this time	e of ye	ar?	Y	′es 🗆]	No		(If no, ex	plain in	Remarks	s.)			
Are Vegetation	, Soil □,	or Hydrology	□, sig	gnificar	ntly dis	sturbed	d? Are	"Nor	mal Cir	rcumsta	nces" pre	esent?		Yes	\boxtimes	No	
Are Vegetation	, Soil □,	or Hydrology	□, na	turally	proble	ematic	? (If n	eede	ed, expl	lain any	answers	in Rem	narks.)				
SUMMARY OF FIN	IDINGS – Atta	ch site map sł	nowing	samp	oling	point	locations	s, tra	ınsect	ts, imp	ortant f	feature	es, etc.				
Hydrophytic Vegetatio	n Present?		Yes	\boxtimes	No												
Hydric Soil Present?			Yes	\boxtimes	No		Is the Sam within a W							Yes		No	\boxtimes
Wetland Hydrology Pr	esent?		Yes		No	\boxtimes		••••									
Remarks: The samp	ple plot is locate	ed northwest of	the wetla	and, a	pprox	cimate	ly 15 feet no	orth	of rem	nant hi	gh visibi	ility fen	ice.				
VEGETATION – U	se scientific n	ames of plants															
Tree Stratum (Plot siz	e: <u>10M</u>)		Absolut % Cove		Domin Specie		Indicator Status	D	omina	nce Tes	st Works	heet:					
1. Alnus rubra			<u>40</u>		<u>/es</u>		FAC	N	umber	of Domi	inant Spe	ecies		•			(4)
2				-							ACW, or			<u>2</u>			(A)
3				-				Т	otal Nu	ımber of	f Domina	nt		2			(D)
4				-				S	pecies	Across	All Strata	а:		<u>3</u>			(B)
50% = <u>20</u> , 20% = <u>8</u>			<u>40</u>	=	= Tota	I Cove	r	P	ercent (of Domi	inant Spe	ecies		<u>66</u>			(A/B)
Sapling/Shrub Stratun	n (Plot size: <u>5M</u>)							TI	hat Are	OBL, F	ACW, or	r FAC:		<u>00</u>			(7/15)
1				-				Pi	revaler	nce Ind	ex works	sheet:					
2				-						Tot	al % Cov	ver of:		Multip	ly by:		
3				-					BL spe		_			x1 =			
4				-						pecies	_			x2 =			
5				-					AC spe		_			x3 =			
50% =, 20% =				=	= Tota	I Cove	er		ACU sp		_			x4 =		_	
Herb Stratum (Plot siz	ze: <u>2M</u>)							U	PL spe	cies	_			x5 =			
Equisetum telmate	<u>eia</u>		<u>25</u>	7	<u>/es</u>		<u>FACW</u>	C	olumn [·]	Totals:	_	(/	۹)			(E	3)
2				-							Preva	lence Ir	ndex = B	/A =			
3				-				'		-	egetation						
4				-					_		Test for I			etation			
5				-					1 2-	Domina	ance Tes	t is >50	%				
6				-				L	J 3-	Prevale	ence Inde	ex is <u><</u> 3.	.0 ¹				
7				-										ovide suppoi	ting		
8				-				1_	_					te sheet)			
9				-					_		d Non-Va						
10				-					J Pro	oblemat	ic Hydror	phytic V	egetation	n ¹ (Explain)			
11				-				1 lr	ndicato	rs of hy	dric soil a	and wet	land hvd	Irology must			
50% = <u>12.5</u> , 20% = <u>5</u>	(D) () 514)		<u>25</u>	=	= I ota	I Cove	er				ss distur						
Woody Vine Stratum			00				E4011										
1. Rubus armeniacu	<u>S</u>		<u>90</u>	7	<u>/es</u>		<u>FACU</u>	l H	ydropł	hvtic							
2	_			-					egetati	-		Yes	s	\boxtimes	No		
50% = 45.5, 20% = 18	="		<u>90</u>	=	= I ota	I Cove	er	Pi	resent	?							
% Bare Ground in He	·	-															
Remarks:	The 1988 Region	9 National Wetla	nd Plant	List ar	nd 199	93 Sup	plement wer	re us	ed for t	this delii	neation.						

Depth	Matrix				Redox Feat	tures							
inches) Co	lor (moist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture	<u> </u>		Remark	S	
<u>0-3</u>	10YR 2/2	<u>100</u>		_				Sa Loa	<u> </u>				
<u>3-18</u>	2.5Y 4/2	<u>95</u>	<u>10YF</u>	R 4/6	<u>5</u>	<u>C</u>	<u>M</u>	v. Sa Lo	<u>am</u>				
				_									
				_					-				
				_					-				
				_				-					
				_					-				
Type: C= Concent	ration D-Danlat	tion PM-	Poducod N			atod Sand	Grains ² Lo	cation: DI -	Pore Lining,	M_Matrix			
ydric Soil Indica						aleu Sanu	Giallis. LO		cators for Pro		Hydric 9	Soils ³ ·	
Histosol (A1)		o to an E			dy Redox (S5)				2 cm Muck		,		
Histic Epiped					oped Matrix (S6)				Red Paren		TF2)		
Black Histic (my Mucky Miner		cept MLRA 1)		Very Shall		,	F12)	
☐ Hydrogen Su				Loa	my Gleyed Matri	x (F2)			Other (Exp			,	
	ow Dark Surface) (A11)			oleted Matrix (F3)						,		
Thick Dark S	urface (A12)			Red	lox Dark Surface	(F6)							
Sandy Mucky	/ Mineral (S1)			Dep	leted Dark Surfa	ce (F7)			cators of hydr				
Sandy Gleye	d Matrix (S4)			Red	lox Depressions	(F8)			etland hydrol nless disturbe			π,	
estrictive Layer	(if present):												
ype:													
epth (inches):							Hydric Soils Pr	esent?		Yes	\boxtimes	No	
emarks:													
HYDROLOGY													
HYDROLOGY Vetland Hydrolog	=												
HYDROLOGY Vetland Hydrolog	(minimum of one	required			•				dary Indicato	•		ed)	
HYDROLOGY Wetland Hydrolog Primary Indicators Surface Wat	(minimum of one er (A1)	e required;	; check all] Wat	ter-Stained Leave	` '			Water-Stained	d Leaves (I	B9)	red)	
IYDROLOGY /etland Hydrolog rimary Indicators Surface Wat High Water	(minimum of one er (A1) Γable (A2)	required;] Wat	ter-Stained Leave	` '	B)		Water-Stained	d Leaves (I	B9)	red)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wat High Water	(minimum of one er (A1) Fable (A2)	required] Wat (exc	ter-Stained Leave cept MLRA 1, 2, Crust (B11)	4A, and 4	В)		Water-Stained (MLRA 1, 2, 4 Drainage Patt	d Leaves (I IA, and 4E erns (B10)	B9)	ed)	
YDROLOGY Vetland Hydrolog rimary Indicators Surface Wat High Water Saturation (A	(minimum of one er (A1) Γable (A2) λ3) : (B1)	: required;		Wat (exc Salt	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate	4A , and 4 s (B13)	В)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V	d Leaves (I IA, and 4E erns (B10) Vater Table	B9) B) e (C2)	·	
YDROLOGY /etland Hydrolog rimary Indicators Surface Wat High Water Saturation (A Water Marks Sediment De	(minimum of one er (A1) Fable (A2) A3) (B1) eposits (B2)	: required;		(exc (exc Salt Aqu Hyd	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide Od	4A , and 4 s (B13) dor (C1)			Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae	B9) B) C (C2) rial Imag	·	
IYDROLOGY Vetland Hydrolog Irimary Indicators Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit	(minimum of one er (A1) Fable (A2) \(\lambda\)3) \(\delta\) (B1) \(\delta\) (B2) \(\delta\) (B3)	· required;	C C C	Wate (except should be provided by the content of t	ter-Stained Leave cept MLRA 1, 2, Crust (B11) tatic Invertebrate lrogen Sulfide Od dized Rhizosphe	4A , and 4 s (B13) dor (C1) res along L	iving Roots (C3)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D	B9) B) C (C2) rial Imag	·	
HYDROLOGY Vetland Hydrolog Vrimary Indicators Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or	(minimum of one er (A1) Fable (A2) A3) (B1) eposits (B2) s (B3) Crust (B4)	e required,		Wate (excellent (excel	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide Od dized Rhizosphe sence of Reduce	4A, and 4 s (B13) dor (C1) res along L d Iron (C4)	iving Roots (C3)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3)	B9) B) C (C2) rial Imag	·	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or	(minimum of one er (A1) Fable (A2) A3) F (B1) Exposits (B2) F (B3) Crust (B4) F (B5)	e required		Wate (excellent (excel	ter-Stained Leave cept MLRA 1, 2, Crust (B11) tatic Invertebrate lrogen Sulfide Od dized Rhizosphe	4A, and 4 s (B13) dor (C1) res along L d Iron (C4) on in Tilled	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IA, and 4E erns (B10) Vater Table ible on Ae Position (D ard (D3)	B9) (C2) (C3) (C4)	ery (C9)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit	(minimum of one er (A1) Fable (A2) A3) F (B1) Exposits (B2) F (B3) Crust (B4) F (B5)			Wat (exc (exc)) Salt Aqu (Disc) Hyd (Oxid) President Records	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reduction	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	d Leaves (I IAA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B) C(C2) rial Imag 2)	ery (C9)	
HYDROLOGY Wetland Hydrolog virimary Indicators Surface Wate High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	(minimum of one er (A1) Fable (A2) A3) F(B1) Poposits (B2) F(B3) Crust (B4) F(B5) Cracks (B6)	magery (E		Wat (exc (exc)) Salt Aqu (Disc) Hyd (Oxid) President Records	ter-Stained Leave cept MLRA 1, 2, Crust (B11) tatic Invertebrate lrogen Sulfide Oc dized Rhizosphe sence of Reduce tent Iron Reduction ted or Stresses	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IAA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B) C(C2) rial Imag 2)	ery (C9)	
IYDROLOGY Vetland Hydrolog Vetland Hydrolog Vetland Hydrolog Vetland Hydrolog Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vet	(minimum of one er (A1) Fable (A2) (A3) (B1) Poposits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) isible on Aerial I getated Concave	magery (E		Wat (exc (exc)) Salt Aqu	ter-Stained Leave cept MLRA 1, 2, Crust (B11) tatic Invertebrate lrogen Sulfide Oc dized Rhizosphe sence of Reduce tent Iron Reduction ted or Stresses	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IAA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B) C(C2) rial Imag 2)	ery (C9)	
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wat High Water Saturation (A Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vetical	(minimum of one er (A1) Fable (A2) A3) (B1) Poposits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) isible on Aerial I getated Concave s:	magery (E	C C C C C C C C C C C C C C C C C C C	Wat (exc (exc)) Salt Aqu	ter-Stained Leave cept MLRA 1, 2, Crust (B11) tatic Invertebrate lrogen Sulfide Oc dized Rhizosphe sence of Reduce tent Iron Reduction ted or Stresses	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IAA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B) C(C2) rial Imag 2)	ery (C9)	
Surface Water Algal Mat or Iron Deposite Inundation Variace Sparsely Vegical Observation furface Water Preservation (Algal Mat or Iron Deposite Inundation Variace Water Preservation Surface Water Preservations (Algal Mat or Iron Deposite Inundation Variace Water Preservations)	(minimum of one er (A1) Fable (A2) A3) (B1) Eposits (B2) S (B3) Crust (B4) S (B5) Cracks (B6) isible on Aerial I getated Concave s: eent? Yes	magery (E	C	Wat (exc Salt Aqu Hyd Oxid Pres Rec Stur	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate drogen Sulfide Or dized Rhizosphe sence of Reduce cent Iron Reduction ted or Stresses er (Explain in Re	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IAA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6	B9) B) C(C2) rial Imag 2)	ery (C9)	
HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wat High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vetrield Observation Surface Water Prese Vater Table Prese Saturation Present	(minimum of one er (A1) Fable (A2) A3) (B1) Eposits (B2) S (B3) Crust (B4) S (B5) Cracks (B6) isible on Aerial I getated Concave S: Sent? Yes Yes Yes	magery (E	C	Wat (exc (exc) Salt (e	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide Oc dized Rhizosphe sence of Reduce cent Iron Reduction ted or Stresses er (Explain in Re	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)) (LRR A)		Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6 Hummocks	B9) B) C(C2) Fial Imag C(C2) C(C2) C(C2) C(C2) C(C2) C(C2) C(C2)	ery (C9)	No
IYDROLOGY Vetland Hydrolog rimary Indicators Surface Wate High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Vet Veter Table Prese Vater Table Prese Vater Table Present Includes capillary f	(minimum of one er (A1) Fable (A2) A3) Fable (B1) Foposits (B2) Fable (B3) Crust (B4) Fable (B6) Fable (B7) Fable (B7	magery (Ee Surface	C	Wat (exc (exc) Salt (e	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide Oc dized Rhizosphe sence of Reduce cent Iron Reduction ted or Stresses er (Explain in Re	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1 marks)	iving Roots (C3) Soils (C6)) (LRR A)		Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave H	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6 Hummocks	B9) e (C2) rial Imag 2) (LRR A	ery (C9)	No
High Water Saturation (ASSECTION OF COMMENT	(minimum of one er (A1) Fable (A2) A3) Fable (B1) Foposits (B2) Fable (B3) Crust (B4) Fable (B6) Fable (B7) Fable (B7	magery (Ee Surface	C	Wat (exc (exc) Salt (e	ter-Stained Leave cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide Oc dized Rhizosphe sence of Reduce cent Iron Reduction ted or Stresses er (Explain in Re	s (B13) dor (C1) res along L d Iron (C4) on in Tilled Plants (D1 marks)	iving Roots (C3) Soils (C6)) (LRR A)		Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave H	d Leaves (I IA, and 4E erns (B10) Vater Table sible on Ae Position (D ard (D3) Fest (D5) bounds (D6 Hummocks	B9) e (C2) rial Imag 2) (LRR A	ery (C9)	No

Project Site:	Lynnwood Link	Extension				City	//County:	ML T	Terrace/Sr	nohomish	Samplin	g Date:	3/29/1	12
Applicant/Owner:	Sound Transit								Sta	te: WA	Samplin	g Point:	WMT.	4-SP1
Investigator(s):	M. Maynard, C.	Worsley						Se	ection, Tov	wnship, Ran	ge: <u>S32,</u>	T27N, R4E		
Landform (hillslope, te	errace, etc.):				L	ocal relief	(concave	e, conve	x, none):	none		Slop	e (%): 3	<u>3</u>
Subregion (LRR):	<u>A</u>		Lat:	47.7798	903490	<u>0</u>		Long:	-122.318	<u> 26331600</u>		Datum:	NAD83	
Soil Map Unit Name:	Alderwood-Urb	oan Land								NWI clas	sification:	<u>PFO</u>		
Are climatic / hydrolog	ic conditions on the	he site typical for	this time	e of year	r?	Yes		No	⊠ (If	no, explain i	n Remark	s.)		
Are Vegetation	, Soil □,	or Hydrology	□, sig	nificantl	ly disturl	bed?	Are "No	rmal Cir	rcumstanc	es" present?	?	Yes	I	No 🗆
Are Vegetation	, Soil □,	or Hydrology	□, nat	turally p	roblema	atic?	(If need	led, expl	ain any ar	nswers in Re	emarks.)			
SUMMARY OF FIN	IDINGS – Attac	ch site map sh	owing	sampl	ing po	int locat	ions, tr	ansect	s, impor	tant featu	res, etc.			
Hydrophytic Vegetatio	n Present?		Yes	\boxtimes	No 🗆									
Hydric Soil Present?			Yes	\boxtimes	No 🗆		Sample a Wetla					Yes	⊠ I	No 🗆
Wetland Hydrology Pr	esent?		Yes	\boxtimes	No 🗆									
Remarks: The sam									proximate	ely 15 feet e	ast of the	right-of-wa	ay fence	, near a
red alder	. Raining during	the site investig	gation a	nd heav	y rains	the nigh	t before.							
VEGETATION – U	se scientific na	ames of plants												
Tree Stratum (Plot siz	re:)		Absolut % Cove		ominant oecies?	Indica Statu		Domina	nce Test \	Worksheet:				
1. <u>Alnus rubra</u>			40	ye		FAC		Number	of Domina	ant Species		2		(4)
2				_			1	That Are	OBL, FA	CW, or FAC:	:	<u>3</u>		(A)
3				_	_		1	Γotal Nu	mber of D	ominant		<u>4</u>		(B)
4				_			8	Species	Across All	Strata:		=		(D)
50% = 20, 20% = 8			<u>40</u>	=	Total Co	over				nt Species		<u>75</u>		(A/B)
Sapling/Shrub Stratun	n (Plot size:	_)						That Are	OBL, FAC	CW, or FAC:				(/
Rubus spectabilis			<u>80</u>	<u>ye</u>	<u>s</u>	FAC	F	Prevaler		worksheet:				
2				_					·	% Cover of:		Multip	ly by:	
3				_		-		OBL spe				x1 =		=
4				_				FACW s	-			x2 =		_
5				_		-		FAC spe				x3 =		=
50% = <u>40</u> , 20% = <u>16</u>	,		<u>80</u>	=	Total Co	over		FACU sp				x4 =		=
Herb Stratum (Plot siz	-		00			E40		JPL spe			(*)	x5 =		- (5)
1. Athyrium filix-femi			<u>20</u>	<u>ye</u>		<u>FAC</u>		Column ⁻	Totals:		(A)			_ (B)
2. Polystichum muni			2	nc		FACI	-			Prevalence		3/A =		
3. <u>Phalaris arundina</u>			2	nc	_	FAC\				etation Indic				
4. Equisetum fluviati	<u>ie</u>		2	nc	<u>)</u>	<u>OBL</u>	_	_		est for Hydro		getation		
5				_]	_		ce Test is >5				
6				_						ce Index is <				
7				_	_	-	[gical Adapta emarks or or		ovide suppo	rting	
8 9				_	_		ı			Non-Vascula	٠.			
				_	_			_				1		
10				_	_			☐ Pro	oblematic	Hydrophytic	Vegetatio	on ¹ (Explain)		
11			26	_	— Total Co		1	Indicato	rs of hydri	c soil and w	etland hyd	drology must		
50% = 13, 20% = 5.2 Woody Vine Stratum	(Plot sizo:		<u>26</u>	=	i olai Cl	ovei	k	oe prese	nt, unless	disturbed or	r problem	atic.		
			5 0			EACI								
Rubus armeniacu 2.	<u>s</u>		<u>50</u>	<u>ye</u>	: <u>S</u>	FAC		Hydroph	nytic					
50% = <u>25</u> , 20% = <u>10</u>			<u></u>	_	— Total Co		١	/egetati	ion	Υ	es	\boxtimes	No	
			<u>50</u>	_	i otai Ot	Jvei	F	Present	?					
% Bare Ground in He		1 1 1 1 1						1 1000	D : 0	N: 1387			200.0	
	Species with 5% o sed for this deline		overage	were no	ot consid	derea dom	iinant. I	ne 1988	Region 9	National We	etiand Pia	nt List and 1	993 Sup	piement

Oches) Color (mois) 0-5 10YR 2/2 5-16 10Y 3/1 16-18 10GY 4/2 5Y 3/1	<u> </u>		Color	r (mois	t) % Ty	ype ¹ Loc ²	Texture	9	Rem	arks		
5-16 10Y 3/1 16-18 10GY 4/1	<u>د</u> ا	<u>%</u> 00					Loam					
	_	00					Gr Sar					
5Y 3/1	_	30					v. Sa Lo					
		<u>70</u>					v. Sa Lo	oam				
	_		_					_				
	_		_									
	_		_									
 /pe: C= Concentration, D	=Depletior	 n. RM=R	 Reduced	Matrix	. CS=Covered or Coated	Sand Grains.	Location: PL:	 =Pore Lining, M=Ma	atrix			
dric Soil Indicators: (A								icators for Problem		ic Soil	ls³:	
Histosol (A1)				_ :	Sandy Redox (S5)			2 cm Muck (A10))			
Histic Epipedon (A2)				_ :	Stripped Matrix (S6)			Red Parent Mate	erial (TF2)			
Black Histic (A3)				_	Loamy Mucky Mineral (F	1) (except MLRA 1) 🗆	Very Shallow Da	ark Surface	e (TF12	2)	
Hydrogen Sulfide (A4	.)]	Loamy Gleyed Matrix (F2	2)		Other (Explain in	n Remarks)		
Depleted Below Dark	Surface (A	\11)]	Depleted Matrix (F3)							
Thick Dark Surface (A	\ 12)]	Redox Dark Surface (F6))						
Sandy Mucky Minera	(S1)]	Depleted Dark Surface (I	F7)		icators of hydrophyt			b	
Sandy Gleyed Matrix	(S4)]	Redox Depressions (F8))		wetland hydrology m unless disturbed or p				
strictive Layer (if prese	nt):											
oe:												
pth (inches):						Hydric Soil	s Present?	Y	′es ⊠	1	No	
YDROLOGY												
YDROLOGY etland Hydrology Indica	tors:											
etland Hydrology Indica		quired;	check al	I that a	pply)		Secor	ndary Indicators (2 d	or more rec	quired))	
etland Hydrology Indica imary Indicators (minimu		quired;			pply) Water-Stained Leaves (E	39)		ndary Indicators (2 o Water-Stained Leav		quired))	
etland Hydrology Indica mary Indicators (minimum Surface Water (A1)	m of one re	quired;		<u> </u>		•		•	ves (B9)	quired))	
etland Hydrology Indica mary Indicators (minimu Surface Water (A1) High Water Table (A	m of one re	quired;	[Water-Stained Leaves (E	•		Water-Stained Leav	ves (B9) nd 4B)	quired))	
etland Hydrology Indica mary Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3)	m of one re	equired;]		Water-Stained Leaves (E	and 4B)		Water-Stained Leav	ves (B9) nd 4B) (B10))	
etland Hydrology Indica mary Indicators (minimul Surface Water (A1) High Water Table (A Saturation (A3)	m of one re	equired;]		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11)	and 4B) 13)		Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (ves (B9) nd 4B) (B10) Table (C2))		
etland Hydrology Indica mary Indicators (minimum Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	m of one re	equired;]]]		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B	and 4B) 13) C1)		Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water	ves (B9) nd 4B) (B10) Table (C2) on Aerial Im)		
etland Hydrology Indications (minimum Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B	m of one re 2) B2)	equired;	 		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (and 4B) 13) C1) along Living Roots (Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2))		
etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B Iron Deposits (B5)	m of one re 2) B2)	equired;]]]]]		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a	and 4B) 13) C1) along Living Roots (on (C4)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, an Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3))		
etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B Iron Deposits (B5)	m of one re 2) B2)	quired;]]]]]		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Irc	and 4B) 13) C1) along Living Roots (con (C4) n Tilled Soils (C6)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, an Drainage Patterns (Dry-Season Water Saturation Visible o Geomorphic Position Shallow Aquitard (E	ves (B9) nd 4B) (B10) Table (C2) on Aerial Im on (D2) D3)) nagery		
etland Hydrology Indicationary Indicators (minimum Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B Iron Deposits (B5) Surface Soil Cracks	m of one re 2) B2) 44) (B6)		 		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in	and 4B) 13) C1) along Living Roots (con (C4) in Tilled Soils (C6) ints (D1) (LRR A)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, an Drainage Patterns (Dry-Season Water Saturation Visible o Geomorphic Positio Shallow Aquitard (D FAC-Neutral Test (ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3) D5) s (D6) (LRI) nagery R A)		
etland Hydrology Indicationary Indicators (minimum Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B Iron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated	m of one re 2) B2) 44) (B6) Aerial Ima	ngery (B	 		Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B' Hydrogen Sulfide Odor (COXIDIZED RESEAUTE OF REDUCED INC. Recent Iron Reduction in Stunted or Stresses Plar	and 4B) 13) C1) along Living Roots (con (C4) in Tilled Soils (C6) ints (D1) (LRR A)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (E FAC-Neutral Test () Raised Ant Mounds	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3) D5) s (D6) (LRI) nagery R A)		
etland Hydrology Indicationary Indicators (minimum) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1 Iron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated (B1)	m of one re 2) B2) 44) (B6) A Aerial Ima Concave Si	gery (B urface ([Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (i Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in Stunted or Stresses Plar Other (Explain in Remark	and 4B) 13) C1) along Living Roots (con (C4) in Tilled Soils (C6) ints (D1) (LRR A)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (E FAC-Neutral Test () Raised Ant Mounds	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3) D5) s (D6) (LRI) nagery R A)		
etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated (Celd Observations:	m of one re 2) B2) 44) (B6) Aerial Ima	urface ([Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (i Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in Stunted or Stresses Plar Other (Explain in Remark	and 4B) 13) C1) along Living Roots (con (C4) in Tilled Soils (C6) ints (D1) (LRR A)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (E FAC-Neutral Test () Raised Ant Mounds	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3) D5) s (D6) (LRI) nagery R A)		
etland Hydrology Indicatimary Indicators (minimum Indicators (mini	m of one re 2) B2) 44) (B6) A Aerial Ima Concave Si	gery (B urface ([Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (i Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in Stunted or Stresses Plar Other (Explain in Remark	and 4B) 13) C1) along Living Roots (con (C4) a Tilled Soils (C6) ats (D1) (LRR A) ks)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (E FAC-Neutral Test () Raised Ant Mounds	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3) D5) s (D6) (LRI) nagery R A)		
etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A1) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Surface Soil Cracks (B1) Inundation Visible or Sparsely Vegetated (B1)	m of one re 2) B2) 44) (B6) Aerial Ima Concave So	urface ([Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B Hydrogen Sulfide Odor (i Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in Stunted or Stresses Plar Other (Explain in Remark Depth (inches):	and 4B) 13) C1) along Living Roots (con (C4) n Tilled Soils (C6) nts (D1) (LRR A) ks)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (E FAC-Neutral Test () Raised Ant Mounds	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) D3) D5) s (D6) (LRI) nagery		0
etland Hydrology Indicatimary Indicators (minimum) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B3) Indicators (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated (Cate) etla Observations: urface Water Present? atturation Present?	m of one re 2) B2) 44) (B6) Aerial Ima Concave So Yes Yes Yes	ngery (B urface (□ □	[Water-Stained Leaves (E (except MLRA 1, 2, 4A, Salt Crust (B11) Aquatic Invertebrates (B: Hydrogen Sulfide Odor (i Oxidized Rhizospheres a Presence of Reduced Iro Recent Iron Reduction in Stunted or Stresses Plar Other (Explain in Remark Depth (inches):	and 4B) 13) C1) along Living Roots (con (C4) in Tilled Soils (C6) ints (D1) (LRR A) iks)	C3)	Water-Stained Leav (MLRA 1, 2, 4A, and Drainage Patterns (Dry-Season Water Saturation Visible of Geomorphic Position Shallow Aquitard (Defended of the Community of the Communit	ves (B9) nd 4B) (B10) Table (C2) on Aerial Imon (D2) O3) D5) s (D6) (LRI nocks (D7)) nagery	(C9)	0

Project Site:	Lynnwood Link Extension	<u>n</u>		City/Cour	ty: ML Terrace/Snohomish	Sampling Date:	3/29/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WMT4-SP2
Investigator(s):	M. Maynard, C. Worsley				Section, Township, R	Range: <u>\$32, T27N, R4E</u>	<u> </u>
Landform (hillslope, te	errace, etc.):		Loc	al relief (conc	ave, convex, none): <u>conve</u>	<u>x</u> Slo	pe (%): <u>2</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	77988545100		Long: -122.3181758620	<u>0</u> Datum:	NAD83
Soil Map Unit Name:	Urban Land				NWI	classification: <u>Upland</u>	<u>t</u>
Are climatic / hydrolog	ic conditions on the site ty	pical for this time of	year?	Yes 🗆	No 🛛 (If no, expla	in in Remarks.)	
Are Vegetation	, Soil □, or Hydr	ology \square , signifi	cantly disturbe	d? Are "	Normal Circumstances" prese	ent? Yes	⊠ No □
Are Vegetation	, Soil □, or Hydr	ology \square , natura	ally problemation	c? (If ne	eded, explain any answers in	Remarks.)	
SUMMARY OF FIN	IDINGS – Attach site	map showing sa	mpling poin	t locations,	transects, important fea	atures, etc.	
Hydrophytic Vegetation	n Present?	Yes [] No ⊠				
Hydric Soil Present?		Yes [] No ⊠	Is the Samp		Yes	□ No ⊠
Wetland Hydrology Pr	resent?	Yes 🛭	No □				
			st of the wall a	ınd approxim	ately 25 feet east of WMT4-	SP1. Heavy rains the p	revious night and
light rain	during the site investig	ation.					
VEGETATION – U	se scientific names o	•					
Tree Stratum (Plot siz	re: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Workshe	et:	
1. Alnus rubra		<u>75</u>	<u>ves</u>	FAC	Number of Dominant Speci-	es ,	(4)
2					That Are OBL, FACW, or Fa	AC: <u>1</u>	(A)
3					Total Number of Dominant	2	(P)
4		<u> </u>			Species Across All Strata:	<u>2</u>	(B)
50% = <u>37.5</u> , 20% = <u>15</u>	<u>5</u>	<u>75</u>	= Total Cove	er	Percent of Dominant Specie	es <u>50</u>	(A/B)
Sapling/Shrub Stratur	n (Plot size: <u>5M</u>)				That Are OBL, FACW, or Fa	AC: <u>50</u>	(46)
Rubus spectabilis		<u>5</u>	<u>no</u>	FAC	Prevalence Index worksho	eet:	
2					Total % Cover	of: Multi	ply by:
3					OBL species	x1 =	
4					FACW species	x2 =	
5					FAC species	x3 =	
50% = 2.5, 20% = 1		<u>5</u>	= Total Cove	er	FACU species	x4 =	
Herb Stratum (Plot siz	ze: <u>2M</u>)				UPL species	x5 =	
1. Polystichum muni	<u>tum</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	Column Totals:	(A)	(B)
2					Prevaler	nce Index = B/A =	-
3					Hydrophytic Vegetation Ir	idicators:	
4					☐ 1 – Rapid Test for Hy	drophytic Vegetation	
5					2 - Dominance Test is	s >50%	
6					3 - Prevalence Index	is <u><</u> 3.0 ¹	
7						aptations ¹ (Provide supp	orting
8					data in Remarks o	r on a separate sheet)	
9					5 - Wetland Non-Vaso	cular Plants ¹	
10					☐ Problematic Hydrophy	ytic Vegetation ¹ (Explain)
11					11-4:	d	-4
50% = 2.5, 20% = 1		<u>5</u>	= Total Cove	er	Indicators of hydric soil and be present, unless disturbed		31
Woody Vine Stratum	(Plot size: <u>5M</u>)						
1. <u>Rubus armeniacu</u>	<u>s</u>	<u>85</u>	<u>yes</u>	<u>FACU</u>			
2. <u>Hedera helix</u>		<u>2</u>	<u>no</u>	<u>FACU</u>	Hydrophytic Vegetation	Yes 🗆	No 🛛
50% = <u>43.5</u> , 20% = <u>17</u>	<u>7.4</u>	<u>87</u>	= Total Cove	er	Present?		🚨
% Bare Ground in He	rb Stratum						
		solute coverage we	re not conside	red dominant.	The 1988 Region 9 National	Wetland Plant List and	1993 Supplement
were us	sed for this delineation.						

Depth M	atrix			Redox Feat						
nches) Color (mois	st) '	%	Color (mo	oist) %	Type ¹ Loc	² Texture	<u> </u>	Remarks		
<u>0-15</u> <u>10YR 3/</u>	<u>2</u> <u>1</u>	00				Gr Sa Lo	oam Primarily large q	uarry spalls		
	_		-							
	_					_	-			
	_		-			_				
	_	_								
	_		-				-			
										
ype: C= Concentration, D	=Depletion	—— ∩ RM=Re	educed Mati	rix CS=Covered or Co	ated Sand Grains	2l ocation: PL:	 =Pore Lining, M=Matrix			
ydric Soil Indicators: (A							cators for Problematic	Hydric Soils	3.	
Histosol (A1)				Sandy Redox (S5)			2 cm Muck (A10)	,		
Histic Epipedon (A2)				Stripped Matrix (S6)			Red Parent Material	(TF2)		
Black Histic (A3)				Loamy Mucky Minera	al (F1) (except MLR	A 1)	Very Shallow Dark S	urface (TF12)		
Hydrogen Sulfide (A4	.)			Loamy Gleyed Matri	x (F2)		Other (Explain in Re	marks)		
Depleted Below Dark	Surface (A	A11)		Depleted Matrix (F3)						
Thick Dark Surface (A	\12)			Redox Dark Surface	(F6)					
Sandy Mucky Minera	(S1)			Depleted Dark Surfa	ce (F7)		icators of hydrophytic ve vetland hydrology must			
Sandy Gleyed Matrix	(S4)			Redox Depressions	(F8)		inless disturbed or probl			
estrictive Layer (if prese	nt):									
ype:										
epth (inches):					i i yanc o	oils Present?	Yes		lo	\boxtimes
Remarks: Quarry spalls	associated	d with the	e retaining w	rall compose much of the	he substrate.					
	associated	d with the	e retaining w	rall compose much of the	he substrate.					
IYDROLOGY		d with the	e retaining w	rall compose much of the	he substrate.					
IYDROLOGY Vetland Hydrology Indica	utors:			·	he substrate.	Secor	ndary Indicators (2 or m	ore required)		
IYDROLOGY Vetland Hydrology Indica rimary Indicators (minimu	utors:			·			ndary Indicators (2 or mo Water-Stained Leaves (
YDROLOGY /etland Hydrology Indica rimary Indicators (minimu Surface Water (A1)	i tors: m of one re		check all tha	t apply)	es (B9)			(B9)		
IYDROLOGY Vetland Hydrology Indica rrimary Indicators (minimu Surface Water (A1) High Water Table (A	i tors: m of one re		check all tha	t apply) Water-Stained Leave	es (B9)		Water-Stained Leaves (B9)		
IYDROLOGY /etland Hydrology Indica rimary Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3)	i tors: m of one re		check all tha	t apply) Water-Stained Leave (except MLRA 1, 2,	es (B9) 4A , and 4B)		Water-Stained Leaves ((B9) B)		
YDROLOGY /etland Hydrology Indica rimary Indicators (minimu Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1)	i tors: m of one re		check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	es (B9) 4A, and 4B) s (B13)		Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I Drainage Patterns (B10	(B9) (B) (B) (B) (B) (B)	C9)	
IYDROLOGY /etland Hydrology Indicatrimary Indicators (minimus) Surface Water (A1) High Water Table (Assuration (A3)) Water Marks (B1) Sediment Deposits (B3)	i tors: m of one re		check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	es (B9) 4A, and 4B) s (B13) dor (C1)		Water-Stained Leaves (MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Table	B9) (C2) (C3)	C9)	
IYDROLOGY Vetland Hydrology Indicatrimary Indicators (minimu) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B	ntors: m of one re 2) 32)		check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Ae Geomorphic Position (D Shallow Aquitard (D3)	B9) (C2) (C3)	C9)	
IYDROLOGY Vetland Hydrology Indicatrimary Indicators (minimu) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5)	ntors: m of one re 2) 32)		check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduces Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Ae Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5)	B9) B) (C2) (C2) (C2) (C2) (C2)	C9)	
IYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Material Indicators (Mater	ators: m of one re 2) 32) 4)	quired; c	check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stresses	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Tabl Saturation Visible on Ac Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	B9) B) in the (C2) region of the properties of t	C9)	
IYDROLOGY Vetland Hydrology Indicators (minimumal programmer) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B2) Iron Deposits (B5) Surface Soil Cracks Inundation Visible or	ntors: m of one re 2) 32) 4) (B6) Aerial Ima	quired; c	check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduces Recent Iron Reduction	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Ae Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5)	B9) B) in the (C2) region of the properties of t	C9)	
HYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Male Indicators (Mal	ntors: m of one re 2) 32) 4) (B6) Aerial Ima	quired; c	check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductio Stunted or Stresses	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Tabl Saturation Visible on Ac Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	B9) B) in the (C2) region of the properties of t	C9)	
IYDROLOGY Vetland Hydrology Indicatrimary Indicators (minimu) Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated (ield Observations:	ators: m of one re 2) B2) 4) (B6) Aerial Ima	equired; c	check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduces Recent Iron Reduction Stunted or Stresses Other (Explain in Res	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Tabl Saturation Visible on Ac Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	B9) B) in the (C2) region of the properties of t	C9)	
WDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Matter Marks (Matter Matter M	ators: m of one re 2) B2) 4) (B6) Aerial Ima Concave Si	equired; c	check all that	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reductic Stunted or Stresses Other (Explain in Rei	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6 Plants (D1) (LRR A) marks)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Tabl Saturation Visible on Ac Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	B9) B) in the (C2) region of the properties of t	C9)	
IYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Maler Mater Table (All Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Surface Soil Cracks Inundation Visible or Sparsely Vegetated (indicators indicators in	ators: m of one re 2) B2) 4) (B6) Aerial Ima	equired; c	check all tha	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduces Recent Iron Reduction Stunted or Stresses Other (Explain in Res	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Tabl Saturation Visible on Ac Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	(B9) (B9) (B9) (B9) (B9) (B9) (B9) (B9)		
HYDROLOGY Vetland Hydrology Indicators (minimular and properties of the properties	ators: m of one re 2) B2) 4) (B6) Aerial Ima Concave Si	equired; c	check all that	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reductic Stunted or Stresses Other (Explain in Rei	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6 Plants (D1) (LRR A) marks)	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Tabl Saturation Visible on Ac Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	B9) B) in the (C2) region of the properties of t]
IYDROLOGY Vetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Mater Marks (Mater Mater Mat	ttors: m of one re 2) 32) 4) (B6) Aerial Ima Concave S Yes Yes Yes	equired; c	check all that	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reductic Stunted or Stresses Other (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) 7 surface	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Ae Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) Frost-Heave Hummock	(B9) (B9) (B9) (B9) (B9) (B9) (B9) (B9)		1
Wetland Hydrology Indicators (minimumary Indi	ttors: m of one re 2) 32) 4) (B6) Aerial Ima Concave S Yes Yes Yes	equired; c	check all that	t apply) Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reducer Recent Iron Reductic Stunted or Stresses Other (Explain in Rei Depth (inches): Depth (inches):	es (B9) 4A, and 4B) s (B13) dor (C1) res along Living Roof d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) 7 surface	s (C3)	Water-Stained Leaves ((MLRA 1, 2, 4A, and 4I) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Ae Geomorphic Position (D Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) Frost-Heave Hummock	(B9) (B9) (B9) (B9) (B9) (B9) (B9) (B9)		

Project Site: <u>L</u>	Lynnwood Link Extension			City/Cour	nty: ML Terrace/Snohomisl	n Sampling Date:	04/0	03/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	<u>WN</u>	/IT5-SP1
Investigator(s):	M. Maynard, C. Worsley				Section, Township, I	Range: <u>S29, T27N, F</u>	<u> 34E</u>	
Landform (hillslope, terra	ace, etc.):		Loc	cal relief (cond	eave, convex, none): none	!	Slope (%):	<u>1</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.8</u>	80006460900		Long: <u>-122.3153903060</u>	<u>10</u> Datu	m: <u>NAD8</u>	<u>3</u>
Soil Map Unit Name:	<u>Urban Land</u>				NWI	classification: PE	<u>M</u>	
Are climatic / hydrologic	conditions on the site typical for	or this time of	year?	Yes □	No 🗌 (If no, expla	ain in Remarks.)		
Are Vegetation \square ,	Soil □, or Hydrology	-	cantly disturbe		'Normal Circumstances" pres	ent? Y	′es ⊠	No 🗆
Are Vegetation □,	Soil □, or Hydrology	☐, natura	Illy problemati	c? (If ne	eeded, explain any answers in	n Remarks.)		
SUMMARY OF FIND	DINGS – Attach site map s	howing sar	mpling poir	nt locations	, transects, important fe	atures, etc.		
Hydrophytic Vegetation	Present?	Yes 🗵	I No □					
Hydric Soil Present?		Yes 🗵	I No □	Is the Sam		Y	′es ⊠	No 🗆
Wetland Hydrology Pres	sent?	Yes 🗵	No □					
Remarks: The sample	e plot is located in emergent	community i	in center of th	ne open area.				
VEGETATION - Use	scientific names of plant		Dominant	la dia atar	T			
Tree Stratum (Plot size:	: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksho	et:		
Populus tremuloides	<u>S</u>	<u>20</u>	<u>ves</u>	<u>FAC</u>	Number of Dominant Spec			(A)
2					That Are OBL, FACW, or F	AC: [™]		(7.1)
3					Total Number of Dominant	<u>3</u>		(B)
4					Species Across All Strata:	<u>-</u>		(-/
$50\% = \underline{10}, 20\% = \underline{4}$		<u>20</u>	= Total Cov	er	Percent of Dominant Speci		<u>00</u>	(A/B)
Sapling/Shrub Stratum (· —				That Are OBL, FACW, or F	AC:		
Lonicera involucrata	1	<u>5</u>	<u>no</u>	<u>FAC</u>	Prevalence Index worksh			
2. <u>Cornus sericea</u>		<u>2</u>	<u>no</u>	<u>FACW</u>	Total % Cover		lultiply by:	
3					OBL species		1 =	
4					FACW species		2 =	
5					FAC species	<u> </u>	3 =	_
50% = <u>3.5</u> , 20% = <u>1.4</u>		<u>7</u>	= Total Cov	er	FACU species		4 =	_
Herb Stratum (Plot size:	: <u>2M</u>)				UPL species	<u></u>	5 =	
1. Juncus effusus		<u>70</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	(A)	_	(B)
2. Phalaris arundinace	<u>:a</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>		nce Index = B/A =		
3					Hydrophytic Vegetation I			
4					1 – Rapid Test for Hy			
5					2 - Dominance Test i	s >50%		
6					☐ 3 - Prevalence Index	is <u><</u> 3.0 ¹		
7						aptations ¹ (Provide su		
8					l <u> </u>	or on a separate shee	1)	
9					5 - Wetland Non-Vas			
10					☐ Problematic Hydroph	ytic Vegetation ¹ (Expl	ain)	
11					¹ Indicators of hydric soil an	id wetland hydrology i	must	
50% = <u>60</u> , 20% = <u>24</u>		<u>120</u>	= Total Cov	er	be present, unless disturbe			
Woody Vine Stratum (Pl	lot size: <u>5M</u>)	_						
1. Rubus armeniacus		<u>2</u>	<u>no</u>	<u>FACU</u>	Hydrophytic			
2			_		Vegetation	Yes 🛛	No	
$50\% = \underline{1}, 20\% = \underline{0.4}$		<u>2</u>	= Total Cov	er	Present?			
% Bare Ground in Herb	·							
	ecies with 5% or less absolute and for this delineation.	coverage wer	re not conside	red dominant.	The 1988 Region 9 Nationa	Wetland Plant List a	nd 1993 St	upplement
were use	a for this defineation.							

SOIL Sampling Point: WMT5-SP1 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features (inches) Type¹ Texture Color (moist) % Color (moist) % Loc² Remarks 10YR 3/2 Sa Loam 0-4 <u>4-7</u> 10Y 4/1 <u>85</u> 10YR 4/6 <u>15</u> C M CI Loam 7-18 10Y 5/1 40 7.5YR 4/6 60 <u>C</u> Gr Sa Loam Μ very sandy ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) \boxtimes Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: **Hydric Soils Present?** \boxtimes No Depth (inches): Remarks: Inclusions in the 3rd layer (10YR 3/1 gravelly sandy loam). The two lower layers are very compacted. **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) П Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): \boxtimes Water Table Present? Yes No Depth (inches): 8 Saturation Present? \boxtimes Wetland Hydrology Present? Yes \boxtimes No Yes No Depth (inches): surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: There is standing water in adjacent micro-depressions.

Project Site:	Lynnwood Link	Extension_			City/Coun	ty: ML Terrace/S	nohomish S	ampling Date:	04/03	3/12	
Applicant/Owner:	Sound Transit					Sta	ate: <u>WA</u> S	ampling Point:	<u>WMT</u>	5-SP	2
Investigator(s):	M. Maynard, C.	Worsley				Section, To	wnship, Range:	S29, T27N, R4E			
Landform (hillslope, ter	rrace, etc.): s	<u>lope</u>		Loca	l relief (conc	ave, convex, none):	concave	Slop	e (%):	<u>40</u>	
Subregion (LRR):	<u>A</u>		Lat: 47.8	0008890100		Long: -122.315	554498100	Datum:	NAD83		
Soil Map Unit Name:	Urban Land						NWI classifi	ication: <u>Upland</u>			
Are climatic / hydrologi	c conditions on t	he site typical for	this time of y	ear? Y	es 🗆	No ☐ (If	no, explain in F	Remarks.)			
Are Vegetation □,	Soil □,	or Hydrology	☐, signific	antly disturbed	? Are "	Normal Circumstan	ces" present?	Yes	\boxtimes	No	
Are Vegetation □,	Soil □,	or Hydrology	□, natural	ly problematic?	? (If ne	eded, explain any a	nswers in Rema	arks.)			
SUMMARY OF FIN	DINGS – Attac	ch site map sh	owing san	npling point	locations,	transects, impo	rtant feature	s, etc.			
Hydrophytic Vegetation	Present?	-	Yes 🗆	No 🛛		-					
Hydric Soil Present?			Yes 🗆	No 🛛	Is the Samp			Yes		No	
Wetland Hydrology Pre	esent?		Yes 🗆		within a We	etiano ?					
		d on the southh	ound L5 off		o west port	hwest of the wetla	nd approxima	taly 25 fact south	net of a	Dou	nlae
fir.	ne piot is locate	u on the southb	ound 1-3 on	ranip ilii siop	e, west nort	ilwest of the wella	пи, арргохина	tery 25 reet soutw	;51 UI a	Dou	Jias
VEGETATION – Us	o scientific na	amos of plants									
Tree Stratum (Plot size		anies or plants	Absolute	Dominant	Indicator	Dominance Test	Workshoot:				
•	•		% Cover	Species?	Status 5.4.0	Dominance rest	WOIRSHEEL.				
1. Populus tremuloide			<u>70</u>	<u>ves</u>	FAC	Number of Domin That Are OBL, FA		<u>1</u>			(A)
2. <u>Pseudotsuga meni</u>	<u>zesii</u>		2	<u>no</u>	<u>FACU</u>	That Are Obl., I A	CVV, OI I AC.				
3. <u>Betula sp</u>			<u>8</u>	<u>no</u>	Ξ.	Total Number of E Species Across A		<u>3</u>			(B)
4						Species Acioss A	ii Stiata.				
50% = <u>40</u> , 20% = <u>16</u>			<u>80</u>	= Total Cover	•	Percent of Domina		<u>33</u>			(A/B)
Sapling/Shrub Stratum						That Are OBL, FA	•				, ,
1. Forsythia sp. (orna	<u>imental)</u>		<u>60</u>	<u>yes</u>	<u>NO</u>	Prevalence Index	worksheet:				
2. Prunus emerginata	a (sapling)		<u>8</u>	<u>no</u>	<u>FACU</u>	<u>Total</u>	% Cover of:	Multip	ly by:		
3						OBL species		x1 =		_	
4						FACW species		x2 =		_	
5						FAC species		x3 =		_	
50% = 34, 20% = 13.6			<u>68</u>	= Total Cover	-	FACU species		x4 =		_	
Herb Stratum (Plot size	e: <u>2M</u>)					UPL species		x5 =		_	
1						Column Totals:	(A)		(B)
2							Prevalence Inc	dex = B/A =			
3						Hydrophytic Veg	etation Indicat	ors:			
4.							est for Hydroph				
5							nce Test is >50%	, ,			
6.											
7.						0	ice Index is <3.0				
8.						4 - Morpholo	ogical Adaptatio emarks or on a	ns ¹ (Provide suppo separate sheet)	rting		
<u> </u>						l <u> </u>		. ,			
9							Non-Vascular F				
10						☐ Problematic	Hydrophytic Ve	egetation ¹ (Explain)			
11						¹ Indicators of hydr	ric soil and wetla	and hydrology must	r		
50% =, 20% = _	<u>_</u>			= Total Cover	•	be present, unless					
Woody Vine Stratum (
1. Rubus armeniacus	1		<u>50</u>	<u>yes</u>	<u>FACU</u>	Llyadus = book					
2						Hydrophytic Vegetation	Yes		No		\boxtimes
$50\% = \underline{25}$, $20\% = \underline{10}$			<u>50</u>	= Total Cover	-	Present?	103				-
% Bare Ground in Her	b Stratum 80										
Remarks: T	he 1988 Region	9 National Wetlar	nd Plant List	and 1993 Supp	olement were	used for this deline	eation.				

	Matrix	(Redox Feat	ures		=						
nches)	Color (moist)	9	6	Col	lor (mo	oist) %	Type ¹	Loc ²	Texture	_		Ren	narks		
<u>0-9</u>	10YR 3/3	<u>10</u>	<u>00</u>	-					Sa Loan	<u> </u>					
<u>9-18</u>	2.5Y 4/3	<u>10</u>	<u>00</u>	-					Gr Sa Loa	am ver	/ sandy				
				-											
				-							_				
		_		-						_					
				-											
				-											
				-											
		•				ix, CS=Covered or Co	ated Sand	I Grains. Lo	cation: PL=					3	
		cable to	all LF	RRs, ur		otherwise noted.)					Problemati	c Hyd	ric So	oils°:	
Histoso						Sandy Redox (S5)					ıck (A10)				
	pipedon (A2)					Stripped Matrix (S6)					ent Materia	` '	•		
	listic (A3)					Loamy Mucky Miner		cept MLRA 1)		=	allow Dark S			12)	
	en Sulfide (A4)					Loamy Gleyed Matri				Other (E	explain in Re	emarks	s)		
	ed Below Dark Sur	-	11)			Depleted Matrix (F3)									
	ark Surface (A12)					Redox Dark Surface	, ,		3 lo di a	otoro of b	ydrophytic v			ام م	
	Mucky Mineral (S					Depleted Dark Surfa	, ,				rology must				
	Gleyed Matrix (S4					Redox Depressions	(F8)		un	less distu	rbed or prob	olemat	ic.		
	ayer (if present):														
pe:												_	_		_
epth (inches	S):							Hydric Soils P	resent?		Yes			No	\boxtimes
emarks:															
emarks:	GY														
YDROLO	GY Irology Indicators	s:													
YDROLO			quired;	check	all tha	: apply)			Second	dary Indica	ators (2 or m	nore re	equire	d)	
YDROLO	rology Indicators		quired;	check	all tha	apply) Water-Stained Leave	es (B9)				ators (2 or m		equire	d)	
YDROLO etland Hyc imary Indic	Irology Indicators ators (minimum of		quired;	check			` ,	JB)	V	Vater-Stair		(B9)	equire	d)	
YDROLOGE etland Hyd imary Indic Surfac High W	Irology Indicators ators (minimum of e Water (A1)		quired;	check		Water-Stained Leave	` ,	ВВ)	U (Vater-Stair	ned Leaves	(B9)	equire	d)	
YDROLOGETIAND HYDE TEMPORE TO THE SURFACE HIGH WIGHT WITH SURFACE HIGH WITH SURFACE TO THE SURFA	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2)		quired;	check		Water-Stained Leave (except MLRA 1, 2,	4A, and 4	IB)	U (I	Vater-Stair MLRA 1, 2 Orainage P	ned Leaves 2, 4A, and 4	(B9) IB) 0)	<u>. </u>	d)	
YDROLOGE ET STATE OF THE STATE	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3)		quired;	check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A , and 4		V	Vater-Stain MLRA 1, 2 Orainage P Ory-Season	ned Leaves 2, 4A, and 4 atterns (B1)	(B9) IB) 0) ole (C2	2)	,	
YDROLO etland Hyd imary Indic Surfac High W Satura Water Sedim	Irology Indicators ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1)		quired;	check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate	4A , and 4 s (B13) dor (C1)		V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab	(B9) IB) 0) ole (C2 verial In	2)	,	
YDROLO etland Hyc imary Indic Surfac High W Satura Water Sedime	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		quired;	check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Od	4A, and 4 s (B13) dor (C1) res along L	Living Roots (C3)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab Visible on A	(B9) IB) 0) ole (C2 verial In	2)	,	
YDROLO etland Hyd imary Indic Surfac High W Satura Water Sedim Drift D	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		quired;	check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and 4 s (B13) dor (C1) res along L d Iron (C4)	Living Roots (C3)	V	Water-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq	ned Leaves 2, 4A, and 4 atterns (B10 n Water Tab Visible on A c Position (I	(B9) IB) 0) ble (C2 derial In	2)	,	
YDROLOGIC SURFACE Surface High W Satura Water Sedim Drift D Inno De	Irology Indicators ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) //at or Crust (B4)	one rec	quired;	check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce	4A, and 4 s (B13) dor (C1) res along L d Iron (C4)	Living Roots (C3)) d Soils (C6)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab Visible on A c Position (I uitard (D3)	(B9) IB) 0) ble (C2 verial In D2)	?) mage	,	
YDROLOGIC TENT OF THE PROPERTY	ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	one rec				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	Living Roots (C3)) d Soils (C6)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab Visible on A c Position (I uitard (D3)	(B9) (B9) (B) (C2) (C2) (C2) (C3) (C4) (C4) (C5) (C5) (C5) (C6) (C6) (C6)	2) mager	,	
YDROLO Tetland Hydro rimary Indic Surfac High W Satura Water Sedime Drift D Algal N Iron De Surfac Inunda	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6)	one rec	gery (B	37)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	Living Roots (C3)) d Soils (C6)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D	(B9) (B9) (B) (C2) (C2) (C2) (C3) (C4) (C4) (C5) (C5) (C5) (C6) (C6) (C6)	2) mager	,	
YDROLO etland Hyd imary Indic Surfac High W Satura Water Sedime Drift D Inon De Surfac	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) //at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae	one rec	gery (B	37)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	Living Roots (C3)) d Soils (C6)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D	(B9) (B9) (B) (C2) (C2) (C2) (C3) (C4) (C4) (C5) (C5) (C5) (C6) (C6) (C6)	2) mager	,	
YDROLOGETIAND HIGH	Irology Indicators ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) //at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Contrations:	one rec	gery (B	37)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	Living Roots (C3)) d Soils (C6)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D	(B9) (B9) (B) (C2) (C2) (C2) (C3) (C4) (C4) (C5) (C5) (C5) (C6) (C6) (C6)	2) mager	,	
YDROLOGETIAND HIGH WATER AND	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con rations:	rial Imaç	gery (B	37) (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Res	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	Living Roots (C3)) d Soils (C6)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Shallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B10 in Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D	(B9) (B9) (B) (C2) (C2) (C2) (C3) (C4) (C4) (C5) (C5) (C5) (C6) (C6) (C6)	2) mager	,	
YDROLOGETIAND HIGH WATER AND	Irology Indicators ators (minimum of e Water (A1) / ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) //at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Con rations: er Present? Present?	rial Imaç cave Su	gery (Burface (37) (B8) No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphel Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	Living Roots (C3)) d Soils (C6) I) (LRR A)	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Ghallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D e Hummock	(B9) (B9) (B) (C2) (C2) (C2) (C3) (C4) (C4) (C5) (C5) (C5) (C6) (C6) (C6)	.mager	,	0
YDROLOGE Etland Hyde imary Indice I Surface I Sedim-I Surface I Inundar I Sparse I Inundar	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Contations: er Present? Present? esent?	rial Imaç cave Su Yes Yes Yes	ggery (B	87) (B8) No No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along l d Iron (C4) on in Tilled Plants (D1) marks)	Living Roots (C3)) d Soils (C6) l) (LRR A) We	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Ghallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D e Hummock	(B9) (B9) (B9) (B9) (C2) (Acerial Ir (D2) (B6) (LR (C3)	.mager	ry (C9)	0
YDROLOGIC STATE OF THE PROCESS OF TH	Irology Indicators ators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) /at or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ely Vegetated Contations: er Present? Present? esent?	rial Imaç cave Su Yes Yes Yes	ggery (B	87) (B8) No No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Octo Oxidized Rhizosphet Presence of Reducet Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along l d Iron (C4) on in Tilled Plants (D1) marks)	Living Roots (C3)) d Soils (C6) l) (LRR A) We	V	Vater-Stain MLRA 1, 2 Drainage P Dry-Season Saturation Geomorphi Ghallow Aq FAC-Neutra Raised Ant	ned Leaves 2, 4A, and 4 atterns (B1) n Water Tab Visible on A c Position (I uitard (D3) al Test (D5) Mounds (D e Hummock	(B9) (B9) (B9) (B9) (C2) (Acerial Ir (D2) (B6) (LR (C3)	.mager	ry (C9)	•

Project Site:	Lynnwood Link Extension			City/Cour	ty: ML Terrace/Snohomish	Sampling Date:	4/3/12
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WMT6-SP1
Investigator(s):	M. Maynard, C. Worsley				Section, Township, F	Range: <u>S29, T27N, R</u> 4	<u>4E</u>
Landform (hillslope, te	rrace, etc.):		Loc	al relief (conc	ave, convex, none): conca	<u>ive</u> S	lope (%): <u>5</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.8</u>	80057207800		Long: -122.3157202210	<u>0</u> Datum	n: <u>NAD83</u>
Soil Map Unit Name:	<u>Urban Land</u>				NWI	classification: PFO	<u> </u>
Are climatic / hydrolog	ic conditions on the site typical for	r this time of	year?	Yes □	No 🔲 (If no, expla	in in Remarks.)	
Are Vegetation \square ,	Soil □, or Hydrology	☐, signific	cantly disturbe	d? Are "	Normal Circumstances" prese	ent? Ye	es 🛛 No 🗆
Are Vegetation □,	Soil □, or Hydrology	☐, natura	lly problemation	? (If ne	eded, explain any answers in	Remarks.)	
SUMMARY OF FIN	IDINGS – Attach site map s	howing sar	mpling poin	t locations,	transects, important fea	atures, etc.	
Hydrophytic Vegetatio	n Present?	Yes 🛛	No 🗆				
Hydric Soil Present?		Yes 🛛	No □	Is the Samp		Ye	es 🛛 No 🗌
Wetland Hydrology Pro	esent?	Yes 🛛	No □				
Remarks: Sample p	olot is located approximately 60) feet east of	ROW fence r	ear City Hall	. Centrally in wetland, appr	oximately 200 feet no	ortheast of City
Hall.							
VEGETATION – Us	se scientific names of plant						
Tree Stratum (Plot siz	e: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator <u>Status</u>	Dominance Test Workshe	et:	
1. Alnus rubra		<u>70</u>	<u>ves</u>	FAC	Number of Dominant Speci	es _	(4)
2. <u>Salix lucida</u>		<u>35</u>	<u>ves</u>	<u>FACW</u>	That Are OBL, FACW, or F.		(A)
3					Total Number of Dominant	6	(B)
4					Species Across All Strata:	<u>6</u>	(b)
50% = <u>52.5</u> , 20% = <u>21</u>	<u>l</u>	<u>105</u>	= Total Cove	er	Percent of Dominant Specie		(A/B)
Sapling/Shrub Stratum	n (Plot size: <u>5M</u>)				That Are OBL, FACW, or F.	AC:	(775)
Rubus spectabilis		<u>30</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index workshop	eet:	
2					Total % Cover	<u>of:</u> <u>Mu</u>	<u>ıltiply by:</u>
3					OBL species	x1 :	' <u></u>
4					FACW species	x2	<u></u>
5					FAC species	x3 :	=
50% = 15, 20% = 6		<u>30</u>	= Total Cove	er	FACU species	x4	=
Herb Stratum (Plot siz	re: <u>2M</u>)				UPL species	x5	=
Equisetum telmate	<u>eia</u>	<u>55</u>	<u>yes</u>	<u>FACW</u>	Column Totals:	(A)	(B)
2. <u>Dryopteris expans</u>	<u>sa</u>	<u>15</u>	<u>no</u>	<u>FACW</u>	Prevaler	nce Index = B/A =	<u> </u>
3. Athyrium filix-femi.		<u>20</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation II		
4. Epilobium ciliatum	1	<u>2</u>	<u>no</u>	<u>FACW</u>	1 – Rapid Test for Hy		
5					2 - Dominance Test is	\$ >50%	
6					☐ 3 - Prevalence Index	is <u><</u> 3.0 ¹	
7						aptations ¹ (Provide sup	
8					_	r on a separate sheet)	
9					5 - Wetland Non-Vaso		
10					Problematic Hydrophy	ytic Vegetation ¹ (Expla	in)
11					¹ Indicators of hydric soil and	d wetland hydrology m	ust
50% = <u>46</u> , 20% = <u>18.4</u>	=	<u>92</u>	= Total Cove	er	be present, unless disturbe		401
Woody Vine Stratum (· —						
1. Rubus armeniacus	<u>S</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic		
2					Vegetation	Yes 🛛	No 🗆
50% = 5, $20% = 2$		<u>10</u>	= Total Cove	er	Present?		
% Bare Ground in Her	b Stratum 50						
Remarks: T	he 1988 Region 9 National Wetla	and Plant List	and 1993 Sup	oplement were	e used for this delineation.		

	Matrix				Redox Feat	ures		_					
nches)	Color (moist)	%	Colo	r (mois	t) %	Type ¹	Loc ²	Texture		R	temarks	;	
<u>0-7</u>	10YR 2/1	<u>100</u>	_					Si Loam	high organ	nics .			
<u>7-18</u>	10G 5/1	<u>100</u>	_					Gr Sa Loam	very sand	<u>Y</u>			
			_										
			_										
			_										
			_										
			_										
			_										
					, CS=Covered or Coa	ated Sand	Grains. ² Lo	cation: PL=Poi				3	
	licators: (Applica	able to all I		_				_	ors for Proble	•	ydric S	oils":	
Histosol				_	Sandy Redox (S5)			_	cm Muck (A1	-			
	ipedon (A2)				Stripped Matrix (S6)			_	Red Parent Ma	•	,	- \	
Black His				_	Loamy Mucky Minera		cept MLRA 1)	_	ery Shallow [-12)	
	Sulfide (A4)	(1.44)			Loamy Gleyed Matrix	(F2)			Other (Explain	in Rema	arks)		
	Below Dark Surfa	ice (A11)			Depleted Matrix (F3)								
	rk Surface (A12)			_	Redox Dark Surface	` '		3Indicate	ors of hydroph	vtic voc	station a	nd	
_	ucky Mineral (S1)			_	Depleted Dark Surface	` '			nd hydrology				
•	eyed Matrix (S4)				Redox Depressions ((F8) T		unles	s disturbed o	r problem	natic.		
	yer (if present):												
/pe:	· 						Hydric Soils P	t?		Yes	\boxtimes	No	
epth (inches):							riyano oons i	i cociit i		103		110	
emarks:													
	Y												
YDROLOG	Y Dlogy Indicators:												
YDROLOG /etland Hydro			d; check a	II that a	apply)			Secondar	y Indicators (2	2 or more	e require	ed)	
YDROLOG letland Hydro	ology Indicators:			_	apply) Water-Stained Leave	es (B9)			y Indicators (2 er-Stained Le			ed)	
YDROLOG fetland Hydro rimary Indicat	ology Indicators: ors (minimum of o					. ,	B)	☐ Wat	,	aves (B9		ed)	
YDROLOG etland Hydro rimary Indicat] Surface '] High Wa	ology Indicators: ors (minimum of o Water (A1) ter Table (A2)		•		Water-Stained Leave	. ,	В)	☐ Wat	er-Stained Le	aves (B9 and 4B)		ed)	
YDROLOG etland Hydro rimary Indicat Surface 1 High Wa Saturatio	ology Indicators: ors (minimum of o Water (A1) ter Table (A2)		•		Water-Stained Leave	4A, and 4	В)	☐ Wat	er-Stained Le	aves (B9 and 4B) s (B10)	9)	ed)	
YDROLOG etland Hydro rimary Indicat Surface High Wa Saturatic Water M	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3)				Water-Stained Leave (except MLRA 1, 2, 4 Salt Crust (B11)	4A , and 4	В)	☐ Wat (ML ☐ Drai	er-Stained Le RA 1, 2, 4A, a nage Patterns	aves (B9 and 4B) s (B10) er Table ((C2)	,	
YDROLOG etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)				Water-Stained Leave (except MLRA 1, 2, 4 Salt Crust (B11) Aquatic Invertebrates	4A, and 4 s (B13) for (C1)		☐ Wat (ML ☐ Drai ☐ Dry- ☐ Satu	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate	aves (B9 and 4B) s (B10) er Table ((C2)	,	
YDROLOG retland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)				Water-Stained Leave (except MLRA 1, 2, 4 Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od	4A, and 4 s (B13) for (C1) es along L	iving Roots (C3)	☐ Wat (ML ☐ Drai ☐ Dry- ☐ Satu ☐ Geo	er-Stained Le RA 1, 2, 4A, a Inage Patterns Season Wate uration Visible	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2)	(C2)	,	
YDROLOG Vetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3)				Water-Stained Leave (except MLRA 1, 2, 4 Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere	4A, and 4 s (B13) for (C1) es along L d Iron (C4)	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate uration Visible morphic Posi	and 4B) s (B10) er Table (e on Aeria tion (D2) (D3)	(C2)	,	
YDR OLOG letland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) t or Crust (B4)				Water-Stained Leave (except MLRA 1, 2, 4 Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced	4A, and 4 s (B13) for (C1) es along L d Iron (C4) on in Tilled	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate uration Visible emorphic Posi Ilow Aquitard	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5)	(C2)	ery (C9)	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	ors (minimum of owner (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	ne required			Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reduction	s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha FAC	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate uration Visible morphic Posi llow Aquitard c-Neutral Test	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) Il Image	ery (C9)	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) of Deposits (B2) oosits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	ne required	(B7)		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reduction Stunted or Stresses F	s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha FAC	rer-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate aration Visible amorphic Posi Illow Aquitard C-Neutral Test sed Ant Mount	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) Il Image	ery (C9)	
YDROLOG /etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely	ology Indicators: ors (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria	ne required	(B7)		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reduction Stunted or Stresses F	s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha FAC	rer-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate aration Visible amorphic Posi Illow Aquitard C-Neutral Test sed Ant Mount	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) Il Image	ery (C9)	
YDROLOG //etland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely feld Observation	ology Indicators: ors (minimum of orwater (A1) ter Table (A2) on (A3) arks (B1) ot Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria of Vegetated Concations:	ne required	(B7)		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reduction Stunted or Stresses F	s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha FAC	rer-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate aration Visible amorphic Posi Illow Aquitard C-Neutral Test sed Ant Mount	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) Il Image	ery (C9)	
YDROLOG letland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely eld Observat urface Water	plogy Indicators: ors (minimum of orwater (A1) ter Table (A2) on (A3) arks (B1) of Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Concations: Present?	al Imagery ((B7) e (B8)		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphero Presence of Reduced Recent Iron Reduction Stunted or Stresses Fother (Explain in Rer	s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3)	Wat (ML Drai Dry- Satu Geo Sha FAC	rer-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate aration Visible amorphic Posi Illow Aquitard C-Neutral Test sed Ant Mount	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) Il Image	ery (C9)	
IYDROLOG /etland Hydro rimary Indicat Surface ' High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely ield Observat urface Water //ater Table Pr aturation Pres	plogy Indicators: ors (minimum of orwater (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Concations: Present? yeent? yeent?	al Imagery (ave Surface	(B7) ∋ (B8) No		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reductio Stunted or Stresses F Other (Explain in Rer Depth (inches):	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1 marks)	iving Roots (C3) Soils (C6)) (LRR A)	Wat (ML Drai Dry- Satu Geo Sha FAC	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate uration Visible morphic Posi Illow AquitardNeutral Test sed Ant Moun- st-Heave Hum	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) Il Image	ery (C9)	No
WDROLOG Vetland Hydro rimary Indicat Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely ield Observat urface Water Vater Table Praturation Pres ncludes capilli	plogy Indicators: ors (minimum of orwater (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Concations: Present? esent? your fringe	al Imagery (ave Surface es es ses ses ses ses ses ses	(B7) ∋ (B8) No No No		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reductio Stunted or Stresses F Other (Explain in Rer Depth (inches): Depth (inches):	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1 marks) 13 surface	Soils (C6)) (LRR A) Wei	□ Wat (ML □ Drai □ Dry- □ Satu □ Geo □ Sha □ FAC □ Rais □ Fros	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate uration Visible morphic Posi Illow AquitardNeutral Test sed Ant Moun- st-Heave Hum	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) al Image	ery (C9)	No
Surface Surface Surface Surface Surface Surface Surface Surface Inundation Sparsely ield Observator Vater Table Protestaturation Presencludes capilla	plogy Indicators: ors (minimum of orwater (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Concations: Present? esent? your fringe	al Imagery (ave Surface es es ses ses ses ses ses ses	(B7) ∋ (B8) No No No		Water-Stained Leave (except MLRA 1, 2, 4) Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizosphere Presence of Reduced Recent Iron Reductio Stunted or Stresses F Other (Explain in Rer Depth (inches): Depth (inches):	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1 marks) 13 surface	Soils (C6)) (LRR A) Wei	□ Wat (ML □ Drai □ Dry- □ Satu □ Geo □ Sha □ FAC □ Rais □ Fros	er-Stained Le RA 1, 2, 4A, a nage Patterns Season Wate uration Visible morphic Posi Illow AquitardNeutral Test sed Ant Moun- st-Heave Hum	aves (B9 and 4B) s (B10) er Table (e on Aeria tion (D2) (D3) t (D5) ds (D6) ((C2) al Image	ery (C9)	No

Project Site:	Lynnwood Link Extension			City/Cour	nty: ML Terrace/Snohomish	Sampling Date:	<u>4/3/12</u>
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WMT6-SP2
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Rar	nge: <u>\$29, 27N, R4E</u>	
Landform (hillslope, te	rrace, etc.):		Loca	al relief (conc	eave, convex, none): none	Slope	e (%): <u>8</u>
Subregion (LRR):	<u>A</u>	Lat: <u>47.8</u>	0053681300		Long: <u>-122.31562003700</u>	Datum: N	NAD83
Soil Map Unit Name:	<u>Urban Land</u>				NWI cla	ssification: <u>Upland</u>	
Are climatic / hydrolog	ic conditions on the site typical for	r this time of	year? Y	es 🗆	No 🗌 (If no, explain	in Remarks.)	
Are Vegetation ☐,	, , ,	_	antly disturbed		'Normal Circumstances" present	t? Yes	⊠ No □
Are Vegetation ☐,	, Soil □, or Hydrology	☐, natural	ly problematic	? (If ne	eeded, explain any answers in R	emarks.)	
SHMMADY OF FIN	IDINGS – Attach site map sl	howing sar	nnling noint	locations	transacts important foats	uros oto	
Hydrophytic Vegetatio	•	Yes		iocalions,	transects, important reatt	ires, etc.	
Hydric Soil Present?	II Fleseil!	Yes 🗆		Is the Samp		Yes	□ No ⊠
Wetland Hydrology Pro	acant?	Yes 🗆		within a We	tland?	163	
				M 20 f			
Remarks: The samp	ple plot is located approximatel	y 30 feet eas	st of WM16-SF	1 and 30 fee	at west of the I-5 off-ramp on a	i "ledge" of the fill slop	oe.
VEGETATION - Us	se scientific names of plant	s					
Tree Stratum (Plot siz	·	Absolute	Dominant	Indicator	Dominance Test Worksheet	:	
1. Alnus rubra	,	<u>% Cover</u> 80	<u>Species?</u> <u>yes</u>	Status FAC	North and Danis and Consider		
Pseudotsuga men	nzesii	<u>5</u>	no no	FACU	Number of Dominant Species That Are OBL, FACW, or FAC		(A)
3	20011	<u>v</u>	110	<u>17100</u>	Total Number of Dominant		
4.					Species Across All Strata:	<u>2</u>	(B)
50% = <u>42.5</u> , 20% = <u>17</u>	7	<u>85</u>	= Total Cove		Percent of Dominant Species		
Sapling/Shrub Stratun					That Are OBL, FACW, or FAC		(A/B)
Rubus spectabilis		<u>5</u>	no	FAC	Prevalence Index workshee	 t:	
2		<u> </u>			Total % Cover of	: Multiply	<u>y by:</u>
3.					OBL species	x1 =	
4					FACW species	x2 =	
5					FAC species	x3 =	
50% = <u>2.5</u> , 20% = <u>1</u>		<u>5</u>	= Total Cove	r	FACU species	x4 =	
Herb Stratum (Plot siz	ze: <u>2M</u>)				UPL species	x5 =	
1	•				Column Totals:	_ (A)	(B)
2			<u> </u>			e Index = B/A =	(
3					Hydrophytic Vegetation Indi		_
4.					☐ 1 – Rapid Test for Hydro		
5					2 - Dominance Test is >	· ·	
6				' <u></u> '	3 - Prevalence Index is	~3 0 ¹	
7.					4 Marphalagical Adapt	_	tina
8.					data in Remarks or o		iing
9			<u> </u>		5 - Wetland Non-Vascul	ar Plants ¹	
10.				· <u></u>	☐ Problematic Hydrophytic	Vegetation ¹ (Explain)	
11			<u> </u>			, regetation (Explain)	
50% =, 20% =			= Total Cove	 r	¹ Indicators of hydric soil and v		
Woody Vine Stratum (be present, unless disturbed of	or problematic.	
1. Rubus armeniacus		<u>60</u>	<u>yes</u>	FACU			
2.	-	_			Hydrophytic		
50% = <u>30</u> , 20% = <u>12</u>		60	= Total Cove	 r	"	Yes 🗌	No 🛚
% Bare Ground in Her	rh Stratum 80	_			Present?		
	Species with 5% or less absolute of	coverage wer	e not consider	ad dominant	The 1988 Pegion 9 National M	/etland Plant List and 10	003 Supplement
	sed for this delineation.	overage wer	e not consider	sa aominant.	The 1900 Region 3 National W	eliana i iant List and 13	190 Supplement
l							

Depth I	/latrix				Redox Feat	ures							
nches) Color (mo	ist)	%	Color	(moist)) %	Type ¹	Loc ²	Texture			Remark	S	
<u>0-5</u> <u>10YR 2</u>	<u>/2</u>	100						<u>Loam</u>	<u>trash i</u>	n layer			
<u>5-18</u> <u>2.5Y 5</u>	<u>3</u>	<u>100</u>						Gr Sa Loa	am very sa	andy, very	compac	ted at 12	inches
	· <u>-</u>												
	-												
			_										
	· <u>-</u>		_										
			_										
ype: C= Concentration,	Depletio	 n BM-	— Paducad	Matriy	CS-Covered or Co	ated Sand G		cation: PI =	Pore Lining,	M-Matrix			
/dric Soil Indicators: (/						ated Sand C	Jianis. Lo		ators for Pro		Hydric	Soils ³ :	
Histosol (A1)			Ε	_	Sandy Redox (S5)				2 cm Muck		,		
Histosol (A1) Histic Epipedon (A2)				_	Stripped Matrix (S6)				Red Paren		(TF2)		
Black Histic (A3)				_	oamy Mucky Miner	al (F1) (exc e	ept MLRA 1)		Very Shallo		` '	F12)	
] Hydrogen Sulfide (A	4)			_	.oamy Gleyed Matri		,		Other (Exp		•	,	
Depleted Below Dar	-	A11)		_	Depleted Matrix (F3)	` '			, ,		,		
Thick Dark Surface	A12)] R	Redox Dark Surface	(F6)							
Sandy Mucky Miner	al (S1)] D	Depleted Dark Surfa	ce (F7)			ators of hydr				
Sandy Gleyed Matri	k (S4)] R	Redox Depressions	(F8)			etland hydrol less disturbe			nt,	
estrictive Layer (if pres	ent):									-			
/pe:													
epth (inches):							Hydric Soils Pr	esent?		Yes		No	\boxtimes
emarks:													
YDROLOGY													
YDROLOGY /etland Hydrology Indic													
IYDROLOGY Vetland Hydrology Indic rimary Indicators (minim		equired;		_					dary Indicator	-		red)	
YDROLOGY Vetland Hydrology Indic rimary Indicators (minimi Surface Water (A1)	ım of one r	equired;		v	Vater-Stained Leave	` '		□ V	Vater-Stained	d Leaves (B9)	red)	
YDROLOGY letland Hydrology Indic rimary Indicators (minim] Surface Water (A1)] High Water Table (A	ım of one r	equired;	[Vater-Stained Leave	` '	· · · · · · · · · · · · · · · · · · ·	U (I	Vater-Stained	Leaves (B9)	red)	
YDROLOGY Vetland Hydrology Indictionary Indicators (minimal) Surface Water (A1) High Water Table (A1) Saturation (A3)	ım of one r	equired;]	□ v (e	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11)	4A, and 4B)	V	Vater-Stained WLRA 1, 2, 4 Orainage Patt	Leaves (A, and 4E erns (B10)	B9) B)	red)	
YDROLOGY Yetland Hydrology Indiction Timary Indicators (minimum) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1)	um of one re	equired;]	W (e S	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) equatic Invertebrates	4A , and 4B)	V (I) 	Vater-Stained WLRA 1, 2, 4 Drainage Patt Dry-Season W	d Leaves (A, and 4E erns (B10) /ater Tabl	B9) B) c (C2)		
YDROLOGY Tetland Hydrology Indiction of the state of the	um of one re	equired;]]]	□ V (€	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) equatic Invertebrates Hydrogen Sulfide Oc	4A, and 4B s (B13) dor (C1)			Water-Stained MLRA 1, 2, 4 Drainage Patt Dry-Season W saturation Vis	d Leaves (A, and 4E erns (B10) Vater Tablible on Ae	B9) B) (C2) Final Image		
YDROLOGY Vetland Hydrology Indictionary Indicators (minimal) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	um of one ro	equired;]]]]	V	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and 4B s (B13) dor (C1) res along Liv			Water-Stained WLRA 1, 2, 4 Prainage Patt Pry-Season Water Visaturation Visaturation Fermion Fermion Visaturation Fermion Fermion Fermion Fermion Visaturation Fermion Fermion Fermion Fermion Fermion Fermion Fermion Fermi	Leaves (A., and 4E erns (B10) Vater Tablible on Ae Position (D	B9) B) (C2) Final Image		
YDROLOGY Vetland Hydrology Indictionary Indicators (minimal) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (um of one ro	equired;]]]]	W (4 S S A H C C P	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dxidized Rhizospher Presence of Reduce	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4)	ving Roots (C3)	V	Water-Stained WLRA 1, 2, 4 Prainage Patt Pry-Season Waturation Vis Geomorphic F Shallow Aquit	d Leaves (A, and 4E erns (B10) Vater Tablible on Ae Position (D ard (D3)	B9) B) (C2) Final Image		
WDROLOGY Vetland Hydrology Indictionary Indicators (minimal) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (B5)	m of one ro (B2)	equired;]]]]]	W (4 S S A C C P R R R R R R R R R	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S	ving Roots (C3)	V	Vater-Stained WLRA 1, 2, 4 Prainage Patt Pry-Season W Esturation Visible Geomorphic F Challow Aquit. AC-Neutral	d Leaves (AA, and 4E erns (B10) Vater Tabl ible on Ae Position (D ard (D3) Fest (D5)	B9) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	ery (C9)	
YDROLOGY /etland Hydrology Indic rimary Indicators (minimi Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks	(B2) (B6)]]]]]]	W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dxidized Rhizospher Presence of Reduce	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1)	ving Roots (C3)	V	Water-Stained WLRA 1, 2, 4 Prainage Patt Pry-Season Waturation Vis Geomorphic F Shallow Aquit	d Leaves (AA, and 4E erns (B10) Vater Tabl ible on Ae Position (D ard (D3) Test (D5) bounds (D6	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d	ery (C9)	
YDROLOGY Tetland Hydrology Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (Management Papers) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Indicators (Management Papers) Indicators (Management Papers) Surface Soil Cracks (Indicators (Management Papers)	(B2) (B6) (A2) (B6) (A2)	agery (E	[W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) equatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1)	ving Roots (C3)	V	Vater-Stained MLRA 1, 2, 4 Drainage Patt Dry-Season W Eaturation Vision Geomorphic F Challow Aquit AC-Neutral	d Leaves (AA, and 4E erns (B10) Vater Tabl ible on Ae Position (D ard (D3) Test (D5) bounds (D6	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d	ery (C9)	
YDROLOGY Vetland Hydrology Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (Mater Table (Mat	(B2) (B6) (A2) (B6) (A2)	agery (E	[W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) equatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1)	ving Roots (C3)	V	Vater-Stained MLRA 1, 2, 4 Drainage Patt Dry-Season W Eaturation Vision Geomorphic F Challow Aquit AC-Neutral	d Leaves (AA, and 4E erns (B10) Vater Tabl ible on Ae Position (D ard (D3) Test (D5) bounds (D6	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d	ery (C9)	
YDROLOGY Vetland Hydrology Indictionary Indicators (minimal) Surface Water (A1) High Water Table (A2) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (B2) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated	(B2) (B6) (A2) (B6) (A2)	agery (E	[W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) equatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1)	ving Roots (C3)	V	Vater-Stained MLRA 1, 2, 4 Drainage Patt Dry-Season W Eaturation Vision Geomorphic F Challow Aquit AC-Neutral	d Leaves (AA, and 4E erns (B10) Vater Tabl ible on Ae Position (D ard (D3) Test (D5) bounds (D6	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d	ery (C9)	
YDROLOGY Vetland Hydrology Indictionary Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (minimally Indicators (Mater Marks (Mater Marks (Mater Marks (Mater Marks (Mater Marks (Mater Mater Mat	(B2) (B6) n Aerial Im. Concave S	agery (E Surface	[[[[[[[[[[[[[[[[[[[W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Dixidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Res	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1)	ving Roots (C3)	V	Vater-Stained MLRA 1, 2, 4 Drainage Patt Dry-Season W Eaturation Vision Geomorphic F Challow Aquit AC-Neutral	d Leaves (AA, and 4E erns (B10) Vater Tabl ible on Ae Position (D ard (D3) Test (D5) bounds (D6	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d	ery (C9)	
High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of	(B2) (B6) n Aerial Im. Concave S	agery (E Surface	[[[[[[[[[[[[[[[[[[[W ((Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Reduction Comments of the	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1)	ving Roots (C3) Soils (C6) (LRR A)	V	Vater-Stained MLRA 1, 2, 4 Drainage Patt Dry-Season W Eaturation Vision Geomorphic F Challow Aquit AC-Neutral	d Leaves (A, and 4E erns (B10) / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6 Hummocks	B9) (a) (b) (c) (c) (c) (d) (d) (d) (d) (d	ery (C9)	No
YDROLOGY Vetland Hydrology Indicators (minimary Indicators (Mater Table (Mater Table Present? Indicators (minimary	(B2) (B6) n Aerial Im Concave S Yes Yes Yes	agery (E	[[[[[[[[[[[[[[[[[[[W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates dydrogen Sulfide Oc Dixidized Rhizospher Presence of Reduces Recent Iron Reductic Stunted or Stresses Other (Explain in Rei Depth (inches): Depth (inches):	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1) marks)	ving Roots (C3) Soils (C6) (LRR A) Wet	V	Vater-Stained WLRA 1, 2, 4 Orainage Patt Ory-Season W Saturation Vis Seomorphic F Shallow Aquit AC-Neutral Caised Ant M Trost-Heave F	d Leaves (A, and 4E erns (B10) / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6 Hummocks	B9) (C2) (C2) (C3) (C4) (C5) (C4) (C5) (C6) (C7)	ery (C9)	
WDROLOGY Vetland Hydrology Indic rimary Indicators (minim Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Inon Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated ield Observations: urface Water Present? Vater Table Present?	(B2) (B6) n Aerial Im Concave S Yes Yes Yes	agery (E	[[[[[[[[[[[[[[[[[[[W	Vater-Stained Leave except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates dydrogen Sulfide Oc Dixidized Rhizospher Presence of Reduces Recent Iron Reductic Stunted or Stresses Other (Explain in Rei Depth (inches): Depth (inches):	4A, and 4B s (B13) dor (C1) res along Liv d Iron (C4) on in Tilled S Plants (D1) marks)	ving Roots (C3) Soils (C6) (LRR A) Wet	V	Vater-Stained WLRA 1, 2, 4 Orainage Patt Ory-Season W Saturation Vis Seomorphic F Shallow Aquit AC-Neutral Caised Ant M Trost-Heave F	d Leaves (A, and 4E erns (B10) / ater Tabl ible on Ae Position (D ard (D3) Fest (D5) bunds (D6 Hummocks	B9) (C2) (C2) (C3) (C4) (C5) (C4) (C5) (C6) (C7)	ery (C9)	

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: ML Terrace/Snohomish Sampling Date:	<u>4/3/12</u>
Applicant/Owner: Sound Transit				State: WA Sampling Point:	WMT7-SP1
Investigator(s): M. Maynard, C. Worsley				Section, Township, Range: S28, T27N, I	<u> 24E</u>
Landform (hillslope, terrace, etc.):		Loca	l relief (conc	ave, convex, none): none	Slope (%): 1
Subregion (LRR): A	Lat: 47.8	0279636900		Long: -122.31334645800 Datu	m: <u>NAD83</u>
Soil Map Unit Name: <u>Urban Land</u>				NWI classification: PF	<u></u>
Are climatic / hydrologic conditions on the site typical for	this time of y	ear? Ye	es 🗆	No ☐ (If no, explain in Remarks.)	_
	_	antly disturbed	? Are "		′es ⊠ No □
	_	ly problematic?		eded, explain any answers in Remarks.)	
	_,	,,	,	,.,.,	
SUMMARY OF FINDINGS – Attach site map sh	nowing san	npling point	locations,	transects, important features, etc.	
Hydrophytic Vegetation Present?	Yes 🛚	No 🗆			
Hydric Soil Present?	Yes 🛛	No 🗆	Is the Samp within a We		′es ⊠ No 🗆
Wetland Hydrology Present?	Yes 🛛	No 🗆			
Remarks: The sample plot is located on east side of	of the wetlan	d, approximat	ely 5 feet so	outheast of the right-of-way fence.	
p. p		., ., .	,		
VEGETATION – Use scientific names of plants					
<u>Tree Stratum</u> (Plot size: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. Alnus rubra	30	<u>yes</u>	FAC	Number of Dominant Species	(4)
2. Acer macrophyllum (overhanging from upland)	<u>75</u>	<u>n/a*</u>	<u>FACU</u>	That Are OBL, FACW, or FAC:	(A)
3. Sorbus aucuparia (overhanging from upland)	<u>20</u>	<u>n/a*</u>	NL (UPL)	Total Number of Dominant	(5)
4. Prunus emarginata (overhanging from upland)	<u>10</u>	<u>n/a*</u>	FACU	Species Across All Strata:	(B)
50% = <u>15</u> , 20% = <u>6</u>	<u>30</u>	= Total Cover		Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC:	<u>5</u> (A/B)
1. Rubus spectabilis	<u>75</u>	<u>yes</u>	FAC	Prevalence Index worksheet:	
2. Lonicera involucrata	40	yes	FAC		fultiply by:
3		1			1 =
4.				· ——	2 =
5				•	3 =
50% = <u>57.5</u> , 20% = <u>23</u>	<u>115</u>	= Total Cover			4 =
	113	= Total Cover		· —	
Herb Stratum (Plot size: 2M)				· —	5 =
1				Column Totals:(A)	(B)
2				Prevalence Index = B/A =	_
3				Hydrophytic Vegetation Indicators:	
4				☐ 1 – Rapid Test for Hydrophytic Vegetation	
5				☑ 2 - Dominance Test is >50%	
6				☐ 3 - Prevalence Index is ≤3.0 ¹	
7				4 - Morphological Adaptations (Provide su	upporting
8				data in Remarks or on a separate shee	t)
9				☐ 5 - Wetland Non-Vascular Plants ¹	
10				☐ Problematic Hydrophytic Vegetation¹ (Expl	lain)
11				, , , , , , , , , , , , , , , , , , ,	,
50% =, 20% =		= Total Cover		Indicators of hydric soil and wetland hydrology to be present, unless disturbed or problematic.	nust
Woody Vine Stratum (Plot size: 5M)				be present, unless disturbed of problematic.	
1. Rubus armeniacus	<u>20</u>	<u>yes</u>	FACU		
2.	_	_		Hydrophytic	
50% = <u>10</u> , 20% = <u>4</u>	20	= Total Cover	· 	Vegetation Yes ⊠	No 🗆
	<u></u>	. 3.6. 00161		Present?	
% Bare Ground in Herb Stratum *excluded from calculations per chapt	ter 2 auidan	Ce The 1088 P	enion 9 Neti	onal Wetland Plant List and 1993 Supplement wer	e used for this
delineation.	.c. z guludili	OO 1116 1300 K	Cylon a Mall	Shar Worlding Flant List and 1999 Supplement Wel	C 4364 101 11115

	Matrix	K			Redox Fe	atures							
nches)	Color (moist)	%	<u> </u>	Color (m	oist) %	Type ¹	Loc ²	Texture		Rema	arks		
<u>0-10</u>	10YR 2/1	<u>10</u>	00		. <u>—</u>			mucky peat	partially/mostl	y decom	posed	organic	s
<u>10-17</u>	10YR 2/2	<u>10</u>	<u> 00</u>	-	. <u>—</u>			mucky peat	partially/mostl	y decom	posed	organic	s
<u>17-26</u>	10YR 3/1	<u>10</u>	<u> 00</u>	-	. <u>—</u>			Si Loam	organic matte	r inclusio	<u>ns</u>		
		_			<u> </u>								
					· —								
					· —								
					· —								
-		_		-	· —								
		-			rix, CS=Covered or C	Coated Sand	Grains. ² Lo		e Lining, M=Matr			2	
		cable to	all LRF		otherwise noted.)			_	rs for Problema	ic Hydri	c Soil	s°:	
Histos					Sandy Redox (S5)			_	cm Muck (A10)				
	Epipedon (A2)				Stripped Matrix (St	•		_	ed Parent Materi	, ,			
	Histic (A3)				Loamy Mucky Mine		cept MLRA 1)	_	ery Shallow Dark			2)	
	gen Sulfide (A4)				Loamy Gleyed Ma				ther (Explain in F	Remarks)			
	ed Below Dark Su	-	11)		Depleted Matrix (F	-							
_	Dark Surface (A12)				Redox Dark Surface			3 lo di a a ta	ra of budrombudio				
_	Mucky Mineral (S	-			Depleted Dark Sur				rs of hydrophytic nd hydrology mus			1	
	Gleyed Matrix (S4	-			Redox Depression	ıs (F8)		unless	s disturbed or pro	blematic			
	Layer (if present):												
pe:										_			_
epth (inche	s):						Hydric Soils Pr	esent?	Yes	s 🛛		No	
emarks:													
emarks:													
IYDROLO	GY drology Indicators	s:											
YDROLO /etland Hyd			uired; c	heck all tha	ut apply)			Secondary	Indicators (2 or	more rec	uired)		
YDROLO fetland Hydrimary Indic	drology Indicators		uired; c	heck all tha	it apply) Water-Stained Lea	aves (B9)			Indicators (2 or		uired)		
YDROLO etland Hyo rimary Indic Surfac	drology Indicators cators (minimum of		uired; c			` '	B)	☐ Wate	•	s (B9)	juired)		
YDROLO fetland Hydrimary Indic Surfac High V	drology Indicators cators (minimum of ce Water (A1)		uired; c		Water-Stained Lea	` '	3)	☐ Wate	er-Stained Leave	s (B9) 4B)	uired)		
YDROLO Tetland Hydrimary India Surfac High V	drology Indicators cators (minimum of ce Water (A1) Water Table (A2)		uired; c		Water-Stained Lea	2, 4A, and 4I	3)	☐ Wate (MLF	er-Stained Leave	s (B9) 4B) 10)			
YDROLO Yetland Hydrimary Indic Surfac High V Satura Water	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3)		uired; c		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11)	2, 4A, and 4 l tes (B13)	В)	☐ Wate (MLF	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B	s (B9) 4B) 10) able (C2)			
YDROLO /etland Hydrimary Indic	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1)		juired; c		Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra	2, 4A, and 4l tes (B13) Odor (C1)		☐ Wate (MLF ☐ Drair ☐ Dry-S	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta	s (B9) 4B) 10) able (C2) Aerial Im			
YDROLO /etland Hyd rimary Indic Surfac High V Satura Water Water Drift D	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2)		uired; c		Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (2, 4A, and 4l tes (B13) Odor (C1) neres along L	iving Roots (C3)	Wate (MLF Drain Dry-S Satu	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on	s (B9) 4B) 10) able (C2) Aerial Im (D2)			
YDROLO /etland Hydrimary India Surface High V Satura Water Sedim Drift D Algal I	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2)		uired; c		Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph	2, 4A, and 4l tes (B13) Odor (C1) neres along L ced Iron (C4)	iving Roots (C3)	Wate	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position	s (B9) 4B) 10) able (C2) Aerial Im (D2)			
YDROLO /etland Hydrimary India Surface High V Satura Water Sedim Drift D Inon D	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) Deposits (B3) Mat or Crust (B4)	f one req	uired; c		Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduc	2, 4A, and 4l tes (B13) Odor (C1) neres along L ced Iron (C4) ction in Tilled	iving Roots (C3) Soils (C6)		or-Stained Leave RA 1, 2, 4A, and hage Patterns (B Season Water Tar ration Visible on morphic Position ow Aquitard (D3	s (B9) 4B) 10) able (C2) Aerial Im (D2)	agery		
YDROLO /etland Hydrimary Indic Surfac High V Satura Water Sedim Drift D Algal I Iron D	cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) deposits (B3) Mat or Crust (B4) deposits (B5)	f one req			Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduc Recent Iron Reduc	2, 4A, and 4I tes (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-S Satul Geor Shall FAC-	or-Stained Leave RA 1, 2, 4A, and hage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5)	agery		
YDROLO /etland Hydrimary Indic Surfac High V Satura Water Sedim Drift D Algal I Iron D Surfac	cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) Deposits (B3) Mat or Crust (B4) eposits (B5) ce Soil Cracks (B6)	f one req	gery (B7		Water-Stained Lea (except MLRA 1, 1) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse	2, 4A, and 4I tes (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-8 Satul Geor Shall FAC-	er-Stained Leave RA 1, 2, 4A, and hage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (1)	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5)	agery		
YDROLO Vetland Hydrimary Indic Surfac High V Satura Water Sedim Drift D Algal I Iron D Surfac	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) Deposits (B5) Deposits (B6) Deposits (B6) Deposits (B6) Deposits (B7) Deposits (B8)	f one req	gery (B7		Water-Stained Lea (except MLRA 1, 1) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse	2, 4A, and 4I tes (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled es Plants (D1)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-8 Satul Geor Shall FAC-	er-Stained Leave RA 1, 2, 4A, and hage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (1)	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5)	agery		
YDROLO Vetland Hydrimary Indice Surface High V Satura Sedim Sedim Inon D Surface Inunda Inunda Sparse	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) tent Deposits (B2) deposits (B3) Mat or Crust (B4) eposits (B5) te Soil Cracks (B6) ation Visible on Ae ely Vegetated Convations:	f one req	jery (B7 rface (B		Water-Stained Lea (except MLRA 1, 1) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse	tes (B13) Odor (C1) heres along L ced Iron (C4) ction in Tilled heres Plants (D1) Remarks)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-8 Satul Geor Shall FAC-	er-Stained Leave RA 1, 2, 4A, and hage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (1)	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5)	agery		
YDROLO Vetland Hydrimary Indic Surface High V Satura Water Sedim Inon D Surface Inunda Spars Veld Observarface Water	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) deposits (B3) Mat or Crust (B4) eposits (B5) ce Soil Cracks (B6) ation Visible on Ae ely Vegetated Con vations: er Present?	f one req	gery (B7 rface (B		Water-Stained Lea (except MLRA 1, 1) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (1) Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse Other (Explain in F	tes (B13) Odor (C1) heres along L ced Iron (C4) tion in Tilled s Plants (D1) Remarks)	iving Roots (C3) Soils (C6)	Wate (MLF Drain Dry-8 Satul Geor Shall FAC-	er-Stained Leave RA 1, 2, 4A, and hage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (1)	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5)	agery		
YDROLO /etland Hydrimary Indic Surface High V Satura Water Sedim Iron D Surface Inunda Sparse ield Observation Politation Politation Attention Politation	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) ment Deposits (B2) deposits (B3) Mat or Crust (B4) deposits (B5) de Soil Cracks (B6) ation Visible on Ae dely Vegetated Con vations: der Present? Present?	rial Imag cave Sur	gery (B7 rface (B		Water-Stained Lea (except MLRA 1, 1) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse Other (Explain in F	2, 4A, and 4I tes (B13) Odor (C1) heres along L ced Iron (C4) stion in Tilled heres Plants (D1) Remarks)):):	iving Roots (C3) Soils (C6)) (LRR A)	Wate (MLF Drain Dry-8 Satul Geor Shall FAC-	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5)	agery		
YDROLO /etland Hydrimary Indic Surface High V Satura Sedim Drift D Surface Inunda Sparse ield Observator Table aturation Pencludes cap	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) Ment Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) Dee Soil Cracks (B6) ation Visible on Ae Dely Vegetated Convations: Der Present? Present? Present?	rial Imag cave Sul Yes Yes	gery (B7 rface (B □ ⊠		Water-Stained Lea (except MLRA 1, Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse Other (Explain in F	2, 4A, and 4I tes (B13) Odor (C1) heres along L ced Iron (C4) btion in Tilled as Plants (D1) Remarks)):): :_ surface	iving Roots (C3) Soils (C6)) (LRR A) Wet	Wate (MLF Drain Dry-\$ Satur Geor Shall FAC- Raise	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5) D6) (LRF	agery	(C9)	
YDROLO /etland Hydrimary Indic Surface High V Satura Sedim Drift D Surface Inunda Sparse ield Observator Table aturation Pencludes cap	drology Indicators cators (minimum of ce Water (A1) Vater Table (A2) ation (A3) Marks (B1) Ment Deposits (B2) Deposits (B3) Mat or Crust (B4) Deposits (B5) Dee Soil Cracks (B6) ation Visible on Ae Dely Vegetated Convations: Der Present? Present? Present?	rial Imag cave Sul Yes Yes	gery (B7 rface (B □ ⊠		Water-Stained Lea (except MLRA 1, 1) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide (1) Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse Other (Explain in Filter) Depth (inches)	2, 4A, and 4I tes (B13) Odor (C1) heres along L ced Iron (C4) btion in Tilled as Plants (D1) Remarks)):): :_ surface	iving Roots (C3) Soils (C6)) (LRR A) Wet	Wate (MLF Drain Dry-\$ Satur Geor Shall FAC- Raise	er-Stained Leave RA 1, 2, 4A, and nage Patterns (B Season Water Ta ration Visible on morphic Position ow Aquitard (D3 Neutral Test (D5 ed Ant Mounds (i	s (B9) 4B) 10) able (C2) Aerial Im (D2)) 5) D6) (LRF	agery	(C9)	

Project Site:	Lynnwood Link E	Extension					City/Cou	nty:	ML T	errace/	<u>Snohomish</u>	Samp	ling Date:	4/3	/12	
Applicant/Owner:	Sound Transit									S	tate: WA	Samp	ling Point:	<u>W</u>	ИТ7-S	P2
Investigator(s):	M. Maynard, C. V	<u> Worsley</u>							Se	ection, T	ownship, Ra	ange: <u>S</u>	28, T27N, R4E	<u>:</u>		
Landform (hillslope, te	errace, etc.):					Loca	al relief (con	cave, o	conve	x, none)):		Slo	oe (%)	:	_
Subregion (LRR):	<u>A</u>		Lat:	47.80	27631	<u>5100</u>		L	.ong:	<u>-122.31</u>	324289400	<u>]</u>	Datum:	NAD8	<u> 83</u>	
Soil Map Unit Name:	<u>Urban Land</u>										NWI cl	assificati	on: <u>Upland</u>	<u>1</u>		
Are climatic / hydrolog	ic conditions on th	e site typical for	this time	e of ye	ear?	Y	es 🗆	1 [No		lf no, explai	n in Rem	arks.)			
Are Vegetation	, Soil □,	or Hydrology	□, sig	gnifica	ntly dis	sturbed	d? Are	"Norm	nal Cir	cumstar	nces" prese	nt?	Yes	\boxtimes	No	
Are Vegetation	, Soil □,	or Hydrology	□, nat	turally	/ probl	ematic	? (If no	eeded	l, expl	ain any	answers in	Remarks	.)			
SUMMARY OF FIN	IDINGS – Attac	h site map sh	owing	sam	pling	point	locations	, tran	sect	s, imp	ortant fea	tures, e	tc.			
Hydrophytic Vegetation	n Present?		Yes		No	\boxtimes										
Hydric Soil Present?			Yes		No	\boxtimes	Is the Sam within a W						Yes		No	\boxtimes
Wetland Hydrology Pr	esent?		Yes		No	\boxtimes										
Remarks: The sam	ple plot is located	d approximately	30 feet	west	of I-5	shoul	der.									
VEGETATION - U	se scientific na	mes of plants	3													
Tree Stratum (Plot siz	e: <u>10M</u>)		Absolut % Cove		Domir Specie		Indicator Status	Do	minar	nce Tes	t Workshee	et:				
1. Acer macrophyllu	<u>m</u>		70		<u>yes</u>	<u> </u>	FACU	Nur	mber o	of Domi	nant Specie	·S				(4)
2. Sorbus aucuparia			<u>5</u>		<u>no</u>		NL (UPL)				ACW, or FA		<u>1</u>			(A)
3								Tot	tal Nur	mber of	Dominant		2			(D)
4								Spe	ecies /	Across A	All Strata:		<u>3</u>			(B)
50% = <u>37.5</u> , 20% = <u>15</u>	<u>5</u>		<u>75</u>		= Tota	al Cove	r	Per	rcent c	of Domir	nant Specie	S	<u>33</u>			(A/B)
Sapling/Shrub Stratur	n (Plot size: <u>5M</u>)							Tha	at Are	OBL, F	ACW, or FA	C:	<u>55</u>			(70)
Rubus spectabilis	:		<u>10</u>		<u>yes</u>		FAC	Pre	evalen	nce Inde	x workshe	et:				
2										Tota	al % Cover o	<u>of:</u>	<u>Multi</u>	ply by:		
3									L spe			_	x1 =			
4										pecies		_	x2 =	_		
5									C spe			_	x3 =			
50% = 5, $20% = 2$			<u>10</u>		= Tota	al Cove	r		•	ecies		-	x4 =	_	_	
Herb Stratum (Plot siz	ze: <u>2M</u>)							UP	L spe	cies		_	x5 =	_		
1								Col	lumn 🏻	Totals:		(A)		_	(I	3)
2											Prevalen	ce Index	= B/A =	•		
3								1 _	•	-	getation In					
4								l			Γest for Hyd		Vegetation			
5									2 -	Domina	nce Test is	>50%				
6									3 -	Prevale	nce Index is	s <u><</u> 3.0 ¹				
7													(Provide suppo	orting		
8												-	arate sheet)			
9											d Non-Vasc					
10									Pro	blemati	c Hydrophy	tic Vegeta	ation ¹ (Explain)		
11								1Inc	dicato	rs of hvo	dric soil and	wetland	hydrology mus	st		
50% =, 20% =	<u> </u>				= I ota	al Cove	r				ss disturbed					
Woody Vine Stratum	•		00				FAOU									
1. Rubus armeniacu	<u>S</u>		<u>20</u>		<u>yes</u>		<u>FACU</u>	Hve	droph	vtic						
2								_	getati	-		Yes		No)	\boxtimes
50% = <u>10</u> , 20% = <u>4</u>			<u>20</u>		= 1 ota	al Cove	r	Pre	esent?	?						
% Bare Ground in He																
Remarks:	The 1988 Region 9	National Wetlar	nd Plant	List a	nd 199	93 Sup	plement wer	e use	d for tl	his delir	eation.					

Depth	Matrix				Redox Feat	ures							
nches)	Color (moist)	%	Col	or (mo	ist) %	Type ¹	Loc ²	Texture			Remarks	3	
<u>0-5</u>	10YR 3/2	<u>100</u>	-					<u>Loam</u>					
<u>5-16</u>	2.5Y 5/4	<u>60</u>	-					Gr Sa Loam	very sa	<u>ndy</u>			
	<u>5Y 4/1</u>	<u>40</u>	-					Clay Loam					
			-										
	·		-										
			-										
			-										
	entration D_Dan	lotion DM	- Doduco	d Motri	———	oted Sand (21.0	cation: PL=Po	aro Lining A	4-Motrix			
					ix, CS=Covered or Coantherwise noted.)	aleu Sanu (Jiailis. Lu		ors for Prol		Hydric S	oils ³ .	
] Histosol (abic to an	Littito, ui		Sandy Redox (S5)			_	2 cm Muck (i iyanc c		
	pedon (A2)				Stripped Matrix (S6)			_	Red Parent		TF2)		
Black His					Loamy Mucky Minera	al (F1) (exc	ept MLRA 1)		Very Shallo	,	,	F12)	
_	Sulfide (A4)				Loamy Gleyed Matrix			_	Other (Expla			/	
	Below Dark Surfa	ace (A11)			Depleted Matrix (F3)			_					
	k Surface (A12)	. ,			Redox Dark Surface								
-	ucky Mineral (S1)				Depleted Dark Surface	ce (F7)			tors of hydro				
] Sandy Gl	eyed Matrix (S4)				Redox Depressions	(F8)			and hydrologs ss disturbed			t,	
estrictive Lay	ver (if present):												
/pe:													
epth (inches):							Hydric Soils Pr	esent?		Yes		No	\boxtimes
emarks:													
YDROLOG													
=	logy Indicators:												
IYDROLOG\ /etland Hydro imary Indicato	logy Indicators: ors (minimum of c		d; check						ry Indicators			ed)	
YDROLOGY Vetland Hydro rimary Indicato	ors (minimum of co		d; check	all that	Water-Stained Leave	` '		☐ Wa	ater-Stained	Leaves (E	39)	ed)	
YDROLOGN fetland Hydro rimary Indicato Surface V	ors (minimum of converted (A1) ter Table (A2)		d; check		Water-Stained Leave (except MLRA 1, 2,	` '	3)	☐ Wa	ater-Stained LRA 1, 2, 4	Leaves (E A, and 4B	39))	ed)	
YDROLOGY Vetland Hydro rimary Indicato Surface V High Wat Saturatio	ology Indicators: ors (minimum of c Water (A1) ter Table (A2) n (A3)		d; check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and 4E	3)	☐ Wa (M I	ater-Stained LRA 1, 2, 4,4 ainage Patte	Leaves (E A, and 4B erns (B10)	39))	ed)	
YDROLOGY etland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma	ors (minimum of converted (A1) ter Table (A2) n (A3) arks (B1)		d; check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	4A , and 4E	3)	☐ Wa (MI	ater-Stained LRA 1, 2, 4, ainage Patte y-Season W	Leaves (E A, and 4B erns (B10) ater Table	39))	,	
YDROLOG) etland Hydro rimary Indicate Surface V High Wat Saturatio Water Mat Sediment	logy Indicators: ors (minimum of converted (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2)		d; check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od	4A, and 4E s (B13) dor (C1)		□ Wa (MI) □ Dra □ Dry □ Sat	ater-Stained LRA 1, 2, 44 ainage Patte -Season W turation Visil	Leaves (EA, and 4Berns (B10) ater Table	39) (C2) (C3) (C3)	,	
YDROLOG) Tetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sediment Drift Depri	logy Indicators: ors (minimum of cover (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3)		d; check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher	4A, and 4E s (B13) dor (C1) res along Li		□ Wa (MI) □ Dra □ Dry □ Sat □ Ge	ater-Stained LRA 1, 2, 44 ainage Patte y-Season W turation Visil omorphic Po	Leaves (EA, and 4B) erns (B10) ater Table ble on Aer osition (D2	39) (C2) (C3) (C3)	,	
YDROLOGY Vetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sedimen Drift Depo	ors (minimum of control (Mater (A1)) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		d; check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer	4A , and 4E s (B13) dor (C1) res along Li d Iron (C4)	ving Roots (C3)	War (MI) Dra Dra Dry Sar	ater-Stained LRA 1, 2, 4,4 ainage Patte /-Season W turation Visil omorphic Po allow Aquita	Leaves (EA, and 4B) erns (B10) ater Table ble on Aer osition (D2) rd (D3)	39) (C2) (C3) (C3)	,	
YDROLOGY /etland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sedimen Drift Depo	ors (minimum of convater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)		d; check		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled	ving Roots (C3) Soils (C6)	War (MI) Dra Dra Dry Sai Ge Sha	ater-Stained LRA 1, 2, 4,4 ainage Patte y-Season W turation Visil omorphic Pe allow Aquita C-Neutral To	Leaves (EAA, and 4Barns (B10) ater Table ble on Aer osition (D2 rd (D3) est (D5)) (C2) rial Image	ery (C9)	
YDROLOGY /etland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sediment Drift Depo	logy Indicators: ors (minimum of control of the con	ne require			Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled 3	ving Roots (C3) Soils (C6)	Wa (MI) Dra Dry Sal Ge Sh: FA	ater-Stained LRA 1, 2, 4,4 ainage Patte y-Season W turation Visil omorphic Po allow Aquita C-Neutral To ised Ant Mo	Leaves (EA, and 4B) arms (B10) atter Table ble on Aer osition (D2) rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
YDROLOG) /etland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundatio	logy Indicators: ors (minimum of control of the con	ne require	(B7)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled 3	ving Roots (C3) Soils (C6)	Wa (MI) Dra Dry Sal Ge Sha FA	ater-Stained LRA 1, 2, 4,4 ainage Patte y-Season W turation Visil omorphic Pe allow Aquita C-Neutral To	Leaves (EA, and 4B) arms (B10) atter Table ble on Aer osition (D2) rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
YDROLOGY Vetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundatio	logy Indicators: ors (minimum of control of the con	ne require	(B7)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled 3	ving Roots (C3) Soils (C6)	Wa (MI) Dra Dry Sal Ge Sh: FA	ater-Stained LRA 1, 2, 4,4 ainage Patte y-Season W turation Visil omorphic Po allow Aquita C-Neutral To ised Ant Mo	Leaves (EA, and 4B) arms (B10) atter Table ble on Aer osition (D2) rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
YDROLOGY Vetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundatio Sparsely Vetland Hydro	logy Indicators: ors (minimum of control of the con	ne require	(B7)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled 3	ving Roots (C3) Soils (C6)	Wa (MI) Dra Dry Sal Ge Sh: FA	ater-Stained LRA 1, 2, 4,4 ainage Patte y-Season W turation Visil omorphic Po allow Aquita C-Neutral To ised Ant Mo	Leaves (EA, and 4B) arms (B10) atter Table ble on Aer osition (D2) rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
YDROLOGY Vetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sedimen Inon Depo	logy Indicators: ors (minimum of orvater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) on Visible on Aeria Vegetated Concations: Present?	al Imagery	(B7) e (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer Recent Iron Reduction Stunted or Stresses Other (Explain in Res	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled 3	ving Roots (C3) Soils (C6)	Wa (MI) Dra Dry Sal Ge Sh: FA	ater-Stained LRA 1, 2, 4,4 ainage Patte y-Season W turation Visil omorphic Po allow Aquita C-Neutral To ised Ant Mo	Leaves (EA, and 4B) arms (B10) atter Table ble on Aer osition (D2) rd (D3) est (D5) unds (D6)	(LRR A	ery (C9)	
WDROLOGY Vetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sedimen Inon Depot Iron Depot Inundatio Sparsely vetlad Observat urface Water For	logy Indicators: ors (minimum of control of the Co	al Imagery ave Surface	(B7) e (B8) No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduced Recent Iron Reduction Stunted or Stresses Other (Explain in Red	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled 3 Plants (D1)	ving Roots (C3) Soils (C6) (LRR A)	Wa (MI) Dra Dry Sal Ge Sh: FA	ter-Stained LRA 1, 2, 44 ainage Patte y-Season W turation Visil omorphic Pe allow Aquita C-Neutral Te ised Ant Mo ost-Heave He	Leaves (EAA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and all all all all all all all all all al	(LRR A	ery (C9)	lo
YDROLOGY Vetland Hydro rimary Indicato Surface V High Wat Saturatio Water Ma Sedimen Inon Depo Inundatio Surface S Inundatio Sparsely Vetla Observat Vater Table Presencludes capilla	logy Indicators: ors (minimum of control of the con	al Imagery ave Surface es es es	(B7) e (B8) No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer Recent Iron Reductio Stunted or Stresses Other (Explain in Red Depth (inches):	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled: Plants (D1) marks)	ving Roots (C3) Soils (C6) (LRR A) Wet	Wa (MI) Dra Dra Sal Ge Sh: FA	ter-Stained LRA 1, 2, 44 ainage Patte y-Season W turation Visil omorphic Pe allow Aquita C-Neutral Te ised Ant Mo ost-Heave He	Leaves (EAA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and all all all all all all all all all al	(D7)	ery (C9)	lo
WDROLOGY Vetland Hydro rimary Indicate Surface V High Wat Saturatio Water Ma Sedimen Sedimen Iron Depo Iron Depo Inundatio Sparsely ield Observat urface Water For	logy Indicators: ors (minimum of control of the con	al Imagery ave Surface es es es	(B7) e (B8) No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reducer Recent Iron Reductio Stunted or Stresses Other (Explain in Red Depth (inches): Depth (inches):	4A, and 4E s (B13) dor (C1) res along Li d Iron (C4) on in Tilled: Plants (D1) marks)	ving Roots (C3) Soils (C6) (LRR A) Wet	Wa (MI) Dra Dra Sal Ge Sh: FA	ter-Stained LRA 1, 2, 44 ainage Patte y-Season W turation Visil omorphic Pe allow Aquita C-Neutral Te ised Ant Mo ost-Heave He	Leaves (EAA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and 4BA, and all all all all all all all all all al	(D7)	ery (C9)	lo

Project Site:	Lynnwood Link Exten	<u>sion</u>		City/Coun	ty: ML Terrace/Snohomish	Sampling Date:	4/3/12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WMT8-S	SP1
Investigator(s):	M. Maynard, C. Wors	<u>ley</u>			Section, Township, Ran	ge: <u>S28, T27N, R4E</u>		
Landform (hillslope, ter	rrace, etc.): <u>swale</u>		Loca	I relief (conc	ave, convex, none): <u>concave</u>	Slop	e (%): 4	
Subregion (LRR):	<u>A</u>	Lat: <u>47.8</u>	0610616900		Long: <u>-122.30570086500</u>	Datum:	NAD83	
Soil Map Unit Name:	McKenna gravelly si	It loam			NWI clas	ssification: PEM		
Are climatic / hydrologi	ic conditions on the site	e typical for this time of	year? Y	es 🗆	No 🔲 (If no, explain i	n Remarks.)		
Are Vegetation □,	Soil □, or Hy	drology □, signific	antly disturbed	? Are "	Normal Circumstances" present	? Yes	⊠ No	
Are Vegetation □,	Soil □, or Hy	drology □, natura	ly problematic	? (If ne	eded, explain any answers in Re	emarks.)		
SUMMARY OF FIN	DINGS – Attach sit	e map showing sar	npling point	locations,	transects, important featu	res, etc.		
Hydrophytic Vegetation	n Present?	Yes 🗵	No 🗆					
Hydric Soil Present?		Yes 🗵	No 🗆	Is the Samp within a We		Yes	⊠ No	
Wetland Hydrology Pre	esent?	Yes 🗵	No 🗆		idita .			
Remarks: The samp	ole plot is located eas	t of I-5 and west of the	apartment co	mplex in a	swale. Wetland is east of drai	nage (SMT4), separa	ted by upla	and
berm.							,	
VEGETATION - Us	se scientific names	of plants						
Tree Stratum (Plot size	e: <u>10M</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator	Dominance Test Worksheet:			
1		<u> </u>	<u>opecies:</u>	<u>Status</u>	Number of Dominant Species			
2					That Are OBL, FACW, or FAC	: <u>3</u>		(A)
3.					Total Number of Dominant			
4					Species Across All Strata:	<u>4</u>		(B)
50% =, 20% = _			= Total Cover	r	Percent of Dominant Species			
Sapling/Shrub Stratum					That Are OBL, FACW, or FAC	:	=	(A/B)
1. Rubus spectabilis		<u>20</u>	<u>yes</u>	FAC	Prevalence Index worksheet	:		
2					Total % Cover of:	Multip	oly by:	
3			<u> </u>		OBL species	x1 =		
4					FACW species	x2 =		
5					FAC species	x3 =		
50% = <u>10,</u> 20% = <u>4</u>		<u>20</u>	= Total Cover	r	FACU species	x4 =		
Herb Stratum (Plot siz	e: <u>2M</u>)				UPL species	x5 =		
Athyrium filix femir	<u>na</u>	<u>40</u>	<u>yes</u>	FACW	Column Totals:	(A)	((B)
Tolmiea menziesii		<u>—</u> <u>5</u>	no	FAC		Index = B/A =	,	,
3. Equisetum telmate		<u>-</u> <u>5</u>	no	FACW	Hydrophytic Vegetation Indi			
Lysichiton america		<u>-</u> 15	ves	OBL	☐ 1 – Rapid Test for Hydro			
5		_			□ 2 - Dominance Test is >5	. , .		
6.					☐ 3 - Prevalence Index is <			
7.					5 1 10 valonico in acx 10 <u> </u>	-	_+:	
8.					4 - Morphological Adapta data in Remarks or or		rting	
9.					5 - Wetland Non-Vascula	ar Plants ¹		
10.								
11					☐ Problematic Hydrophytic	vegetation (Explain)		
50% = <u>32.5</u> , 20% = <u>13</u>	1	<u></u> <u>65</u>	= Total Cover		¹ Indicators of hydric soil and w		t	
Woody Vine Stratum (='	<u>05</u>	= Total Cove		be present, unless disturbed o	r problematic.		
Rubus armeniacus	_	10	VAS	FACU				
Rupus armeniacus 2.	2	<u>10</u>	<u>yes</u>	1 700	Hydrophytic			
<u> </u>		10	= Total Cove	, 	Vegetation Y	′es ⊠	No	
50% = <u>5</u> , 20% = <u>2</u>		<u>10</u>	= 10tal Cove		Present?			
% Bare Ground in Her	<u> </u>		140		14 11 1 11 11			
Remarks: T	ne 1988 Region 9 Nati	onal Wetland Plant List	and 1993 Supp	plement were	used for this delineation.			

(inches)	Matrix				Redox Feat	luies							
	Color (moist)	%	Colo	or (mo	ist) %	Type ¹	Loc ²	Texture		Rema	arks		
<u>0-5</u>	10YR 3/1	<u>100</u>	_					<u>Loam</u>					
<u>5-9</u>	<u>5Y 4/1</u>	<u>70</u>	2.5	5Y 4/3	<u>30</u>	<u>C</u>	<u>M</u>	Gr Sa Loam	Very sandy				
<u>9-19</u>	<u>10Y 4/1</u>	<u>90</u>	10	YR 3/4	<u>4</u> <u>10</u>	<u>C</u>	<u>M</u>	Gr Sa Loam	Very sandy				
			_										
			_										
	-		_										
			_										
							2 ₁						
					ix, CS=Covered or Co	ated Sand	d Grains. Lo		e Lining, M=Matr		c Sai	le ³ .	
Histosol		able to all			Sandy Redox (S5)			_	cm Muck (A10)	iic riyuri	C 301	i s .	
_	pipedon (A2)				Stripped Matrix (S6)			_	ed Parent Materia	al (TF2)			
	istic (A3)				Loamy Mucky Miner		xcept MLRA 1)		ery Shallow Dark	, ,	(TF1:	2)	
_	en Sulfide (A4)				Loamy Gleyed Matri		,	_	ther (Explain in R		•	-,	
_ , ,	d Below Dark Surf	ace (A11)		_ ⊠	Depleted Matrix (F3)	. ,			(=	,			
_	ark Surface (A12)	,			Redox Dark Surface								
☐ Sandy N	Mucky Mineral (S1)		1		Depleted Dark Surfa	ice (F7)			s of hydrophytic			t	
☐ Sandy C	Gleyed Matrix (S4)		ļ		Redox Depressions	(F8)			nd hydrology mus s disturbed or pro				
estrictive La	ayer (if present):								•				
ype:													
ype.									Yes	s 🛛		No	
Depth (inches):						Hydric Soils P	resent?	163				
Depth (inches Remarks:	GY						Hydric Soils P	resent?	163				
Depth (inches Remarks: HYDROLOG Vetland Hydr	GY rology Indicators:						Hydric Soils P						
Oppth (inches Remarks: HYDROLOG Wetland Hydro Primary Indica	SY rology Indicators: ators (minimum of o			_		(700)	Hydric Soils P	Secondary	Indicators (2 or	more req	uired)		
HYDROLOG Vetland Hydr Primary Indica	SY rology Indicators: ators (minimum of a water (A1)			all that	Water-Stained Leave	, ,		Secondary	Indicators (2 or er-Stained Leaves	more req	uired)		
AYDROLOG Vetland Hydi rimary Indica Surface High W	SY rology Indicators: ators (minimum of de Water (A1) ater Table (A2)				Water-Stained Leave (except MLRA 1, 2,	, ,		Secondary Wate	Indicators (2 or er-Stained Leaves	more req s (B9) 4B)	uired)		
HYDROLOG Vetland Hydi Surface High W Saturati	rology Indicators: ators (minimum of of Water (A1) ater Table (A2) ion (A3)				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and		Secondary Wate (MLF	Indicators (2 or er-Stained Leaves RA 1, 2, 4A, and hage Patterns (B	more req s (B9) 4B) 10)			
HYDROLOG Vetland Hydr Surface High W Saturati Water M	rology Indicators: ators (minimum of of water (A1) ater Table (A2) ion (A3) Marks (B1)				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate	4A, and 4		Secondary Wate (MLF	Indicators (2 or over-Stained Leaves RA 1, 2, 4A, and bage Patterns (Boseson Water Ta	more req s (B9) 4B) 10) able (C2))	
AYDROLOG Wetland Hydrimary Indica Surface High W Saturati Water N Sedime	rology Indicators: ators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Od	4A, and 4 s (B13) dor (C1)	4B)	Secondary Wate (MLF Drain Dry-S	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (B' Season Water Taration Visible on A	more req s (B9) 4B) 10) able (C2) Aerial Im)	
AYDROLOG Wetland Hydrimary Indica Surface High W Saturati Water N Sedime Drift De	rology Indicators: ators (minimum of of Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and 4 s (B13) dor (C1) res along	4B) Living Roots (C3)	Secondary Wate (MLF Drain Dry-8 Satur	Indicators (2 or er-Stained Leaves RA 1, 2, 4A, and hage Patterns (B'Season Water Tarration Visible on anorphic Position	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	
HYDROLOG Vetland Hydr Surface High W Saturati Water N Sedime Drift De	rology Indicators: ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4)				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduce	4A, and 4 s (B13) dor (C1) res along ed Iron (C4	4B) Living Roots (C3)	Secondary Wate (MLF Drain Dry-S Satur Geor	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (Beseason Water Taration Visible on prophic Position ow Aquitard (D3)	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	
HYDROLOG Wetland Hydr Surface High W Saturati Water N Sedime Drift De Algal M	rology Indicators: ators (minimum of of Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)				Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher	4A, and 4 s (B13) dor (C1) res along ed Iron (C4 on in Tille	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drain Dry-S Satur Satur Shall FAC-	Indicators (2 or er-Stained Leaves RA 1, 2, 4A, and hage Patterns (B'Season Water Tarration Visible on anorphic Position	more req s (B9) 4B) 10) able (C2) Aerial Im (D2)	agery)	
HYDROLOG Wetland Hydr Surface High W Saturati Sedime Drift De Algal M Iron De Surface	rology Indicators: ators (minimum of of the Water (A1) ater Table (A2) ator (A3) Marks (B1) ant Deposits (B2) aposits (B3) at or Crust (B4) posits (B5)	one require			Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drain Dry-S Satur Geor Shall FAC-	Indicators (2 or over-Stained Leaves RA 1, 2, 4A, and hage Patterns (Beseason Water Taration Visible on ownorphic Position ow Aquitard (D3). Neutral Test (D5)	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	agery)	
HYDROLOG Wetland Hydr Surface High W Saturati Sedime Drift De Algal M Iron De Surface	rology Indicators: ators (minimum of a Water (A1) ater Table (A2) aton (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) a Soil Cracks (B6)	one require	(B7)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drain Dry-S Satur Geor Shall FAC-	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (Baseason Water Taration Visible on per-phic Position ow Aquitard (D3) Neutral Test (D5) and Ant Mounds (I	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	agery)	
HYDROLOG Wetland Hydr Surface High W Saturati Sedime Drift De Algal M Iron De Surface Inundat Sparsel	rology Indicators: ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) and Deposits (B2) aposits (B3) at or Crust (B4) posits (B5) a Soil Cracks (B6) ion Visible on Aeri by Vegetated Conc	one require	(B7)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drain Dry-S Satur Geor Shall FAC-	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (Baseason Water Taration Visible on per-phic Position ow Aquitard (D3) Neutral Test (D5) and Ant Mounds (I	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	agery)	
HYDROLOG Wetland Hydro Wetland Hydro Surface High W Saturati Sedime Drift De Algal M Iron De Surface Inundat Inundat Sparsel	rology Indicators: ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) exposits (B3) fat or Crust (B4) posits (B5) exposits (B5) exposits (B6) ion Visible on Aeri by Vegetated Concations:	one require	(B7)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D	4B) Living Roots (C3) 4) d Soils (C6)	Secondary Wate (MLF Drain Dry-S Satur Geor Shall FAC-	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (Baseason Water Taration Visible on per-phic Position ow Aquitard (D3) Neutral Test (D5) and Ant Mounds (I	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	agery)	
HYDROLOG Wetland Hydri Surface High W Saturati Sedime Chift De Chi	rology Indicators: ators (minimum of a Water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) e Soil Cracks (B6) ion Visible on Aeri by Vegetated Concations: r Present?	al Imagery	(B7) e (B8)		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Octorial Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Research	s (B13) dor (C1) res along d Iron (C4 on in Tiller Plants (D	4B) Living Roots (C3) 4) d Soils (C6) 1) (LRR A)	Secondary Wate (MLF Drain Dry-S Satur Geor Shall FAC-	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (Baseason Water Taration Visible on per-phic Position ow Aquitard (D3) Neutral Test (D5) and Ant Mounds (I	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	agery)	
HYDROLOG Wetland Hydro Surface High W Saturati Sedime Drift De Algal M Iron De Surface	rology Indicators: ators (minimum of of the Water (A1) ater Table (A2) ater Table (A2) ater Table (A2) ater Table (B2) ater Table (B2) ater Table (B3) ater Trust (B4) posits (B5) ater Trust (B4) posits (B5) ater Trust (B6) ater Trust (B6) ater Trust (B6) ater Trust (B7)	al Imagery ave Surface	(B7) e (B8) No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphel Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	s (B13) dor (C1) res along dd Iron (C2 on in Tiller Plants (D marks)	4B) Living Roots (C3) 4) d Soils (C6) 1) (LRR A)	Secondary Wate (MLF Drain Dry-S Satur Geor Shall FAC-	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (B' Season Water Taration Visible on prophic Position ow Aquitard (D3). Neutral Test (D5 and Ant Mounds (I-Heave Hummoor).	more req s (B9) 4B) 10) able (C2) Aerial Im (D2))	agery)	
HYDROLOG Wetland Hydro Wetland Hydro Surface High W Saturati Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Observa Surface Water Table F Saturation Preincludes capi	rology Indicators: ators (minimum of of the Water (A1) ater Table (A2) ater Table (A2) ater Table (A2) ater Table (B2) ater Table (B3) ater Terest (B4) posits (B3) ater Trust (B4) posits (B5) a Soil Cracks (B6) aterior Visible on Aeri ations: ar Present? Present? aterior Yesent?	al Imagery ave Surface (es fes f	(B7) e (B8) No No No		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along dd Iron (C2 on in Tille Plants (D marks) surfaca surfaca	4B) Living Roots (C3) 4) d Soils (C6) 1) (LRR A)	Secondary Wate (MLF Drain Satur Geor Shall FAC- Raise	Indicators (2 or per-Stained Leaves RA 1, 2, 4A, and page Patterns (B' Season Water Taration Visible on prophic Position ow Aquitard (D3). Neutral Test (D5 and Ant Mounds (I-Heave Hummoor).	more req s (B9) 4B) 10) Aerial Im (D2)) 5) D6) (LRF	agery) r (C9)	

Project Site:	Lynnwood Link Extension			City/Cour	ty: ML Terrace/Snohomish	Sampling Date:	4/3/1	12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WM	T8-SF	22
Investigator(s):	M. Maynard, C. Worsley				Section, Township, Ra	nge: <u>S28, T27N, R4E</u>			
Landform (hillslope, te	rrace, etc.):		Loc	al relief (conc	ave, convex, none): <u>convex</u>	Slope	e (%):	<u>2</u>	
Subregion (LRR):	<u>A</u>	Lat: 47.8	<u>30613061100</u>		Long: <u>-122.30573064100</u>	Datum: I	NAD83	<u>3</u>	
Soil Map Unit Name:	McKenna gravelly silt loam				NWI cla	assification: <u>Upland</u>			
Are climatic / hydrolog	ic conditions on the site typical f	or this time of	year? Y	∕es □	No 🗌 (If no, explain	in Remarks.)			
Are Vegetation □,	Soil \square , or Hydrology	☐, signifi	cantly disturbed	d? Are "	Normal Circumstances" presen	t? Yes	\boxtimes	No	
Are Vegetation □,	Soil \square , or Hydrology	☐, natura	lly problemation	? (If ne	eded, explain any answers in R	lemarks.)			
SUMMARY OF FIN	IDINGS – Attach site map s	howing sa	mpling poin	t locations,	transects, important feat	ures, etc.			ĺ
Hydrophytic Vegetation	n Present?	Yes [la tha Cama	alad Araa				
Hydric Soil Present?		Yes [No ⊠	Is the Samp within a We		Yes		No	\boxtimes
Wetland Hydrology Pro	esent?	Yes [No ⊠						
Remarks: The samp	ole plot is located on the berm	between WN	IT8 and the di	rainage (SM1	(4), west of the wetland.				
VEGETATION – Us	se scientific names of plan	ts							
Tree Stratum (Plot siz	e: <u>10M</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	t:			
1. Pseudotsuga men	nzesii	<u>20</u>	<u>yes</u>	FACU	Number of Dominant Species	•			
Sorbus aucuparia		<u></u>	<u>ves</u>	NL (UPL)	That Are OBL, FACW, or FAC				(A)
3		<u> </u>			Total Number of Dominant				
4		' <u></u>	<u> </u>		Species Across All Strata:	<u>5</u>			(B)
50% = <u>17.5</u> , 20% = <u>7</u>		35	= Total Cove	er	Percent of Dominant Species	:			
Sapling/Shrub Stratum	n (Plot size: <u>5M</u>)				That Are OBL, FACW, or FAC				(A/B)
Oemleria cerasifor	<u>rmis</u>	20	<u>yes</u>	FACU	Prevalence Index workshee				
2					Total % Cover of	f: Multipl	y by:		
3.			<u> </u>		OBL species	x1 =			
4					FACW species	x2 =		_	
5					FAC species	x3 =		_	
50% = <u>10</u> , 20% = <u>4</u>		<u>20</u>	= Total Cove	er	FACU species	x4 =		_	
Herb Stratum (Plot siz	re: <u>2M</u>)				UPL species	x5 =			
Equisetum telmate	eia .	60	<u>yes</u>	FACW	Column Totals:	_ (A)		(E	3)
2	_	_	<u></u>			e Index = B/A =			,
3					Hydrophytic Vegetation Ind				
4.					☐ 1 – Rapid Test for Hydr				
5					2 - Dominance Test is >	· ·			
6					☐ 3 - Prevalence Index is				
7.					o i rovaloneo indoxilo	_			
8.					4 - Morphological Adapt	tations" (Provide suppor on a separate sheet)	ting		
9					☐ 5 - Wetland Non-Vascu				
10									
					Problematic Hydrophyti	c vegetation (Explain)			
11			= Total Cove		¹ Indicators of hydric soil and	wetland hydrology must			
50% = <u>30</u> , 20% = <u>12</u> <u>Woody Vine Stratum (</u>	(Diet eize: EM)	<u>60</u>	= Total Cove	ŧI	be present, unless disturbed	or problematic.			
	· · · · · · · · · · · · · · · · · · ·	70		FACIL					
1. Rubus armeniacus	<u>S</u>	<u>70</u>	<u>yes</u>	<u>FACU</u>	Hydrophytic				
2						Yes	No		\boxtimes
50% = 35, 20% = 14		<u>70</u>	= Total Cove	er	Present?				
% Bare Ground in Her									
Remarks: T	he 1988 Region 9 National Wet	and Plant Lis	and 1993 Sup	plement were	e used for this delineation.				

Depth	Matrix	K				Redox Feat	tures							
inches)	Color (moist)	%	6	Colo	(moi	ist) %	Type ¹	Loc ²	Texture			Remark	S	
<u>0-5</u>	10YR 4/2	<u>10</u>	00	_					Sa Loam					
<u>5-17</u>	2.5Y 5/3	<u>10</u>	<u>00</u>	_		<u> </u>			Gr Sand					
<u>17-20</u>	<u>5Y 4/2</u>	<u>7</u> :	<u>5</u>	<u>7.5</u> Y	'R 3/4	<u>4</u> <u>25</u>	<u>C</u>	<u>M</u>	Gr Sa Loam	Very san	<u>dy</u>			
				_										
			_	_		· 								
			_	_										
				_	_									
 [vne: C= Co	ncentration D-De		RM-R	educed	Matri	x, CS=Covered or Co	ated San	d Grains ² I	.ocation: PL=Po	re Lining M-	-Matrix			
		-				therwise noted.)	alca Gari	d Orallis.		ors for Probl		Hvdric S	Soils ³ :	
] Histoso		00010 10	on E	-]	Sandy Redox (S5)			_	2 cm Muck (A		ilyuno c		
_	pipedon (A2)				_	Stripped Matrix (S6)			_	Red Parent M	-	TF2)		
	istic (A3)]	Loamy Mucky Minera		xcept MLRA 1)		ery Shallow	•	,	F12)	
_	en Sulfide (A4)					Loamy Gleyed Matri				Other (Explai	n in Rem	narks)	,	
_	d Below Dark Su	rface (A1	11)]	Depleted Matrix (F3))					,		
☐ Thick D	ark Surface (A12))				Redox Dark Surface	(F6)							
☐ Sandy I	Mucky Mineral (S	1)				Depleted Dark Surfa	ce (F7)			ors of hydrop				
] Sandy	Gleyed Matrix (S4	.)]	Redox Depressions	(F8)			and hydrology ss disturbed			nt,	
estrictive L	ayer (if present):													
ype:														
epth (inches	s):							Hydric Soils	Present?		Yes		No	\boxtimes
Remarks:														
Remarks:	GY.													
HYDROLOG Vetland Hyd	SY rology Indicator:										(0.			
HYDROLOO Vetland Hyd Primary Indica	GY rology Indicators ators (minimum of		quired;				(0.0)			y Indicators			red)	
HYDROLOO Vetland Hyd Primary Indica Surface	GY rology Indicators ators (minimum of a Water (A1)		quired;		I that	Water-Stained Leave	, ,	40)	□ Wa	ter-Stained L	eaves (B	39)	red)	
HYDROLOG Vetland Hyd Primary Indica Surface High W	GY rology Indicators ators (minimum of Water (A1) dater Table (A2)		quired;	l		Water-Stained Leave (except MLRA 1, 2,	, ,	4B)	☐ War	ter-Stained L	eaves (B	39)	ed)	
HYDROLOG Vetland Hyd Primary Indica Surface High W	GY rology Indicators ators (minimum of Water (A1) ater Table (A2) ion (A3)		quired;			Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11)	4A, and	4B)	☐ Wat	ter-Stained L .RA 1, 2, 4A, inage Patterr	eaves (B , and 4B) ns (B10)	39))	red)	
IYDROLOG Vetland Hyd rimary Indica Surface High W Saturat	rology Indicators ators (minimum of w Water (A1) dater Table (A2) ion (A3) Marks (B1)		quired;	!		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates	4A , and s (B13)	4B)	☐ Wat	ter-Stained L .RA 1, 2, 4A, inage Patterr -Season Wat	eaves (B and 4B) ns (B10) ter Table	39))	·	
HYDROLOO Wetland Hyd rimary Indica Surface High W Saturat Water Sedime	rology Indicators ators (minimum of a Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		quired;	1		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc	4A, and s (B13) dor (C1)		☐ War (ML ☐ Dra ☐ Dry. ☐ Sate	ter-Stained L.RA 1, 2, 4A, inage Patterr-Season Waturation Visible	eaves (B , and 4B) ns (B10) ter Table le on Aer	(C2)	·	
HYDROLOG Wetland Hyd Inimary Indicator Surface High W Saturat Water Sedime	rology Indicators ators (minimum of a Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) aposits (B3)		quired;	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oct Oxidized Rhizospher	4A, and s (B13) dor (C1) res along	Living Roots (C		ter-Stained L RA 1, 2, 4A, inage Patterr -Season War uration Visibl omorphic Pos	eaves (B , and 4B) ns (B10) ter Table le on Aer sition (D2	(C2)	·	
HYDROLOG Vetland Hyd Primary Indica Surface High W Satural Water Sedime Drift De	rology Indicators ators (minimum of a Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4)		quired;	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Od Oxidized Rhizospher Presence of Reduce	4A, and as (B13) dor (C1) res along d Iron (C4	Living Roots (C:	Wat (ML Dra Dry Satt Sha	ter-Stained L RA 1, 2, 4A, inage Patterr -Season War uration Visibl pmorphic Pos	eaves (B , and 4B) ns (B10) ter Table le on Aeri sition (D2	(C2)	·	
HYDROLOG Vetland Hyd Primary Indica Surface High W Saturat Water Sedime Drift De	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)	f one req	quired;	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	4A, and as (B13) dor (C1) res along d Iron (C4) on in Tille	Living Roots (C: 4) d Soils (C6)	Wat	ter-Stained L RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl pmorphic Pos allow Aquitaro C-Neutral Tes	eaves (B and 4B) ns (B10) ter Table de on Aer sition (D2 d (D3) st (D5)	(C2) at Image	ery (C9)	
HYDROLOG Vetland Hyd Primary Indica Surface High W Saturat Sedime Drift De Algal M Iron De	rology Indicators ators (minimum of Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6)	f one req		1		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	War War War	ter-Stained L RA 1, 2, 4A, inage Patterr -Season War uration Visibl pmorphic Pos	eaves (B and 4B) ns (B10) ter Table le on Aer sition (D2 d (D3) st (D5) nds (D6)	(C2) ial Image (LRR A	ery (C9)	
HYDROLOO Wetland Hyd Primary Indica High W Saturat Water Sedime Drift De Algal M Iron De Surface	rology Indicators ators (minimum of a Water (A1) dater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae	f one req	gery (B	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wat Wat Wat Wat	ter-Stained L RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mou	eaves (B and 4B) ns (B10) ter Table le on Aer sition (D2 d (D3) st (D5) nds (D6)	(C2) ial Image (LRR A	ery (C9)	
HYDROLOG Wetland Hyd Inimary Indicat Surface High W Satural Water Sedime Algal M Iron De Surface Inundat Sparse	rology Indicators ators (minimum of a Water (A1) rater Table (A2) rion (A3) Marks (B1) rent Deposits (B2) reposits (B3) reposits (B4) reposits (B5) reposits (B5) reposits (B5) reposits (B6) reposits (B6) reposits (B6)	f one req	gery (B	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wat Wat Wat Wat	ter-Stained L RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mou	eaves (B and 4B) ns (B10) ter Table le on Aer sition (D2 d (D3) st (D5) nds (D6)	(C2) ial Image (LRR A	ery (C9)	
HYDROLOG Vetland Hyd Vrimary Indicator High Water Sedime Sedime High Water Sedime Sedime In Iron De Surface	rology Indicators ators (minimum of a Water (A1) rater Table (A2) rologion (A3) Marks (B1) rent Deposits (B2) reposits (B3) reposits (B3) reposits (B5) reposits (B5) reposits (B5) reposits (B5) reposits (B6) reposits (B6)	f one req	gery (B	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along d Iron (C4 on in Tille Plants (D	Living Roots (C: 4) d Soils (C6)	Wat Wat Wat Wat	ter-Stained L RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mou	eaves (B and 4B) ns (B10) ter Table le on Aer sition (D2 d (D3) st (D5) nds (D6)	(C2) ial Image (LRR A	ery (C9)	
HYDROLOG Vetland Hyd Primary Indica Surface High W Saturat Sedime Drift De Surface Iron De Inunda Sparse Field Observ	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae dy Vegetated Con ations: r Present?	f one req rial Imag cave Su	gery (B	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrates Hydrogen Sulfide Oct Oxidized Rhizospher Presence of Reduce Recent Iron Reduction Stunted or Stresses Other (Explain in Re	4A, and s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roots (C: 4) d Soils (C6)	Wat Wat Wat Wat	ter-Stained L RA 1, 2, 4A, inage Patterr -Season Wat uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mou	eaves (B and 4B) ns (B10) ter Table le on Aer sition (D2 d (D3) st (D5) nds (D6)	(C2) ial Image (LRR A	ery (C9)	
HYDROLOO Wetland Hyd Primary Indica High W Saturat Water Sedime Drift De Algal M Iron De Surface	rology Indicators ators (minimum of a Water (A1) dater Table (A2) don (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ly Vegetated Con ations: r Present? Present?	rial Imag cave Su	gery (B	 		Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re	4A, and s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roots (C: 4) d Soils (C6) 11) (LRR A)	Wat Wat Wat Wat	ter-Stained L RA 1, 2, 4A, inage Patterr -Season War uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mour st-Heave Hur	eaves (B and 4B) ns (B10) ter Table e on Aer sition (D2 d (D3) st (D5) nds (D6) mmocks	(C2) ial Image (LRR A	ery (C9)	No
HYDROLOG Vetland Hyd Primary Indicate Surface High W Saturat Vater Sedime Iron De Inunda Sparsee Field Observ Surface Water Vater Table Is Saturation Preincludes cap	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ly Vegetated Con ations: r Present? Present? esent? llary fringe)	rial Imag cave Su Yes Yes	ery (B			Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizospher Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roots (C: 4) d Soils (C6) d) (LRR A)	Water (ML) Dra Dry: Saturation Sha FAC Rais Fros	ter-Stained L RA 1, 2, 4A, inage Patterr -Season War uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mour st-Heave Hur	eaves (B and 4B) ns (B10) ter Table e on Aer sition (D2 d (D3) st (D5) nds (D6) mmocks	(C2) ial Image (LRR A	ery (C9)	10
HYDROLOG Vetland Hyd Verland Hyd Verland Hyd Verland High W Saturat Sedime Drift De Surface Inunda Sparse Verland Observ Verlace Water Vater Table Is Saturation Prencludes cap	rology Indicators ators (minimum of a Water (A1) dater Table (A2) dion (A3) Marks (B1) ent Deposits (B2) eposits (B3) dat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Visible on Ae ly Vegetated Con ations: r Present? Present? esent? llary fringe)	rial Imag cave Su Yes Yes	ery (B			Water-Stained Leave (except MLRA 1, 2, Salt Crust (B11) Aquatic Invertebrate: Hydrogen Sulfide Oc Oxidized Rhizosphet Presence of Reduce Recent Iron Reductic Stunted or Stresses Other (Explain in Re Depth (inches): Depth (inches):	s (B13) dor (C1) res along d Iron (C- on in Tille Plants (D marks)	Living Roots (C: 4) d Soils (C6) d) (LRR A)	Water (ML) Dra Dry: Saturation Sha FAC Rais Fros	ter-Stained L RA 1, 2, 4A, inage Patterr -Season War uration Visibl omorphic Pos illow Aquitarc C-Neutral Tes sed Ant Mour st-Heave Hur	eaves (B and 4B) ns (B10) ter Table e on Aer sition (D2 d (D3) st (D5) nds (D6) mmocks	(C2) ial Image (LRR A	ery (C9)	10

Project Site: <u>Lynnwood Link Extension</u>			City/Coun	ty: <u>Lynnwood/Snohomish</u> Sampl	ing Date:	4/5/12
Applicant/Owner: Sound Transit				State: <u>WA</u> Sampl	ing Point:	WLY3-SP1
Investigator(s): M. Maynard				Section, Township, Range: S2	1, T27N, R4E	
Landform (hillslope, terrace, etc.):		Local	l relief (conca	ave, convex, none): <u>concave</u>	Slope	e (%): <u>0</u>
Subregion (LRR): <u>A</u>	Lat: <u>47.80</u>	0787823300		Long: -122.30477705600	Datum: 1	NAD83
Soil Map Unit Name: <u>UrbanLand</u>				NWI classification	n: <u>PSS</u>	
Are climatic / hydrologic conditions on the site typical for	this time of y	ear? Ye	es 🛛	No	rks.)	
Are Vegetation \square , Soil \square , or Hydrology	☐, significa	antly disturbed	? Are "I	Normal Circumstances" present?	Yes	⊠ No □
Are Vegetation \square , Soil \square , or Hydrology	□, naturall	ly problematic?	(If ne	eded, explain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map sh		 -	locations,	transects, important features, et	C.	
Hydrophytic Vegetation Present?	Yes 🖾	No 🗆	Is the Samp	led Area		
Hydric Soil Present?	Yes ⊠	NO L	within a We		Yes	⊠ No □
Wetland Hydrology Present?	Yes 🛚	No 🗆				
Remarks: The sample plot is located in a hardhack	patch near t	the center of t	he wetland.			
VEGETATION – Use scientific names of plants		Dominant	Indicator			
<u>Tree Stratum</u> (Plot size: <u>10M</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test Worksheet:		
<u>Pseudotsuga menziesii (overhanging from buffer)</u>	<u>40</u>	<u>n/a*</u>	<u>FACU</u>	Number of Dominant Species	<u>1</u>	(A)
2				That Are OBL, FACW, or FAC:	<u> </u>	(74)
3				Total Number of Dominant	<u>1</u>	(B)
4				Species Across All Strata:	±	(5)
50% =, 20% =		= Total Cover		Percent of Dominant Species	<u>100</u>	(A/B)
Sapling/Shrub Stratum (Plot size: 5M)				That Are OBL, FACW, or FAC:		(/
1. <u>Spiraea douglasii</u>	<u>90</u>	<u>yes</u>	<u>FACW</u>	Prevalence Index worksheet:		
2				Total % Cover of:	<u>Multipl</u>	y by:
3				OBL species	x1 =	
4				FACW species	x2 =	
5				FAC species	x3 =	
50% = 45, 20% = 18	<u>90</u>	= Total Cover		FACU species	x4 =	
Herb Stratum (Plot size: 2M)				UPL species	x5 =	
1				Column Totals: (A)		(B)
2				Prevalence Index =	B/A =	
3				Hydrophytic Vegetation Indicators:		
4				☐ 1 – Rapid Test for Hydrophytic V	'egetation	
5				□ 2 - Dominance Test is >50%		
6				☐ 3 - Prevalence Index is ≤3.0 ¹		
7				4 - Morphological Adaptations ¹ (ting
8				data in Remarks or on a sepa	,	
9				5 - Wetland Non-Vascular Plants	; 1	
10				☐ Problematic Hydrophytic Vegeta	tion ¹ (Explain)	
11				¹ Indicators of hydric soil and wetland h	vdrology must	
50% =, 20% =		= Total Cover		be present, unless disturbed or proble		
Woody Vine Stratum (Plot size: 5M)						
1. <u>Rubus armeniacus</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	Undrankutia		
2				Hydrophytic Vegetation Yes	\boxtimes	No 🗆
50% = 2.5, 20% = 1	<u>5</u>	= Total Cover		Present?	· -	_
% Bare Ground in Herb Stratum						
Remarks: *excluded from calculations per chapt					dominant. The	e 1988 Region
9 National Wetland Plant List and 1993 S	uppiernent W	ere usea for thi	is delineation	l.		

Depth	Matrix				Redox Feat	ures								
inches) Colo	or (moist)	%	Color (r	noist)	%	Type ¹	Loc ²	Texture			Remark	(S		
<u>0-20</u> <u>10</u>	OYR 2/1	<u>100</u>						Si Loam	high or	ganic con	<u>tent</u>			
	 -													
														
	 -													
														
Type: C= Concentra	tion D-Donlotic		Poducod M	triv CS-Co	word or Co	atod Sand	Grains ² Lo	cation: PL=P	Poro Lining N	M_Matrix				
ydric Soil Indicate						aleu Sanu	Giailis. Lo		tors for Pro		Hydric	Soils ³ :		
Histosol (A1)	no. (Apphousic	, to all <u>L</u> i			tedox (S5)				2 cm Muck		,			
Histic Epipedo	n (A2)			=	Matrix (S6)				Red Parent		(TF2)			
Black Histic (A						al (F1) (ex	cept MLRA 1)		Very Shallo		. ,	F12)		
Hydrogen Sulfi	·			Loamy G	Gleyed Matrix	(F2)	•		Other (Expl		-	,		
Depleted Below	w Dark Surface	(A11)		Depleted	d Matrix (F3)									
Thick Dark Sui	rface (A12)			Redox D	ark Surface	(F6)								
Sandy Mucky	Mineral (S1)		\boxtimes	Depleted	d Dark Surfac	ce (F7)			ators of hydro tland hydrolo					
Sandy Gleyed	Matrix (S4)			Redox D	epressions ((F8)			ess disturbe			iii,		
estrictive Layer (if	present):													
ype: _														
epth (inches):							Hydric Soils P	resent?		Yes	\boxtimes	No)	
Remarks:														
Remarks:	Indicators:													
Remarks: HYDROLOGY Vetland Hydrology		required;	check all th	at apply)				Seconda	ary Indicator	s (2 or mo	ore requi	red)		
AYDROLOGY Vetland Hydrology virimary Indicators (n	ninimum of one	required;	check all th		tained Leave	es (B9)			ary Indicators			red)		
IYDROLOGY Vetland Hydrology Vrimary Indicators (n Surface Water High Water Ta	r (A1) able (A2)	required;		Water-S	tained Leave MLRA 1, 2, 4	` ,	В)	□ W	ater-Stained	Leaves (I	B9)	red)		
IYDROLOGY Vetland Hydrology rrimary Indicators (n Surface Water High Water Ta Saturation (A3	r (A1) able (A2)	required;		Water-S (except Salt Crus	MLRA 1, 2, 4 st (B11)	4A, and 4	В)	W (N	ater-Stained ILRA 1, 2, 4 rainage Patte	Leaves (F A, and 4B erns (B10)	B9)	red)		
IYDROLOGY Vetland Hydrology rimary Indicators (n Surface Water High Water Ta Saturation (A3	ninimum of one r (A1) able (A2) B)	required;		Water-S (except Salt Crus Aquatic	MLRA 1, 2, ost (B11) Invertebrates	4A, and 4 s (B13)	В)	W (N	rater-Stained ILRA 1, 2, 4 rainage Patter ry-Season W	Leaves (BA, and 4B) erns (B10) ater Table	B9) (B) (C2)	,		
IYDROLOGY //etland Hydrology rimary Indicators (n	ninimum of one r (A1) able (A2) s) B1) posits (B2)	required;		Water-S (except Salt Crus Aquatic Hydroge	MLRA 1, 2, on st (B11) Invertebrates on Sulfide Od	4A, and 4 s (B13) for (C1)		□ W (N □ Di □ Di □ Sa	later-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi	Leaves (I A, and 4B erns (B10) atter Table ble on Ae	B9) (C2) (C3)	,	9)	
IYDROLOGY Vetland Hydrology rimary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits	ninimum of one (A1) able (A2) (B) (B1) oosits (B2) (B3)	required;		Water-S (except Salt Crus Aquatic Hydroge Oxidized	MLRA 1, 2, 4 st (B11) Invertebrates in Sulfide Od I Rhizospher	4A, and 4 s (B13) for (C1) es along L	iving Roots (C3)	W (N)	Vater-Stained ILRA 1, 2, 4, 4 rainage Patte ry-Season W aturation Visi eomorphic P	Leaves (I A, and 4B erns (B10) ater Table ble on Ae osition (Di	B9) (C2) (C3)	,	9)	
HYDROLOGY Vetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	ninimum of one r (A1) able (A2) b) B1) cosits (B2) (B3) crust (B4)	required;		Water-S (except Salt Crus Aquatic Hydroge Oxidized Presence	MLRA 1, 2, 4 st (B11) Invertebrates in Sulfide Od If Rhizospheri e of Reduced	4A, and 4 s (B13) for (C1) es along L d Iron (C4)	.iving Roots (C3)	W (N)	later-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita	Leaves (I A, and 4B erns (B10) ater Table able on Ae cosition (Da ard (D3)	B9) (C2) (C3)	,	9)	
HYDROLOGY Vetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C	ninimum of one (A1) able (A2) b) B1) cosits (B2) (B3) crust (B4) (B5)	required;		Water-S (except Salt Crus Aquatic Hydroge Oxidized Presenc Recent I	MLRA 1, 2, st (B11) Invertebrates on Sulfide Odd Rhizosphere of Reduced fron Reduction	4A, and 4 s (B13) lor (C1) es along L d Iron (C4)	iving Roots (C3) Soils (C6)	W (N	Ac-Neutral T	Leaves (I A, and 4B erns (B10) dater Table dible on Ae dosition (Dard (D3) dest (D5)	B9) (C2) (C3) (C4) (C5) (C5)	, gery (C	9)	
AYDROLOGY Vetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C	ninimum of one r (A1) able (A2) b) B1) rosits (B2) (B3) crust (B4) (B5) cracks (B6)			Water-S (except Salt Crue Aquatic Hydroge Oxidized Presenc Recent I Stunted	MLRA 1, 2, st (B11) Invertebrates in Sulfide Odd Rhizospher e of Reduced fron Reduction Stresses I	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)	W (N (N D) S	rater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo	Leaves (I A, and 4B erns (B10) dater Table able on Ae rosition (D3) ard (D3) rest (D5) bunds (D6)	B9) B9) Comparison of the co	, gery (C	9)	
AYDROLOGY Wetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C	ninimum of one (A1) able (A2) b) B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial In	nagery (E		Water-S (except Salt Crue Aquatic Hydroge Oxidized Presenc Recent I Stunted	MLRA 1, 2, st (B11) Invertebrates on Sulfide Odd Rhizosphere of Reduced fron Reduction	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)	W (N (N D) S	Ac-Neutral T	Leaves (I A, and 4B erns (B10) dater Table able on Ae rosition (D3) ard (D3) rest (D5) bunds (D6)	B9) B9) Comparison of the co	, gery (C	9)	
AYDROLOGY Vetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis	ninimum of one (A1) able (A2) (B1) bosits (B2) (B3) crust (B4) (B5) cracks (B6) citaled Concave	nagery (E		Water-S (except Salt Crue Aquatic Hydroge Oxidized Presenc Recent I Stunted	MLRA 1, 2, st (B11) Invertebrates in Sulfide Odd Rhizospher e of Reduced fron Reduction Stresses I	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)	W (N (N D) S	rater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo	Leaves (I A, and 4B erns (B10) dater Table able on Ae rosition (D3) ard (D3) rest (D5) bunds (D6)	B9) B9) Comparison of the co	, gery (C	9)	
AYDROLOGY Vetland Hydrology Sauration (A3 Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Vetland Vetl	ninimum of one (A1) able (A2) (B1) (B1) oosits (B2) (B3) crust (B4) (B5) cracks (B6) dible on Aerial Intertated Concave	nagery (E		Water-S (except Salt Cru: Aquatic Hydroge Oxidized Presenc Recent Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates in Sulfide Odd Rhizospher e of Reduced fron Reduction Stresses I	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	iving Roots (C3) Soils (C6)	W (N (N D) S	rater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo	Leaves (I A, and 4B erns (B10) dater Table able on Ae rosition (D3) ard (D3) rest (D5) bunds (D6)	B9) B9) Comparison of the co	, gery (C	9)	
IYDROLOGY Vetland Hydrology rimary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege ield Observations:	ninimum of one r (A1) able (A2) b) B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial Inetated Concave cent? Yes	nagery (E Surface		Water-S (except Salt Crus Aquatic Hydroge Oxidized Presenc Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates in Sulfide Odd Rhizospherie of Reduced fron Reduction Stresses I explain in Rer	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1 marks)	Soils (C6)	W (N (N D) S	rater-Stained ILRA 1, 2, 4, rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo	Leaves (I A, and 4B erns (B10) dater Table able on Ae rosition (D3) ard (D3) rest (D5) bunds (D6)	B9) B9) Comparison of the co	, gery (C	9)	
AYDROLOGY Vetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Vater Table Present Saturation Present?	ninimum of one r (A1) able (A2) b) B1) cosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial Inetated Concave cent? Yes Yes	nagery (E Surface		Water-S (except Salt Crue Aquatic Hydroge Oxidized Presenc Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates on Sulfide Odd Rhizospherie of Reduced fron Reduction Stresses I explain in Rer	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1	Soils (C6)	W (N (N D) S	rater-Stained ILRA 1, 2, 4. rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo rost-Heave H	Leaves (I A, and 4B erns (B10) dater Table ible on Ae dosition (Di ard (D3) rest (D5) punds (D6) lummocks	B9) B9) Comparison of the co	, gery (C	99) No	
AYDROLOGY Vetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Veter Table Present Saturation Present? Includes capillary fri	ninimum of one (A1) able (A2) b) B1) rosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial Inetated Concave ent? Yes ent? Yes nge)	nagery (E Surface o		Water-S (except Salt Crus Aquatic Hydroge Oxidized Presenc Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates on Sulfide Odd Rhizosphere of Reduced from Reduction Stresses In Explain in Rerusth (inches): ath (inches):	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1 marks) surface surface	Soils (C6)) (LRR A) Wee	W (N	rater-Stained ILRA 1, 2, 4. rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo rost-Heave H	Leaves (I A, and 4B erns (B10) dater Table ible on Ae dosition (Di ard (D3) rest (D5) punds (D6) lummocks	B9) e (C2) rial Imag 2) (LRR A	A)		
HYDROLOGY Wetland Hydrology Primary Indicators (n Surface Water High Water Ta Saturation (A3 Water Marks (Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis	ninimum of one (A1) able (A2) b) B1) rosits (B2) (B3) crust (B4) (B5) cracks (B6) cible on Aerial Inetated Concave ent? Yes ent? Yes nge)	nagery (E Surface o		Water-S (except Salt Crus Aquatic Hydroge Oxidized Presenc Recent I Stunted Other (E	MLRA 1, 2, st (B11) Invertebrates on Sulfide Odd Rhizosphere of Reduced from Reduction Stresses In Explain in Rerusth (inches): ath (inches):	4A, and 4 s (B13) or (C1) es along L d Iron (C4) on in Tilled Plants (D1 marks) surface surface	Soils (C6)) (LRR A) Wee	W (N	rater-Stained ILRA 1, 2, 4. rainage Patte ry-Season W aturation Visi eomorphic P nallow Aquita AC-Neutral T aised Ant Mo rost-Heave H	Leaves (I A, and 4B erns (B10) dater Table ible on Ae dosition (Di ard (D3) rest (D5) punds (D6) lummocks	B9) e (C2) rial Imag 2) (LRR A	A)		

Project Site:	Lynnwood Link	<u>Extension</u>					City/Cou	nty:	Lynn	wood/Si	nohomish	Sa	mpling I	Date:	4/5/	12	
Applicant/Owner:	Sound Transit									S	tate: WA	Sa	mpling l	Point:	WL	Y3-SF	22
Investigator(s):	M. Maynard, C	. Worsley							Se	ection, T	ownship, R	ange:	S21, T	27N, R4E			
Landform (hillslope, te	rrace, etc.):					Loc	al relief (cond	cave,	conve	x, none)	: conve	<u>x</u>		Slope	e (%):	<u>15</u>	
Subregion (LRR):	<u>A</u>		Lat:	<u>47.80</u>	78332	<u> 24500</u>			Long:	-122.30	471790300	<u>)</u>		Datum:	NAD8	<u>3</u>	
Soil Map Unit Name:	Urban Land										NWIc	lassific	ation:	<u>Upland</u>			
Are climatic / hydrolog	ic conditions on	the site typical for	this time	e of y	ear?	١	∕es □]	No		lf no, explai	in in Re	marks.))			
Are Vegetation □,	, Soil □,	or Hydrology	□, sig	gnifica	antly di	isturbe	d? Are	"Norr	mal Ci	rcumstar	nces" prese	ent?		Yes	\boxtimes	No	
Are Vegetation ,	, Soil □,	or Hydrology	□, na	turall	y prob	lematic	? (If ne	eede	d, expl	lain any	answers in	Remar	ks.)				
SUMMARY OF FIN	IDINGS – Atta	ach site map sł	nowing	sam	pling	g poin	t locations	, tra	nsect	ts, imp	ortant fea	tures	etc.				
Hydrophytic Vegetatio	n Present?		Yes		No	\boxtimes											
Hydric Soil Present?			Yes		No	\boxtimes	Is the Sam within a W							Yes		No	\boxtimes
Wetland Hydrology Pre	esent?		Yes		No	\boxtimes		otiai									
Remarks: The same	ple plot is locat	ed approximatel	/ 8 feet ı	north	east,	upslop	e of the tras	sh tra	ap.								
					,				•								
VEGETATION – Us	se scientific n	names of plants															
Tree Stratum (Plot siz	.e: <u>10M</u>)		Absolut % Cove		Domi Speci		Indicator Status	Do	omina	nce Tes	t Workshe	et:					
1. <u>Pdeudotsuga men</u>	<u>ızesii</u>		<u>45</u>		yes		FACU	Νι	umber	of Domi	nant Specie	es		4			(4)
2. Acer macrophyllur	<u>m</u>		<u>20</u>		<u>yes</u>		<u>FACU</u>	Th	nat Are	OBL, F	ACW, or FA	AC:		<u>1</u>			(A)
3. <u>Populus balsamife</u>	<u>era</u>		<u>20</u>		<u>yes</u>		<u>FAC</u>	Тс	otal Nu	mber of	Dominant			4			(B)
4								Sp	pecies	Across /	All Strata:			<u>4</u>			(D)
50% = <u>42.5</u> , 20% = <u>17</u>	<u>7</u>		<u>85</u>		= Tota	al Cove	er				nant Specie			<u>25</u>			(A/B)
Sapling/Shrub Stratun	<u>n</u> (Plot size: <u>5M</u>)							Th	nat Are	OBL, F	ACW, or FA	AC:		20			(700)
1								Pr	evaler	nce Inde	x workshe	eet:					
2										Tota	al % Cover	of:		Multip	ly by:		
3								OI	BL spe	cies		_		x1 =			
4								FA	ACW s	pecies		_		x2 =			
5								FA	AC spe	ecies		_		x3 =			
50% =, 20% =					= Tota	al Cove	er	FA	ACU sp	pecies		_		x4 =		_	
Herb Stratum (Plot siz	:e: <u>2M</u>)							UF	PL spe	cies		_		x5 =		_	
Ranunculus reper	<u>1S</u>		<u>2</u>		<u>no</u>		FACW	Co	olumn '	Totals:		(A)				(E	3)
2											Prevalen	ce Inde	ex = B/A	.=			
3								Ну	ydropł	nytic Ve	getation In	dicato	rs:				
4									1 –	- Rapid 1	est for Hyd	drophyt	ic Vege	tation			
5									2 -	Domina	nce Test is	>50%					
6									₃₋	Prevale	nce Index is	s <u><</u> 3.0 ¹					
7											logical Ada				ting		
8									•	data in I	Remarks or	on a s	eparate	sheet)			
9									5 -	Wetland	d Non-Vasc	ular Pla	ants ¹				
10									l _{Pro}	oblemati	c Hydrophy	rtic Veg	etation ¹	(Explain)			
11								1,	!: 4 .		dric soil and						
$50\% = \underline{1}, 20\% = \underline{0.4}$			<u>2</u>		= Tota	al Cove	er				anc son and ss disturbed						
Woody Vine Stratum ((Plot size: <u>5M</u>)																
1. Rubus armeniacus	<u>s</u>		<u>10</u>		<u>yes</u>		<u>FACU</u>	١		4.							
2. <u>Hedera helix</u>			<u>5</u>		<u>no</u>		NL (UPL)	-	ydropl egetati	-		Yes			No		\boxtimes
50% = 7.5, 20% = 3			<u>15</u>		= Tota	al Cove	er		esent			.00					
% Bare Ground in Her	rb Stratum 80																
		or less absolute o	overage	were	not co	onsider	ed dominant	. The	e 1988	Region	9 National	Wetlar	d Plant	List and 19	993 S	uppler	nent
were us	sed for this delin	eation.															

nches) Co	or (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	9		Rema	arks		
0-10	10YR 2/1	100				.,,,,,		Sa Loa						
	2.5Y 4/4	100						Gr Cl Lo		_				
				_					_	_				
										_				
				_						_				
				_						_				
				_						_				
				_						_				
					S=Covered or Coa	ited Sand C	Grains. ² Lo		=Pore Lining,			_	3	
dric Soil Indicat	ors: (Applicab	le to all L	_		-				icators for Pr		Hydri	c So	ils":	
Histosol (A1)	(40)				ndy Redox (S5)				2 cm Muc		(TEO)			
Histic Epiped Black Histic (pped Matrix (S6) Imy Mucky Mineral	I (E1) (ove	ont MI D A 1\			nt Material Iow Dark S	, ,	/T = 1	2)	
Hydrogen Su	•				my Gleyed Matrix	. , .	ept wilka i)		-	plain in Rei		(111	2)	
, ,	ow Dark Surfac	e (A11)			oleted Matrix (F3)	(1 Z)			Other (LX	piaiii iii ivei	marks)			
Thick Dark S		, , , , ,		-	dox Dark Surface ((F6)								
Sandy Mucky					oleted Dark Surfac				licators of hyd				ıd	
Sandy Gleye	d Matrix (S4)			-	dox Depressions (I				wetland hydro unless disturb					
strictive Layer (if present):									20 21				
oe:														
											_			
epth (inches):							Hydric Soils Pi	resent?		Yes			No	
ppth (inches): emarks:							Hydric Soils Pi	resent?		Yes			No	<u>k</u>
pth (inches): marks:	y Indicators:						Hydric Soils Pr	resent?		Yes			No	
pth (inches): marks: /DROLOGY etland Hydrolog mary Indicators (minimum of one	∍ required					Hydric Soils Pr	Seco	ndary Indicato	ors (2 or me	ore req	uired		
pth (inches): marks: /DROLOGY etland Hydrolog mary Indicators (Surface Wate	minimum of one er (A1)	∍ required	l; check all ti	Wa	ter-Stained Leaves	s (B9)		Seco	Water-Staine	ors (2 or mo	ore req	uired		
Pth (inches): marks: PROLOGY etland Hydrolog mary Indicators (Surface Wate High Water T	minimum of one er (A1) able (A2)	∍ required		Wa (ex	ter-Stained Leaves	s (B9)		Secon	Water-Staine	ors (2 or mo ed Leaves (4 A, and 4	ore req (B9)	uired		×
Pth (inches): PDROLOGY Petland Hydrolog mary Indicators (Surface Wate High Water T Saturation (A	minimum of one er (A1) Table (A2) 3)	∍ required		Wa (exc Sal	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11)	s (B9) 1A, and 4 B		Secon	Water-Staine (MLRA 1, 2, Drainage Par	ors (2 or mo ed Leaves (4A, and 4 E tterns (B10	ore req (B9) B)	uired		<u> </u>
DROLOGY Itland Hydrolog mary Indicators (Surface Watt High Water T Saturation (A) Water Marks	minimum of one er (A1) Table (A2) 3) (B1)	e required		Wa (exc Sali Aqu	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates	s (B9) 4A, and 4B (B13)		Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season	ors (2 or mo ed Leaves (4A, and 4I tterns (B10 Water Tabl	ore req (B9) B)))		1)	<u> </u>
Poth (inches): marks: POROLOGY Potland Hydrolog mary Indicators (Surface Wate High Water T Saturation (A Water Marks Sediment De	minimum of one or (A1) Table (A2) Table (B1) Table (B2)	∍ required		Wa (exc Sali Aqu Hyd	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd	s (B9) 1A, and 4B (B13) or (C1)	3)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi	ors (2 or mo od Leaves (4A, and 4B tterns (B10 Water Tabl sible on Ae	ore req (B9) B)) le (C2) erial Ima		1)	
pth (inches): marks: "DROLOGY etland Hydrolog mary Indicators (Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits	minimum of one or (A1) Table (A2) (B1) posits (B2) s (B3)	∍ required		Wa (exc Sali Aqu Hyd	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) latic Invertebrates drogen Sulfide Odd dized Rhizosphere	s (B9) 1A, and 4B (B13) or (C1) es along Li	3)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic	ors (2 or mo ad Leaves (4A, and 4B tterns (B10 Water Tabl sible on Ae Position (D	ore req (B9) B)) le (C2) erial Ima		1)	
PROLOGY etland Hydrolog mary Indicators (Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposit: Algal Mat or	minimum of one er (A1) Table (A2) 3) (B1) posits (B2) s (B3) Crust (B4)	∍ required		Wa (exc Salt Aqu Hyd Oxi Pre	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4)	3) ving Roots (C3)	Secon □	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui	ors (2 or mored Leaves (4A, and 4E) tterns (B10 Water Table sible on Ae Position (D ttard (D3)	ore req (B9) B)) le (C2) erial Ima		1)	
Popper (inches): Popper (inch	minimum of one er (A1) Table (A2) Table (A2) Table (B1) Table (B3) Table (B4) Table (B4) Table (B4) Table (B4) Table (B4) Table (B5)	e required		Wa (exc Sali Aqu Hyc Oxi Pre	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction	s (B9) 4A, and 4B (B13) or (C1) es along Lir I Iron (C4) n in Tilled \$	3) ving Roots (C3) Soils (C6)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral	ors (2 or mondated Leaves (44A, and 48 otterns (B10 Water Tables on Ae Position (D3) Test (D5)	ore req (B9) B))) le (C2) erial Ima	ager	1)	
Poper (inches): Poper	minimum of one er (A1) Table (A2) (B1) posits (B2) s (B3) Crust (B4) s (B5) Cracks (B6)			Wa (ex: Sali Aqu Hyc Oxi Pre Rec Stu	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction nted or Stresses P	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1)	3) ving Roots (C3) Soils (C6)	Secon □	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui	ors (2 or moded Leaves (4A, and 4B) tterns (B10) Water Table sible on Ae Position (D3) Test (D5) Mounds (D6)	ore req (B9) B) I) Ie (C2) erial Ima (22)	ager	1)	
Popth (inches): Sufface Water Marks Sediment De Drift Deposite Algal Mat or Iron Deposite Surface Soil Inundation V	minimum of one er (A1) Table (A2) Table (A2) Table (B1) Table (B3) Table (B4) Table (B4) Table (B4) Table (B4) Table (B4) Table (B5)	lmagery (I		Wa (ex: Sali Aqu Hyc Oxi Pre Rec Stu	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1)	3) ving Roots (C3) Soils (C6)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or moded Leaves (4A, and 4B) tterns (B10) Water Table sible on Ae Position (D3) Test (D5) Mounds (D6)	ore req (B9) B) I) Ie (C2) erial Ima (22)	ager	1)	
Popth (inches): Popth	minimum of one er (A1) Table (A2) 3) (B1) posits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) sible on Aerial getated Concav	lmagery (I		Wa (ex: Sali Aqu Hyc Oxi Pre Rec Stu	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction nted or Stresses P	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1)	3) ving Roots (C3) Soils (C6)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or moded Leaves (4A, and 4B) tterns (B10) Water Table sible on Ae Position (D3) Test (D5) Mounds (D6)	ore req (B9) B) I) Ie (C2) erial Ima (22)	ager	1)	
Popth (inches): Popth	minimum of one er (A1) Table (A2) 3) (B1) posits (B2) 5 (B3) Crust (B4) 6 (B5) Cracks (B6) disible on Aerial getated Concave 5:	lmagery (I		Wa (ex. Sali Aqu Hyc Oxi Pre Rec Stu Oth	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction nted or Stresses P	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1)	3) ving Roots (C3) Soils (C6)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or moded Leaves (4A, and 4B) tterns (B10) Water Table sible on Ae Position (D3) Test (D5) Mounds (D6)	ore req (B9) B) I) Ie (C2) erial Ima (22)	ager	1)	
pth (inches): marks: "DROLOGY etland Hydrolog mary Indicators (Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Vegeld Observations	minimum of one er (A1) Table (A2) 3) (B1) posits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) disible on Aerial eletated Concave s: ent? Yes	Imagery (I	B7) (B8)	Wa (ex: Sali Aqu Hyc Oxi Pre Rec Stu Oth	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction nted or Stresses P er (Explain in Rem	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1)	3) ving Roots (C3) Soils (C6)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or moded Leaves (4A, and 4B) tterns (B10 Water Tables) to the control of t	ore req (B9) B) I) Ie (C2) erial Ima (22)	ager	1)	
PyDROLOGY etland Hydrolog imary Indicators (Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V	minimum of one er (A1) Table (A2) 3) (B1) posits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) disible on Aerial eletated Concave s: ent? Yes	Imagery (I	B7) (B8)	Wa (ex: Sali Aqu Hyc Oxi Pre Rec Stu Oth	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) uatic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction nted or Stresses P er (Explain in Rem	s (B9) 4A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1)	Soils (C6)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M	ors (2 or moded Leaves (44, and 48 tterns (B10 Water Tables) as a position (D3) Test (D5) founds (D6) Hummocks	ore req (B9) B) I) Ie (C2) erial Ima (22)	agery	1)	
Popth (inches): Popth	minimum of one er (A1) Table (A2) (B1) posits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) disible on Aerial petated Concave s: hent? Yes or yes	Imagery (I	B7)	Waa (ex) Salt Aqu Hyc Oxi Pre Rec Stu Oth	ter-Stained Leaves cept MLRA 1, 2, 4 t Crust (B11) latic Invertebrates drogen Sulfide Odd dized Rhizosphere sence of Reduced cent Iron Reduction nted or Stresses P er (Explain in Rem Depth (inches): Depth (inches):	s (B9) 1A, and 4B (B13) or (C1) es along Li I Iron (C4) n in Tilled S Plants (D1) narks)	ving Roots (C3) Soils (C6) (LRR A)	Secon	Water-Staine (MLRA 1, 2, Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC-Neutral Raised Ant M Frost-Heave	ors (2 or moded Leaves (44, and 48 tterns (B10 Water Tables) as a position (D3) Test (D5) founds (D6) Hummocks	ore req (B9) B))) le (C2) erial Ima (D2) (LRR S) (LRR	agery	y (C9)	

Project Site:	Lynnwood Link Extension			City/Cour	nty: <u>Lynnwood/Snohomish</u>	Sampling Date:	4/9/12	
Applicant/Owner:	Sound Transit				State: WA	Sampling Point:	WLY4-	-SP1
Investigator(s):	M. Maynard				Section, Township, Ra	ange: <u>S21, T27N, R4E</u>	•	
Landform (hillslope, te	rrace, etc.):		Loca	al relief (cond	cave, convex, none): concav	<u>e</u> Slop	oe (%): <u>0</u>	
Subregion (LRR):	<u>A</u>	Lat: <u>47.8</u>	31675583500		Long: <u>-122.30002669800</u>	Datum:	NAD83	
Soil Map Unit Name:	McKenna Gravelly Silt Loam				NWI cla	assification: PEM fr	<u>inge</u>	
Are climatic / hydrolog	ic conditions on the site typical f	or this time of	year? Y	es 🗆	No	n in Remarks.)		
Are Vegetation □,	Soil □, or Hydrology	☐, signifi	cantly disturbed	d? Are '	'Normal Circumstances" preser	nt? Yes	⊠ N	lo 🗆
Are Vegetation \square ,	Soil □, or Hydrology	☐, natura	Illy problematic	? (If ne	eeded, explain any answers in F	Remarks.)		
SUMMARY OF FIN	DINGS – Attach site map	showing sa	mpling point	locations	transects, important feat	ures, etc.		
Hydrophytic Vegetation	n Present?	Yes 🗵		la tha Cami	alad Araa			
Hydric Soil Present?		Yes 🛭	No 🗆	Is the Samp within a We		Yes	⊠ N	lo 🗆
Wetland Hydrology Pro	esent?	Yes 🗵	No 🗆					
Remarks: The samp	ole plot is located east of the p	arking lot, ap	oproximately 2	20 feet west	of Scriber Creek in reed cana	rygrass.		
VEGETATION – Us	se scientific names of plan	ts						
Tree Stratum (Plot siz	e: <u>10M</u>)	Absolute <u>% Cover</u>	Dominant Species?	Indicator Status	Dominance Test Workshee	t:		
1. <u>Populus balsamife</u>	e <u>ra</u>	30	<u>yes</u>	FAC	Number of Dominant Species	2		
2	_				That Are OBL, FACW, or FA			(A)
3.					Total Number of Dominant			
4.					Species Across All Strata:	<u>4</u>		(B)
50% = <u>15</u> , 20% = <u>6</u>		30	= Total Cove	<u></u>	Percent of Dominant Species	:		
Sapling/Shrub Stratum	n (Plot size: <u>5M</u>)	_			That Are OBL, FACW, or FA			(A/B)
1. <u>Salix lucida</u>		<u>10</u>	<u>yes</u>	FACW	Prevalence Index workshee	 et:		
2. Cornus sericea		<u></u>	<u>yes</u>	FACW	Total % Cover o	f: Multir	oly by:	
3		_			OBL species	x1 =		
4.					FACW species	x2 =		
5.			<u> </u>		FAC species	x3 =		
50% = <u>17.5</u> , 20% = <u>7</u>		<u>35</u>	= Total Cove	r	FACU species	x4 =		
Herb Stratum (Plot siz	re: 2M)	<u>—</u>			UPL species	x5 =		
Phalaris arundinad		<u>75</u>	<u>yes</u>	FACW		_ (A)		_ (B)
2	<u></u>	<u>10</u>	<u>700</u>	171011	Column Totals:	ee Index = B/A =		_ (D)
3					Hydrophytic Vegetation Inc			
4.					1 – Rapid Test for Hydi			
5					2 - Dominance Test is:	-		
6								
					☐ 3 - Prevalence Index is	_		
7					4 - Morphological Adap	otations ¹ (Provide suppo on a separate sheet)	rting	
8					l <u> </u>			
9					5 - Wetland Non-Vascu			
10					☐ Problematic Hydrophyt	ic Vegetation ¹ (Explain))	
11					¹ Indicators of hydric soil and	wetland hydrology mus	·t	
50% = 37.5, 20% = 15	=	<u>75</u>	= Total Cove	r	be present, unless disturbed			
Woody Vine Stratum (Plot size: <u>5M</u>)							
1					Lydrophytic			
2					Hydrophytic Vegetation	Yes 🖂	No	
50% =, 20% =			= Total Cove	r	Present?	_		_
% Bare Ground in Her	b Stratum 10							
Remarks: T	he 1988 Region 9 National Wet	and Plant List	and 1993 Sup	plement were	e used for this delineation.			
1								

inches) Co	color (moist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture			Remar	rks		
0-20	10YR 2/1			<u> </u>	- <u> </u>			Mu Sil	t with hi	gh organic	c conter	<u>nt</u>		
									_					
				_					-					
				_						•				
									-	•				
			_	_										
			_	_										
•					S=Covered or Coa	ated Sand	d Grains. 'L		Pore Lining,				2	
	ators: (Applicab	ie to all L		_	-				cators for Pro		Hydric	Soil	s°:	
Histosol (A1					ndy Redox (S5)				2 cm Muck					
Histic Epipe					ripped Matrix (S6)	. (54) (- 4 **! D A 4\		Red Paren		` '			
Black Histic				_	amy Mucky Minera	. , .	xcept MLKA 1)		Very Shall		-	TF12	2)	
Hydrogen S	* *	/A 44\		_	amy Gleyed Matrix	x (F2)			Other (Exp	lain in Rer	marks)			
	elow Dark Surface	∋ (A11)		_	pleted Matrix (F3)	(=0)								
	Surface (A12)				dox Dark Surface			³ India	cators of hydr	onhvtic ve	aetation	n and	ı	
=	ky Mineral (S1)			_	pleted Dark Surface	` '		W	etland hydrol	ogy must b	be prese		•	
	ed Matrix (S4)			, Re	dox Depressions ((F0)	1	ur	nless disturbe	ed or probl	ematic.			
strictive Layer e:	(II present).													
e.											_			
	anics are at vario	us stages	of decomp	position			Hydric Soils F	Present?		Yes			No	
marks: Orga		us stages	of decomp	position			Hydric Soils F	Present?		Yes			No	
marks: Orga OROLOGY etland Hydrolog	gy Indicators:				JIA		Hydric Soils F		dary Indicato					
marks: Orga 'DROLOGY etland Hydrolog mary Indicators	gy Indicators: s (minimum of one		l; check all	that app		25 (RQ)	Hydric Soils F	Secon	dary Indicato	rs (2 or ma	ore requ			
DROLOGY tland Hydrolog mary Indicators Surface Wa	gy Indicators: s (minimum of one ater (A1)			that app	ater-Stained Leave	. ,		Secon	Water-Stained	rs (2 or mo	ore requ			
TDROLOGY Itland Hydrolog mary Indicators Surface Wa High Water	egy Indicators: s (minimum of one ater (A1) · Table (A2)		l; check all	that app	ater-Stained Leave	. ,		Secon.	Water-Stained	rs (2 or mo d Leaves (lA, and 4E	ore requ (B9) 3)			
"DROLOGY etland Hydrolog mary Indicators Surface Wa High Water Saturation (rgy Indicators: s (minimum of one ater (A1) Table (A2)		l; check all	that app	ater-Stained Leave scept MLRA 1, 2, It Crust (B11)	4A, and 4		Secon	Water-Stained (MLRA 1, 2, 4 Drainage Patt	rs (2 or mo d Leaves (AA, and 4E erns (B10)	ore requ (B9) 3)			
"DROLOGY etland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark	rgy Indicators: s (minimum of one ater (A1) Table (A2)		l; check all	that app Wa (ex) Sa Aq	ater-Stained Leave	4A, and 4		Secon	Water-Stained	rs (2 or mo d Leaves (l A, and 4E erns (B10) Vater Tabl	ore requ (B9) (B9) (B) (B)	uired)		
DROLOGY tland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark	gy Indicators: s (minimum of one ater (A1) Table (A2) (A3) (S (B1) Deposits (B2)		l; check all	that app Wa (ex) Sa Aq Hy	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates	4A, and 4 s (B13) dor (C1)	4B)	Second (Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V	rs (2 or mo d Leaves (l A, and 4E erns (B10) Vater Tabl ible on Ae	ore requ B9) 3)) e (C2) erial Ima	uired)		
"DROLOGY etland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark Sediment D	rgy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3)		l; check all	that app Wa (ex) Sa Aq Hy Ox	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od	4A , and 4 s (B13) dor (C1) res along	4B) Living Roots (C3	Second V (Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis	rs (2 or mod Leaves (14A, and 4E erns (B10) Vater Tablible on Ae Position (D	ore requ B9) 3)) e (C2) erial Ima	uired)		
PROLOGY etland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi	rgy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4)		l; check all	that app (ex Aq Hy Ox Pre	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od idized Rhizospher	4A, and 4 s (B13) dor (C1) res along d d Iron (C4	4B) Living Roots (C3	Second	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F	rs (2 or mod d Leaves (1 of Lea	ore requ B9) 3)) e (C2) erial Ima	uired)		
PROLOGY etland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi	rgy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4)		d; check all	that app (ex Aq Hy Ox Pre	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od didized Rhizospher esence of Reduced	4A, and 4 s (B13) for (C1) res along to d Iron (C4 on in Tilled	4B) Living Roots (C3 4) d Soils (C6)	Second	Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit	rs (2 or mod Leaves (BA, and 4E erns (B10) Vater Tablible on Ae Position (Dard (D3) Fest (D5)	ore requ (B9) 3)) le (C2) erial Ima	uired)		
PROLOGY Petland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi	egy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4) its (B5)	e required	d; check all	that app Wa (ex) Sa Aq Hy Ox Pre	ter-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od didized Rhizospher esence of Reduced ccent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3 4) d Soils (C6)	Seconi	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (PA, and 4E erns (B10) Vater Tablible on Ae Position (Dard (D3) Fest (D5) ounds (D6)	ore requises (B9) (B9) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C5) (C5) (C6) (C7) (C7) (C7) (C7) (C7) (C7) (C7) (C7	uired)		
"DROLOGY etland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation N	gy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4) its (B5) il Cracks (B6)	e required	l; check all	that app Wa (ex) Sa Aq Hy Ox Pre	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od idized Rhizospher esence of Reduced ccent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3 4) d Soils (C6)	Seconi	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (PA, and 4E erns (B10) Vater Tablible on Ae Position (Dard (D3) Fest (D5) ounds (D6)	ore requises (B9) (B9) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C5) (C5) (C6) (C7) (C7) (C7) (C7) (C7) (C7) (C7) (C7	uired)		
PROLOGY Setland Hydrolog mary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve	rgy Indicators: s (minimum of one ater (A1) r Table (A2) (A3) ss (B1) Deposits (B2) its (B3) r Crust (B4) its (B5) il Cracks (B6) Visible on Aerial I	e required	l; check all	that app Wa (ex) Sa Aq Hy Ox Pre	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od idized Rhizospher esence of Reduced ccent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3 4) d Soils (C6)	Seconi	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (PA, and 4E erns (B10) Vater Tablible on Ae Position (Dard (D3) Fest (D5) ounds (D6)	ore requises (B9) (B9) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C5) (C5) (C6) (C7) (C7) (C7) (C7) (C7) (C7) (C7) (C7	uired)		
Properties of the control of the con	rgy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) or Crust (B4) its (B5) il Cracks (B6) Visible on Aerial I egetated Concave	e required	d; check all	that app Wa (ex) Sa Aq Hy Ox Pre	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od idized Rhizospher esence of Reduced ccent Iron Reduction	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3 4) d Soils (C6)	Seconi	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (PA, and 4E erns (B10) Vater Tablible on Ae Position (Dard (D3) Fest (D5) ounds (D6)	ore requises (B9) (B9) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C5) (C5) (C6) (C7) (C7) (C7) (C7) (C7) (C7) (C7) (C7	uired)		
Properties of the control of the con	egy Indicators: s (minimum of one ater (A1) Table (A2) (A3) ss (B1) Deposits (B2) its (B3) or Crust (B4) its (B5) il Cracks (B6) Visible on Aerial I egetated Concave ns: esent? Yes	e required	d; check all	that app (ex) Aq Hy Cx Re Stu	teter-Stained Leave teept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od idized Rhizospher esence of Reduced ident Iron Reduction unted or Stresses I ther (Explain in Ref	4A, and 4 s (B13) dor (C1) res along l d Iron (C4 on in Tilled	4B) Living Roots (C3 4) d Soils (C6)	Seconi	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (PA, and 4E erns (B10) Vater Tablible on Ae Position (Dard (D3) Fest (D5) ounds (D6)	ore requises (B9) (B9) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C5) (C5) (C6) (C7) (C7) (C7) (C7) (C7) (C7) (C7) (C7	uired)		
YDROLOGY etland Hydrologimary Indicators Surface Water High Water Mark Sediment D Drift Deposi Algal Mat or I ron Deposi Surface Soi I nundation N Sparsely Vereld Observation urface Water Presentaturation Present	rgy Indicators: s (minimum of one ater (A1) r Table (A2) (A3) ss (B1) Deposits (B2) sits (B3) sr Crust (B4) sits (B5) sil Cracks (B6) Visible on Aerial I egetated Concave ns: esent? Yes ent? Yes	e required	t; check all	that app Wa (ex Aq Hy Cx Re Ctl	ter-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od didized Rhizospher esence of Reduced cent Iron Reduction unted or Stresses I her (Explain in Ren	4A, and 4 s (B13) lor (C1) res along id Iron (C4 on in Tilleo Plants (D* marks)	4B) Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Second	Water-Stained (MLRA 1, 2, 4 Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral	rs (2 or mod Leaves (14, and 48 erns (B10) Vater Tabloible on Ae Position (Dard (D3) Fest (D5) ounds (D6 Hummocks	ore requises (B9) (B9) (B) (C2) (B) (C2) (C3) (C3) (C4) (C4) (C4) (C5) (C5) (C6) (C7) (C7) (C7) (C7) (C7) (C7) (C7) (C7	uired)	(C9)	
YDROLOGY etland Hydrologimary Indicators Surface Wa High Water Saturation (Water Mark Sediment D Infit Deposi Infon Deposi Inundation (Sparsely Ve eld Observation urface Water Presented Scaturation Presented	egy Indicators: s (minimum of one ater (A1) Table (A2) (A3) s (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) il Cracks (B6) Visible on Aerial I egetated Concave ns: esent? Yes ent? Yes str? Yes	e required Imagery (I e Surface	d; check all	that app Wa (ex Aq Hy Cx Cx Cx Cy Cy Cy Cy Cy Cy C	ater-Stained Leave ccept MLRA 1, 2, It Crust (B11) uatic Invertebrates drogen Sulfide Od didized Rhizospher esence of Reducer cent Iron Reduction unted or Stresses I her (Explain in Rer Depth (inches):	4A, and 4 s (B13) lor (C1) res along id Iron (C4 on in Tilleo Plants (D* marks) 3 surface	Living Roots (C3 4) d Soils (C6) 1) (LRR A)	Second	Water-Stained (MLRA 1, 2, 4) Drainage Patt Dry-Season V Saturation Vis Geomorphic F Shallow Aquit FAC-Neutral Raised Ant M Frost-Heave H	rs (2 or mod Leaves (14, and 48 erns (B10) Vater Tabloible on Ae Position (Dard (D3) Fest (D5) ounds (D6 Hummocks	ore requibely by the control of the	gery	(C9)	

Project Site:	Lynnwood Link Exte	ension_					City/Cour	nty:	Lynn	nwood/S	nohomish	<u>s</u>	ampling	Date:	4/9/	12	
Applicant/Owner:	Sound Transit									S	tate: WA	<u>A</u> S	ampling	Point:	WL	Y4-SF	22
Investigator(s):	M. Maynard								Se	ection, T	ownship,	Range:	S21, T	27N, R4E			
Landform (hillslope, ter	race, etc.):	_				Loca	al relief (cond	ave,	conve	ex, none)	: conc	cave		Slope	e (%):	<u>1</u>	
Subregion (LRR):	<u>A</u>		Lat:	47.8′	168551	2600		I	Long:	-122.30	0191847	00		Datum: 1	NAD8	<u>3</u>	
Soil Map Unit Name:	McKenna Gravelly	/ Silt Loam									NWI	classifi	cation:	<u>Upland</u>			
Are climatic / hydrologic	c conditions on the s	site typical for	this time	e of y	ear?	Y	′es □		No		If no, expl	lain in R	Remarks	.)			
Are Vegetation \square ,	Soil □, or	Hydrology	□, sig	nifica	antly di	sturbe	d? Are '	'Norn	nal Cir	rcumstar	nces" pres	sent?		Yes	\boxtimes	No	
Are Vegetation □,	Soil □, or	Hydrology	□, na	turall	y probl	lematic	? (If ne	eded	d, expl	lain any	answers i	in Rema	arks.)				
SUMMARY OF FIN	DINGS – Attach	site map sh	nowing	san	npling	j point	t locations	, traı	nsect	ts, imp	ortant fe	eatures	s, etc.				
Hydrophytic Vegetation	n Present?		Yes		No	\boxtimes											
Hydric Soil Present?			Yes		No		Is the Sam							Yes		No	\boxtimes
Wetland Hydrology Pre	esent?		Yes		No	\boxtimes											
Remarks: The samp	le plot is located n	ear the base	of a larg	ge bl	ack co	ottonw	ood, approx	imate	ely 45	feet no	rthwest o	of WLY	4-SP1.				
VEGETATION – Us	e scientific name	es of plants			Dami	2024	Indicator	1									
Tree Stratum (Plot size	e: <u>10M</u>)		Absolut % Cove		Domii Speci		Indicator Status	Do	omina	nce Tes	t Worksh	eet:					
Populus balsamife	<u>ra</u>		<u>50</u>		<u>ves</u>		<u>FAC</u>				nant Spec			<u>1</u>			(A)
2. Pseudotsuga menz	<u>zesii</u>		<u>20</u>		<u>ves</u>		<u>FACU</u>	Th	at Are	OBL, F	ACW, or F	FAC:		<u>-</u>			(7.1)
3. <u>Alnus rubra</u>			<u>10</u>		<u>no</u>		<u>FAC</u>				Dominant			<u>5</u>			(B)
4. <u>Malus sp.</u>			<u>15</u>		<u>no</u>		NL (UPL)	Sp	ecies	Across /	All Strata:			=			` '
50% = <u>42.5</u> , 20% = <u>17</u>			<u>95</u>		= Tota	al Cove	er				nant Spec			<u>20</u>			(A/B)
Sapling/Shrub Stratum	(Plot size: <u>5M</u>)										ACW, or F						
1. <u>Cornus sericea</u>			<u>5</u>		<u>no</u>		FACW	Pr	evaler		x worksh						
2. <u>Ilex aquifolium</u>			<u>5</u>		<u>no</u>		NL (UPL)				al % Cove	er of:		<u>Multipl</u>	y by:		
3. <u>Prunus Iusitanica</u>			<u>10</u>		<u>yes</u>		NL (UPL)		3L spe					x1 =	_	_	
4										pecies				x2 =			
5						-10			C spe					x3 =		_	
50% = <u>10</u> , 20% = <u>4</u>	01.0		<u>20</u>		= 100	al Cove	er ·			oecies				x4 =			
Herb Stratum (Plot size	э: <u>2М</u>)							UF	PL spe	cies	_			x5 =			
1								Co	olumn '	Totals:		(A)				(E	3)
2								L.					dex = B/	A =			
3									•	•	getation l						
4								l			Test for H			etation			
5											nce Test						
6								╽⊔	Ū		nce Index	_					
7											logical Ad Remarks (vide suppor	ting		
8 9											d Non-Vas		•	3 31.331,			
·								l _						1			
10									Pro	oblemati	c Hydropr	nytic Ve	getation	¹ (Explain)			
11 50% = , 20% =						al Cove		¹ In	dicato	ors of hyd	dric soil ar	nd wetla	and hydr	ology must			
Woody Vine Stratum (I					= 1016	ai Cove	;I	be	prese	ent, unles	ss disturbe	ed or pr	oblemat	ic.			
1. <u>Hedera helix</u>	-10t Size. <u>51vi</u>)		90		VOC		NL (UPL)										
Rubus armeniacus	,		<u>80</u>		<u>yes</u>		FACU	Ну	/droph	hytic							
$50\% = \frac{75}{2}, 20\% = \frac{30}{2}$	<u> </u>		<u>70</u> 150		<u>yes</u>	al Cove	· · · · · · · · · · · · · · · · · · ·	Ve	getati	ion		Yes			No		\boxtimes
	h Otro-to		150		- 100	ai Cove	÷1	Pr	esent'	?							
% Bare Ground in Herb									1000	D!	0 N=6	-1 \\\ -41-	I DI	4 I i = 4 = I A/	200.0		
	pecies with 5% or le ed for this delineation		overage	were	not co	onsider	ed dominant.	ine	9 1988	Region	9 Nationa	ai wetia	and Plan	t List and 19	993 S	uppier	nent
1																	

Depth I	∕latrix				Redox Fea	tures		_					
nches) Color (mo	ist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture			Remark	S	
<u>0-14</u> <u>10YR 3</u>	<u>/1</u>	<u>100</u>						<u>Loam</u>					
<u>14-18</u> <u>10YR 3</u>	<u>/2</u>	<u>100</u>						Loam	w. cob	bles			
				_									
				_									
				_					· —				
				_					· —				
	<u> </u>	 _					2.						
ype: C= Concentration,	· · · · · · · · · · · · · · · · · · ·					oated Sand	Grains. Lo		Pore Lining, I		Haralaia 6	3_:1_3.	
dric Soil Indicators: (A	фрисавіе	to all Li			=				ators for Pro		Hyaric S	oolis":	
Histosol (A1)					ndy Redox (S5)				2 cm Muck		(TEQ)		
Histic Epipedon (A2)					pped Matrix (S6)		cont MI DA 1)		Red Parent		,	E10\	
Black Histic (A3)	4)				my Mucky Miner		cept wilka i)		Very Shallo			F12)	
Hydrogen Sulfide (A Depleted Below Dar	-	Λ11)			my Gleyed Matr bleted Matrix (F3				Other (Exp	iaiii iii Kei	iiaiks)		
Thick Dark Surface		A11)			dox Dark Surface								
Sandy Mucky Miner	,				oleted Dark Surfa			³ Indio	cators of hydro	ophytic ve	getation	and	
Sandy Gleyed Matri					lox Depressions			W	etland hydrolo	ogy must b	e preser		
strictive Layer (if pres	. ,		_	1100	iox Boprocolono	(1 0)		ur	nless disturbe	ed of proble	emauc.		
pe:	,-												
pth (inches):							Hydric Soils P	resent?		Yes		No	
emarks: Concrete rul	bble throug	hout are	a.										
YDROLOGY		hout are	a.										
YDROLOGY etland Hydrology Indic	ators:											0	
YDROLOGY etland Hydrology Indic imary Indicators (minim	ators:		check all		•				dary Indicator			ed)	
YDROLOGY etland Hydrology Indic imary Indicators (minimi Surface Water (A1)	ators: um of one r] Wa	ter-Stained Leav	, ,			Nater-Stained	d Leaves (I	B9)	ed)	
PROLOGY etland Hydrology Indic mary Indicators (minimic Surface Water (A1) High Water Table (A)	ators: um of one r		check all] Wa	ter-Stained Leav	, ,	В)	(Water-Stained	Leaves (I	B9)	ed)	
PDROLOGY Etland Hydrology Indic mary Indicators (minimic Surface Water (A1) High Water Table (A) Saturation (A3)	ators: um of one r		check all] Wa (exc	ter-Stained Leav cept MLRA 1, 2, : Crust (B11)	, 4A, and 4	В)) (Water-Stained MLRA 1, 2, 4 Drainage Patte	Leaves (FA, and 4B)	B9)	ed)	
'DROLOGY Interpretation of the state of the	ators: um of one ro		check all] Wa (exc] Sali] Aqu	ter-Stained Leav cept MLRA 1, 2, c Crust (B11) latic Invertebrate	, 4A , and 4	В)) 1 1 1	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W	d Leaves (I A, and 4B erns (B10) /ater Table	B9) B) e (C2)	·	
PROLOGY etland Hydrology Indic mary Indicators (minimum Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits	ators: um of one ro		check all	Wa (exc Salt Aqu Hyc	ter-Stained Leav cept MLRA 1, 2, c Crust (B11) latic Invertebrate lrogen Sulfide O	, 4A , and 4 es (B13) dor (C1)		V	Water-Stained MLRA 1, 2, 4 Drainage Patto Dry-Season W Saturation Vis	d Leaves (I A, and 4B erns (B10) Vater Table ible on Ae	B9) (C2) (C3)	·	
PDROLOGY etland Hydrology Indic mary Indicators (minimum Surface Water (A1) High Water Table (A) Water Marks (B1) Sediment Deposits Drift Deposits (B3)	ators: um of one ro A2)		check all	Wa (exc Salt Aqu Hyc	ter-Stained Leav cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide O dized Rhizosphe	es (B13) dor (C1) eres along l	_iving Roots (C3	V	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Vis Geomorphic F	d Leaves (I A, and 4B erns (B10) Vater Table ible on Ae Position (D	B9) (C2) (C3)	·	
POROLOGY etland Hydrology Indic imary Indicators (minimi Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (ators: um of one ro A2)		check all	Wa (exc Sali Aqu Hyc Oxi Pre	ter-Stained Leav cept MLRA 1, 2, Crust (B11) latic Invertebrate lrogen Sulfide O dized Rhizosphe sence of Reduce	es (B13) dor (C1) eres along l	Living Roots (C3)		Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Vis Geomorphic F Shallow Aquita	d Leaves (I A, and 4B erns (B10) Vater Table ible on Ae Position (Da ard (D3)	B9) (C2) (C3)	·	
YDROLOGY etland Hydrology Indic imary Indicators (minimi) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (I	ators: um of one ro A2) (B2)		check all	Wa (exe Sale Aqu Hyc Oxi Pre	ter-Stained Leav cept MLRA 1, 2, c Crust (B11) latic Invertebrate drogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled	Living Roots (C3)) I Soils (C6)	V	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1	d Leaves (I AA, and 4B erns (B10) Vater Table ible on Ae Position (Da ard (D3)	B9) (C2) (C3) (C4)	ery (C9)	
YDROLOGY etland Hydrology Indic imary Indicators (minimi Surface Water (A1) High Water Table (a) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks	ators: um of one re A2) (B2) (B2) (B4) (B6)	equired;	check all	Wa (ext) Salt Aqu Hyc Oxi Pre Rec	ter-Stained Leav cept MLRA 1, 2, crust (B11) natic Invertebrate lrogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti nted or Stresses	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D4	Living Roots (C3)) I Soils (C6)		Water-Stained MLRA 1, 2, 4 Drainage Pattr Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1 Raised Ant Mo	d Leaves (I AA, and 4B erns (B10) Vater Table ible on Ae Position (D3) ard (D3) Fest (D5) punds (D6)	B9) B (C2) rial Imag 2)	ery (C9)	
PDROLOGY etland Hydrology India imary Indicators (minimal Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of	ators: um of one re A2) (B2) (B4) (B6) n Aerial Im	equired;	check all	Wa (ext) Salt Aqu Hyc Oxi Pre Rec	ter-Stained Leav cept MLRA 1, 2, c Crust (B11) latic Invertebrate drogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D4	Living Roots (C3)) I Soils (C6)		Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1	d Leaves (I AA, and 4B erns (B10) Vater Table ible on Ae Position (D3) ard (D3) Fest (D5) punds (D6)	B9) B (C2) rial Imag 2)	ery (C9)	
POROLOGY etland Hydrology Indic imary Indicators (minimic Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated	ators: um of one re A2) (B2) (B4) (B6) n Aerial Im	equired;	check all	Wa (ext) Salt Aqu Hyc Oxi Pre Rec	ter-Stained Leav cept MLRA 1, 2, crust (B11) natic Invertebrate lrogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti nted or Stresses	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D4	Living Roots (C3)) I Soils (C6)		Water-Stained MLRA 1, 2, 4 Drainage Pattr Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1 Raised Ant Mo	d Leaves (I AA, and 4B erns (B10) Vater Table ible on Ae Position (D3) ard (D3) Fest (D5) punds (D6)	B9) B (C2) rial Imag 2)	ery (C9)	
POROLOGY Setland Hydrology Indic mary Indicators (minimic Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated	ators: um of one re A2) (B2) (B4) (B6) n Aerial Im	equired;	Check all	Wa (ext) Salt Aqu Hyc Oxi Pre Rec	ter-Stained Leav cept MLRA 1, 2, crust (B11) natic Invertebrate lrogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti nted or Stresses	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D4	Living Roots (C3)) I Soils (C6)		Water-Stained MLRA 1, 2, 4 Drainage Pattr Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1 Raised Ant Mo	d Leaves (I AA, and 4B erns (B10) Vater Table ible on Ae Position (D3) ard (D3) Fest (D5) punds (D6)	B9) B (C2) rial Imag 2)	ery (C9)	
PDROLOGY etland Hydrology Indic mary Indicators (minim: Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated eld Observations: Irface Water Present?	ators: Jim of one ro A2) (B2) B4) (B6) n Aerial Im. Concave S	equired; agery (B Surface (Check all	Wa (ex. [a Aqu] Aqu] Hyc] Oxi] Pre] Rec] Stu] Oth	ter-Stained Leav cept MLRA 1, 2, c Crust (B11) latic Invertebrate drogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses er (Explain in Re	es (B13) dor (C1) eres along l ed Iron (C4 fon in Tilled Plants (D' emarks)	Living Roots (C3)) I Soils (C6)		Water-Stained MLRA 1, 2, 4 Drainage Pattr Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1 Raised Ant Mo	d Leaves (I AA, and 4B erns (B10) Vater Table ible on Ae Position (D3) ard (D3) Fest (D5) punds (D6)	B9) B (C2) rial Imag 2)	ery (C9)	
YDROLOGY etland Hydrology Indic imary Indicators (minimi) Surface Water (A1) High Water Table (A) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Infon Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated eld Observations: urface Water Present? atturation Present?	ators: um of one re A2) (B2) (B4) (B6) n Aerial Ima Concave S	equired; agery (B	check all	Wa (ex) [] Sali [] Aqu [] Hyc [] Oxi [] Pre [] Rec [] Stu [] Oth	ter-Stained Leav cept MLRA 1, 2, c Crust (B11) latic Invertebrate drogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti nted or Stresses er (Explain in Re	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D4 emarks)	Living Roots (C3) I Soils (C6) (LRR A)	V	Water-Stained MLRA 1, 2, 4 Drainage Pattr Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral 1 Raised Ant Mo	d Leaves (I A, and 4B erns (B10) Vater Table ible on Ae Position (Dard (D3) Fest (D5) bounds (D6) Hummocks	B9) B (C2) rial Imag 2)	ery (C9)	lo
YDROLOGY etland Hydrology Indic imary Indicators (minimi Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3) Algal Mat or Crust (Inon Deposits (B5) Surface Soil Cracks Inundation Visible of Sparsely Vegetated eld Observations: urface Water Present? ater Table Present? sturation Present?	ators: um of one re A2) (B2) (B4) (B6) n Aerial Ima Concave S Yes Yes Yes	equired; agery (B	check all	Wa (ex) (ex) (ex) (ex) (ex) (ex) (ex) (ex)	ter-Stained Leav cept MLRA 1, 2, crust (B11) latic Invertebrate drogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses er (Explain in Re Depth (inches): Depth (inches):	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D' ermarks)	Living Roots (C3)) I Soils (C6) () (LRR A)	V	Water-Stainec MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave F	d Leaves (I A, and 4B erns (B10) Vater Table ible on Ae Position (Dard (D3) Fest (D5) bounds (D6) Hummocks	B9) e (C2) rial Imag 2) (LRR A	ery (C9)	lo
PDROLOGY etland Hydrology Indic rimary Indicators (minimal) Surface Water (A1) High Water Table (A1) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B1) Iron Deposits (B5) Surface Soil Cracks Inundation Visible of	ators: um of one re A2) (B2) (B4) (B6) n Aerial Ima Concave S Yes Yes Yes	equired; agery (B	check all	Wa (ex) (ex) (ex) (ex) (ex) (ex) (ex) (ex)	ter-Stained Leav cept MLRA 1, 2, crust (B11) latic Invertebrate drogen Sulfide O dized Rhizosphe sence of Reduce cent Iron Reducti inted or Stresses er (Explain in Re Depth (inches): Depth (inches):	es (B13) dor (C1) eres along led Iron (C4 ion in Tilled Plants (D' ermarks)	Living Roots (C3)) I Soils (C6) () (LRR A)	V	Water-Stainec MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Vis Geomorphic F Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave F	d Leaves (I A, and 4B erns (B10) Vater Table ible on Ae Position (Dard (D3) Fest (D5) bounds (D6) Hummocks	B9) e (C2) rial Imag 2) (LRR A	ery (C9)	lo

Project Site:	Lynnwood Link	Extension					City/Cou	unty:	Lynn	nwood/S	nohomish	Sa	mpling	Date:	4/17	7/12	
Applicant/Owner:	Sound Transit									S	tate: WA	Sa	mpling	Point:	WL	Y6-SF	<u>'1</u>
Investigator(s):	M. Maynard								Se	ection, T	ownship, F	Range:	S21, T	27N, R4E			
Landform (hillslope, te	errace, etc.):	<u></u>				Loca	al relief (con	cave	, conve	ex, none)	: <u>none</u>			Slope	e (%):	<u>1</u>	
Subregion (LRR):	<u>A</u>		Lat:	47.811	7584	<u>4700</u>			Long:	-122.29	76804250	00		Datum:	NAD8	3	
Soil Map Unit Name:	Urban Land										NWI	classific	cation:	<u>PFO</u>			
Are climatic / hydrolog	gic conditions on	the site typical for	this time	e of yea	ar?	Υ	es D	☒	No		If no, expla	ain in R	emarks.)			
Are Vegetation	, Soil □,	or Hydrology	□, sig		-			"Nor	mal Ci	rcumstar	nces" pres	ent?		Yes	\boxtimes	No	
Are Vegetation	, Soil □,	or Hydrology	□, na	turally	proble	ematic	? (If r	neede	ed, expl	lain any	answers ir	n Rema	rks.)				
SUMMARY OF FIN	IDINGS – Atta	ch site map sh	nowing	samp	oling	point	locations	s, tra	ansect	ts, imp	ortant fe	atures	, etc.				
Hydrophytic Vegetation	on Present?		Yes	\boxtimes	No												
Hydric Soil Present?			Yes	\boxtimes	No		Is the San within a W							Yes	\boxtimes	No	
Wetland Hydrology Pr	esent?		Yes	\boxtimes	No			·otiai									
Remarks: The sam	ple plot is locate	ed in the southw	est port	ion of	the w	etland	I, approxim	nately	y 30 fee	et east o	of 208th St	t SW.					-
'			•				,	•									
VEGETATION - U	se scientific n	ames of plants	5														
Tree Stratum (Plot siz	ze: <u>10M</u>)		Absolut % Cove		Domin Specie		Indicator Status	D	omina	nce Tes	t Workshe	eet:					
1. <u>Salix lucida</u>			90		<u>/es</u>	.	FACW	N	umber	of Domi	nant Speci	ies		_			(4)
2. Alnus rubra			<u>15</u>	<u>n</u>	<u>10</u>		<u>FAC</u>				ACW, or F			<u>2</u>			(A)
3				_				T	otal Nu	ımber of	Dominant			2			(D)
4				_				S	pecies	Across A	All Strata:			<u>3</u>			(B)
50% = <u>52.5</u> , 20% = <u>2</u>	<u>1</u>		<u>105</u>	-	- Tota	I Cove	r				nant Speci			<u>66</u>			(A/B)
Sapling/Shrub Stratur	n (Plot size: <u>5M</u>)							Т	hat Are	OBL, F	ACW, or F	AC:		<u>00</u>			(700)
Lonicera involucra	<u>ata</u>		<u>60</u>	У	<u>/es</u>		<u>FAC</u>	P	revaler	nce Inde	x worksh	eet:					
2				-						Tota	al % Cover	r of:		Multip	ly by:		
3				-					BL spe			_		x1 =			
4				-					ACW s	-				x2 =	-		
5				-	_				AC spe			_		x3 =	_	_	
50% = <u>30</u> , 20% = <u>12</u>			<u>60</u>	=	: Tota	I Cove	r		ACU sp			_		x4 =			
Herb Stratum (Plot siz	ze: <u>2M</u>)							U	PL spe	cies	-			x5 =			
1. <u>Carex sp.</u>			<u>2</u>	<u>n</u>	<u>10</u>		Ξ	С	olumn	Totals:		(A)			_	(E	3)
2				-							Prevaler			<i>\</i> =			
3				-						•	getation li						
4				-					_		Γest for Hy			etation			
5				-	—				_		ince Test is						
6				-	—				Ū		nce Index	_					
7				-	—				3 4-		logical Ada Remarks o			vide suppoi	rting		
8				-			—	1_	7 -		d Non-Vas		٠.	onoot			
9				-					_					1			
10				-			—		J Pro	oblemati	c Hydroph	ytic Ve	getation	1 (Explain)			
11				-		ıl Cava		1 li	ndicato	ors of hyd	dric soil an	nd wetla	nd hydro	ology must			
50% = 1, 20% = 0.4 Woody Vine Stratum	(Diet eize: EM)		<u>2</u>	-	: TOIA	l Cove	ı	be	e prese	ent, unles	ss disturbe	ed or pro	oblemati	ic.			
	·		10				FACIL										
Rubus armeniacu 2.	<u> </u>		<u>10</u>	У	<u>/es</u>		<u>FACU</u>	н	ydropl	hytic							
50% = <u>5</u> , 20% = <u>2</u>			10	-		al Cove		V	egetati	ion		Yes		\boxtimes	No		
			<u>10</u>	_	· I Ula	ii Cove	1	P	resent	?							
% Bare Ground in He		-							4000		0.11 11 1	114/ 11	1.01	11.4	200.0		
	species with 5% of sed for this deline	or less absolute c eation.	overage	were r	iot co	nsider	ea aominan	t. In	ie 1988	Region	9 National	ı vvetia	nd Plant	List and 1	993 Si	uppier	nent

SOIL Sampling Point: WLY6-SP1 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features (inches) Color (moist) % Color (moist) % Type¹ Loc2 Texture Remarks 10YR 3/1 5YR 4/6 80 <u>C</u> Si Loam 0-4 20 M <u>4-9</u> 5Y 4/1 <u>60</u> 7.5YR 4/6 <u>40</u> C Μ CI Loam 9-18 5Y 4/1 80 7.5YR 4/6 20 <u>C</u> CI Loam ²Location: PL=Pore Lining, M=Matrix ¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) \boxtimes Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): **Hydric Soils Present?** Yes \boxtimes No Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) \boxtimes High Water Table (A2) (except MLRA 1, 2, 4A, and 4B) (MLRA 1, 2, 4A, and 4B) \boxtimes Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Geomorphic Position (D2) Oxidized Rhizospheres along Living Roots (C3) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) П Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No \boxtimes Depth (inches): \boxtimes Water Table Present? Yes No Depth (inches): 2 Saturation Present? \boxtimes Wetland Hydrology Present? Yes \boxtimes No Yes No Depth (inches): surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

Project Site:	Lynnwood Link	Extension				City/	County	: <u>Lynr</u>	nwood/Sn	<u>ohomish</u>	Samplin	g Date:	4/17	/12	
Applicant/Owner:	Sound Transit								Sta	ate: WA	Samplin	g Point:	WLY	/6-SP	<u>'2</u>
Investigator(s):	M. Maynard							S	ection, To	wnship, Rar	nge: <u>S21,</u>	T27N, R4E			
Landform (hillslope, te	rrace, etc.):				Lo	ocal relief (concav	e, conve	ex, none):	convex		Slope	e (%):	<u>3</u>	
Subregion (LRR):	<u>A</u>		Lat: 4	47.8116	451850	<u>)</u>		Long:	-122.297	775300300		Datum:	NAD83	<u> </u>	
Soil Map Unit Name:	Urban Land									NWI cla	ssification:	<u>Upland</u>			
Are climatic / hydrolog	ic conditions on t	the site typical fo	r this time	of year	r?	Yes	\boxtimes	No	☐ (If	no, explain	in Remark	s.)			
Are Vegetation ☐,	, Soil □,	or Hydrology	☐, sig	nificant	ly disturb	ed?	Are "No	ormal Ci	rcumstan	ces" present	?	Yes	\boxtimes	No	
Are Vegetation □,	, Soil □,	or Hydrology	□, nat	turally p	roblema	tic?	(If need	led, exp	lain any a	inswers in R	emarks.)				
SUMMARY OF FIN	IDINGS – Atta	ch site map s	howing	sampl	ing po	int location	ons, tr	ansec	ts, impo	rtant feati	ures, etc.				
Hydrophytic Vegetatio	n Present?		Yes	\boxtimes	No 🗆										
Hydric Soil Present?			Yes		No 🛛	Is the S		d Area				Yes		No	\boxtimes
Wetland Hydrology Pro	esent?		Yes		No 🛛	l l	a wella	anu r							
Remarks: The samp	ole plot is locate	ed southwest of	the wetla	and . aı	oproxim	ately 10 fe	et east	t of 208	th St SW.	. At edge of	f maintain	ed grass RC)W for	208 th	¹ St
SW.	olo piot lo locato		1110 11011	uu , u _l	орголи.	atoly to lo	, or odo.	. 0. 200	0. 011.	. All dage o	· mamam	ou gruoo rec			•
VEGETATION – Us	se scientific n	ames of plant	s												
Tree Stratum (Plot siz	e: <u>10M</u>)		Absolut <u>% Cove</u>		ominant oecies?	Indica Status		Domina	nce Test	Worksheet	:				
1				_	_					ant Species		<u>2</u>			(A)
2				_	_			That Are	e OBL, FA	CW, or FAC) :	_			()
3				_	_				umber of E			<u>3</u>			(B)
4				_	_		'	Species	Across A	iii Strata:		-			` '
50% =, 20% =				=	Total Co	ver				ant Species	٠.	<u>66</u>			(A/B)
Sapling/Shrub Stratun	<u>n</u> (Plot size: <u>5M</u>)						-		-	•					
1				_				Prevale		k workshee		5.4 10°			
2				_				001	· ·	I % Cover of	<u>:</u>	Multip	y by:		
3				_	_			OBL spe		-		x1 =	-	_	
4 5				-				FACW s	-	-		x2 = x3 =	-	_	
				_	— Total Co			FAC spe						_	
50% =, 20% =				=	Total CC	ivei		FACU s	•			x4 =		_	
Herb Stratum (Plot siz	:e: <u>21VI</u>)		40		_	F40		UPL spe			(4)	x5 =			
1. Holcus lanatus			<u>40</u>	<u>ye</u>		<u>FAC</u>	(Column	Totals:		_ (A)			(E	3)
2. <u>Cardamine oligos</u>			<u>20</u>	<u>ve</u>		<u>FAC</u>	<u> </u>					3/A =			
3. <u>Dactylis glomerata</u>			<u>15</u>	nc		FACU			-	etation Indi					
4. <u>Taraxacum officin</u>	<u>aie</u>		<u>2</u>	nc	<u>)</u>	<u>FACU</u>		_	-	est for Hydro		getation			
5				_	_			_		nce Test is >					
6				_	_					ice Index is					
7				_	_		ı	□ 4-	- Morpholo	ogical Adapt temarks or o	ations ¹ (Pr	ovide suppor	ting		
8				_		-						ate sneet)			
9				_	_			_		Non-Vascul					
10				_				□ Pr	oblematic	Hydrophytic	c Vegetation	on¹ (Explain)			
11				_			1	1 Indicate	ors of hydi	ric soil and v	vetland hvo	drology must			
50% = <u>38.5</u> , 20% = <u>15</u>			<u>77</u>	=	Total Co	ver				s disturbed of					
Woody Vine Stratum (·					=.0									
1. Rubus armeniacus	<u>S</u>		<u>45</u>	<u>ye</u>	<u>es</u>	<u>FACU</u>		Hydrop	hytic						
2				_				Vegetat	-	•	Yes	\boxtimes	No		
50% = 22.5, 20% = 9			<u>45</u>	=	Total Co	over	ı	Present	?						
% Bare Ground in Her															
Remarks:	Grass is mowed/n	naintained. The	1988 Reg	gion 9 N	lational \	Wetland Pla	ant List	and 199	93 Supple	ment were u	used for thi	is delineation	-		

nches) C	Color (moist)	%	Color (m	noist) %	Type ¹	Loc ²	Texture			Remark	S		
0-14	10YR 2/1	100					Loam	<u> </u>					
<u>14-18</u>	10YR 3/2	<u>100</u>					Gr Sa Loa	<u></u>					
					. <u>—</u>								
					<u> </u>								
					·								
				_	· —								
					 _								
·				trix, CS=Covered		d Grains. ² Lo		Pore Lining, I			3		
		ole to all L		otherwise noted	-			ators for Pro		Hydric S	Soils":		
Histosol (A	·			Sandy Redox				2 cm Muck		(TEO)			
Histic Epipe				Stripped Matrix				Red Parent	`	,			
Black Histic	, ,				Mineral (F1) (ex	(Cept WLRA 1)		Very Shallo			F12)		
Hydrogen S	elow Dark Surfac	o (A11)		Loamy Gleyed Depleted Matri				Other (Expl	iain in Ken	narks)			
	Surface (A12)	e (ATT)		Redox Dark Si									
	ky Mineral (S1)			Depleted Dark			³ Indic	ators of hydro	ophytic ve	getation	and		
•	ed Matrix (S4)			Redox Depres			We	etland hydrolo	ogy must b	e preser			
strictive Laye				. todox 2 op. oo			ui	less disturbe	u or proble	emanc.			_
oe:	(· p , .												
oth (inches):						Illustrate Calle D	rocont?		Yes		No		\boxtimes
						Hydric Soils P	i esent :		Tes				
marks:						Hydric Solls P	resent 1		165				_
marks: 'DROLOGY etland Hydrolo	ogy Indicators:		about all the	ot apply)		Hydric Solls P		day Indiantor			rod)		_
/DROLOGY etland Hydrolo mary Indicators	s (minimum of or	e required			LL course (PO)	Hydric Solls P	Second	dary Indicator	rs (2 or mo	ore requir	red)		
TDROLOGY etland Hydrolo mary Indicators Surface W	s (minimum of or ater (A1)	e required	l; check all tha	Water-Stained	` '		Second V	Vater-Stained	rs (2 or mo I Leaves (E	ore requir B9)	red)		
TDROLOGY etland Hydrolo mary Indicators Surface Wa	s (minimum of or ater (A1) r Table (A2)	e required	_	Water-Stained	A 1, 2, 4A, and 4		Second V	Vater-Stained	rs (2 or mo I Leaves (E A, and 4B	ore requir B9)	red)		
TDROLOGY Itland Hydrolo mary Indicators Surface Watel High Watel Saturation	s (minimum of or ater (A1) r Table (A2) (A3)	e required		Water-Stained (except MLRA Salt Crust (B1	A 1, 2, 4A , and 4		Second (I	Vater-Stained MLRA 1, 2, 4 Orainage Patte	rs (2 or mo I Leaves (E A, and 4B erns (B10)	ore requin 39)	red)		
"DROLOGY etland Hydrolo mary Indicators Surface Wate High Wate Saturation Water Marl	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1)	e required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte	A 1, 2, 4A, and 4 1) ebrates (B13)		Second (I	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W	rs (2 or mo I Leaves (E A, and 4B erns (B10) /ater Table	ore requir B9) 3) e (C2))	
TDROLOGY Itland Hydrolo mary Indicators Surface Water Saturation Water Mark Sediment I	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2)	e required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulf	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1)	4B)	Second (I	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi	rs (2 or mo I Leaves (E A, and 4B erns (B10) / ater Table ible on Aei	ore requir B9) 3) e (C2) rial Imag)	_
TDROLOGY Interpretation Mater Mart Sediment I Drift Deposit	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3)	e required		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize	A 1, 2, 4A, and 4 1) ebrates (B13) fide Odor (C1) ospheres along	4B) Living Roots (C3	Second (I)	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi	rs (2 or mo d Leaves (B A, and 4B erns (B10) / ater Table ible on Aer Position (D:	ore requir B9) 3) e (C2) rial Imag)	
TDROLOGY Interpretation Mater Mart Sediment I Drift Deposit	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)	e required		Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1)	4B) Living Roots (C3)	Second (I)	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi	rs (2 or mod Leaves (E A, and 4B erns (B10) /ater Table ible on Aed Position (D: ard (D3)	ore requir B9) 3) e (C2) rial Imag))	
Marks: Marks:	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)	e required		Water-Stained (except MLRA Salt Crust (B1) Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4	4B) Living Roots (C3)	Second (I)	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita	rs (2 or model Leaves (B.A., and 4B) erns (B10) dater Table ible on Aerosition (D: ard (D3) Fest (D5)	ore requir 39) 3) e (C2) rial Imag 2)	ery (C9))	
"DROLOGY Itland Hydrolo mary Indicators Surface Water Mari Sediment I Drift Depos Algal Mat of Iron Depos Surface So	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5)		0	Water-Stained (except MLRA Salt Crust (B1) Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tilled esses Plants (D	4B) Living Roots (C3)	Second V (()	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T	rs (2 or mod Leaves (B.A., and 4B erns (B10) / ater Table ible on Aer Position (D2 ard (D3) Fest (D5) ounds (D6)	ore requir B9) B) e (C2) rial Imag 2)	ery (C9)	
"DROLOGY etland Hydrolo mary Indicators Surface Water Mark Saturation Water Mark Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) iil Cracks (B6)	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tilled esses Plants (D	4B) Living Roots (C3)	Second V (()	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	rs (2 or mod Leaves (B.A., and 4B erns (B10) / ater Table ible on Aer Position (D2 ard (D3) Fest (D5) ounds (D6)	ore requir B9) B) e (C2) rial Imag 2)	ery (C9)	
"DROLOGY etland Hydrolo mary Indicators Surface Water Mark Saturation Water Mark Sediment I Drift Depos Algal Mat of Iron Depos Surface So Inundation	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) oil Cracks (B6) Visible on Aerial egetated Concav	Imagery (I		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tilled esses Plants (D	4B) Living Roots (C3)	Second V (()	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	rs (2 or mod Leaves (B.A., and 4B erns (B10) / ater Table ible on Aer Position (D2 ard (D3) Fest (D5) ounds (D6)	ore requir B9) B) e (C2) rial Imag 2)	ery (C9)	
Marks: "DROLOGY etland Hydrolo mary Indicators Surface W: High Wate Saturation Water Marl Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) vil Cracks (B6) Visible on Aerial egetated Concavens:	lmagery (l		Water-Stained (except MLRA Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tilled esses Plants (Di	4B) Living Roots (C3)	Second V (()	Water-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	rs (2 or mod Leaves (B.A., and 4B erns (B10) / ater Table ible on Aer Position (D2 ard (D3) Fest (D5) ounds (D6)	ore requir B9) B) e (C2) rial Imag 2)	ery (C9)	
Marks: Marks: Marks: Marks: Mary Indicators Surface Water Mart Sediment Incompany Indicators Algal Mater Iron Deposes Surface Solution Sparsely Water Sparsely Water Solution Marks: Marks	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) vill Cracks (B6) Visible on Aerial egetated Concavers: esent? Ye	Imagery (I		Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Stunted or Stre Other (Explain	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tiller esses Plants (D in Remarks)	4B) Living Roots (C3)	Second V (()	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	rs (2 or mod Leaves (B.A., and 4B erns (B10) / ater Table ible on Aer Position (D2 ard (D3) Fest (D5) ounds (D6)	ore requir B9) B) e (C2) rial Imag 2)	ery (C9)	
Marks: Marks:	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) Visible on Aerial egetated Concav ins: esent? Ye ent? Ye	Imagery (I	B7)	Water-Stained (except MLRA Salt Crust (B1) Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Stunted or Stre Other (Explain	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tilled esses Plants (Di in Remarks) ches):	Living Roots (C3) d Soils (C6) l) (LRR A)	Second (I)	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc	rs (2 or mod Leaves (E.A., and 4B) erns (B10) / ater Table ible on Aei ible on	ore requir B9) B) e (C2) rial Imag 2)	ery (C9) No	
TDROLOGY Itland Hydrolo mary Indicators Surface Water Mark Saturation Water Mark Sediment I Drift Depos Algal Mat of Iron Depos Surface Sof Inundation Sparsely V Itld Observation face Water Preservation Preservation Preservation Preservations	s (minimum of or ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) sill Cracks (B6) Visible on Aerial egetated Concavens: esent? ye ent? ye rfringe)	Imagery (I ve Surface s	B7)	Water-Stained (except MLRA Salt Crust (B1: Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Stunted or Stre Other (Explain	A 1, 2, 4A, and 4 1) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4 eduction in Tilled esses Plants (D in Remarks) ches): ches):	Living Roots (C3) d) d Soils (C6) 1) (LRR A)	Second (I)	Vater-Stained MLRA 1, 2, 4 Drainage Patte Dry-Season W Saturation Visi Geomorphic P Shallow Aquita FAC-Neutral T Raised Ant Mc Frost-Heave H	rs (2 or mod Leaves (E.A., and 4B) erns (B10) / ater Table ible on Aei ible on	ore requir B9) B) e (C2) rial Imag 2)) (LRR A	ery (C9		

APPENDIX D

Wetland Rating Forms

Wefland name or number WSE1	Wetland	l name or number WSE1	
-----------------------------	---------	-----------------------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	t (II KIIOWII). WSE1			Date of s	site visit:	3/9/2012
Rated by:	M Maynard T	rained by	Ecology? Yes <u>X</u> No	Date of t	training:	04/06
SEC: 29	TWNSHP: 26N	RNGE:_	4E Is S/T/R in App	endix D?	Yes	No <u>X</u>
	Map of wetland unit: Fig.	gure	Estimated size			
		SUMMA	RY OF RATING			
Category based	on FUNCTIONS provided by	wetland:	I II	_ III	X	IV
С	ategory I = Score > 70		Score for Water Quality Func	tions	16	
Ca	tegory II = Score 51 - 69		Score for Hydrologic Func	tions	16	
Cat	egory III = Score 30 – 50		Score for Habitat Func	tions	8	
	egory IV = Score < 30		TOTAL Score for Func	tions	40	
Category based	on SPECIAL CHARACTERIST	CS of Wet	aland I II	D	oes not ap	ply X
	Final Catagor	MET / 1		howa'')	III	
	rmai Categoi	y (choose	e the "highest" category from al	bove)		
		•		bove)		
		•	about the wetland unit. Wetland HGM Class	Jove)		
	Summary of basic inf Wetland Unit has Special Characteristics	•	about the wetland unit. Wetland HGM Class used for Rating	bove)		
	Summary of basic inf Wetland Unit has Special Characteristics Estuarine	•	about the wetland unit. Wetland HGM Class used for Rating Depressional			
	Summary of basic inf Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	•	about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	X		
	Summary of basic inf Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	•	about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe			
	Summary of basic inf Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	•	about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope			
	Summary of basic inf Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	•	about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats			
	Summary of basic inf Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	•	about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope			

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WSE1	
-----------------------------	--

Classification of Vegetated Wetlands for Western Washington

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

1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO – go to 5 YES – The wetland class is Slope
5.	
Э.	Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding
	NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
••	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 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
	slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO
	BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
	AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the
	rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

R	Riverine and Freshwater Tidal Fringe Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
R 1	Does the wetland have the <u>potential</u> to improve water quality? (see p.52)	
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: • Depressions cover > 3/4 area of wetland	Figure
	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height): • Trees or shrubs > 2/3 area of the unit	Figure 8
	Add the points in the boxes above	8
R 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	(see p. 53)
	The river or stream linked to the wetland has a contributing basin where human activities have raised levels of sediment, toxic compounds or nutrients in the river water above standards for water quality. Other YES multiplier is 2 NO multiplier is 1	Multiplier 2 ——
•	TOTAL – Water Quality Functions Multiply the score from R1 by R2; then add score to table on p. 1	16
_	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	10
R 3	Does the wetland have the potential to reduce flooding and erosion?	(see p.54)
-	R 3.1 Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit) / (average width of stream between banks). • If the ratio is more than 20	Figure
	R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90% cover at person height NOT Cowardin classes): • Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area	Figure 7
R 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p.57)
IX 4	Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Note which of the following conditions apply. X There are human structures and activities downstream (roads, buildings, bridges, farms) that can be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding Other (Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is	Multiplier
	tidal fringe along the sides of a dike) YES multiplier is 2 NO multiplier is 1 TOTAL - Hydrologic Functions Multiply the score from R3 by R4: then add score to table on n. 1	<u>2</u>

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 3 structures points = 2	Figure
	2 structures	E:
	Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points Map of hydroperiods	Figure
	H 1.3 Richness of Plant Species (see p. 75):	2
	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76):	
	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	Figure
	None = 0 points Low = 1 point Moderate = 2 points or 3 vegetation classes and open water, the rating is always "high".	
	Use map of Cowardin classes. [riparian braided channels]	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that	
	are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	0
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	3

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81)	
	11 2,2	H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2	0
		H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3	
		 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points 	

andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	1
addressed in question H 2.4)	\ \
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5)
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 mile	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	3
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	3
◆ Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p.	8

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met.		
SC1	Estuar	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
SC2	Natura	l Heritage Wetlands (see p. 87)	
~ -		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2 2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	SC 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat I
	D /	· · · · · · · · · · · · · · · · · · ·	
SC3	Bogs (S	ree p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
		identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating NO = go to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90)				
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally				
	YES = Category I $NO = X$ not a forested wetland with special characteristics	Cat. I			
SC5	Wetlands in Coastal Lagoons (see p. 91)				
363	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 surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 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 acre (4350 square ft.)				
	YES = Category I NO = Category II	Cat. II			
CCC	Interdunal Wetlands (see p. 93)				
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	• Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

WS	F2	

WETLAND RATING FORM – WESTERN WASHINGTON

 $Version\ 2-Updated\ July\ 2006\ to\ increase\ accuracy\ and\ reproducibility\ among\ users\ Updated\ Oct.\ 2008\ with\ the\ new\ WDFW\ definitions\ for\ priority\ habitats$

Name of wetland (if known): WSE2			Date of s	ite visit: 03/12/12
Rated by: M Maynard	Trained by	Ecology? Yes <u>X</u> No	Date of the	raining: 04/06
SEC: 29 TWNSHP: 26N	RNGE:_	4E Is S/T/R in A	appendix D?	Yes No_X
Map of wetland unit:	Figure	Estimated size		<u></u>
	SUMMA	RY OF RATING		
Category based on FUNCTIONS provided b	y wetland:	I II	III	IVX
Category I = Score > 70		Score for Water Quality Fu	inctions	6
Category II = Score 51 - 69		Score for Hydrologic Fu	inctions	10
Category III = Score 30 – 50		Score for Habitat Functions 11		
Category IV = Score < 30		TOTAL Score for Fu	inctions	27
Category based on SPECIAL CHARACTERI	STCS of Wet	land I II	Do	oes not apply X
Final Categ	gory (choose	e the "highest" category fron	ı above")	IV
Summary of basic	information	about the wetland unit.		
Wetland Unit has Specia Characteristics	al	Wetland HGM Class used for Rating		
Estuarine		Depressional	X	
Natural Heritage Wetland	l	Riverine		
Bog		Lake-fringe		
Mature Forest		Slope		
Old Growth Forest		Flats		
Coastal Lagoon		Freshwater Tidal		
Interdunal				
None of the above	X	Check if unit has multiple HGM classes present		
Does the wetland being rated meet any of th	a auitania ba	low? If you arouse VEC to		

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number	name or num	her
------------------------	-------------	-----

WSE2	

Classification of Vegetated Wetlands for Western Washington

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

	NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) Hypographical and have least if and any have least if and a Freshwater Tidal Fringe up the forms for Pingring wetlands. If it is a Saltwater Tidal Fringe it.
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
	The entire wetland unit is flat and precipitation is 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 noticed and hardesified as a "Flats" noticed was the form for Depressional methods.
2	If your wetland can be classified as a "Flats" wetland, use the form for Depressional wetlands.
3.	Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a hady of permanent open weter (without any
	The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
0.	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 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
	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 ARE AS IN THE UNIT (make a rough disease to his part deside). Use the following table to identify the empropriete class to use for the
	AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	 Unit is a depression with no surface water leaving it (no outlet)	I igui e
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	0
	$\mathbf{YES} \mathbf{points} = 4 \qquad \qquad \mathbf{NO} \mathbf{points} = 0$	Ü
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	8
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	1
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	0
	• Area seasonally ponded is < 1/4 total area of wetland	
	Total for D 1 Add the points in the boxes above	3
- A		
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 44)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	6
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3		(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	_
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	5
	 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 • Marks of ponding less than 0.5 ft	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	
	basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	
	• The area of the basin is 10 to 100 times the area of the unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class points = 5	
	Total for D 3 Add the points in the boxes above	10

Wetland	name	or	number	
W Chand	manne	\mathbf{o}	Humber	

WSE2

D 4	Does the wetland have the opportunity to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	(see p. 49) Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Ines	se questi	ions apply to wetlands of all HGM classes.		Points
	HABIT	TAT FUNCTIONS – Indicators that wetland functions to provid	e important habitat.	(only 1 score
TT 1	•			per box)
<u>H 1</u>	H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Classes of the types of vegetation classes present (as defined by Classes) X Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-can cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures or more points = 1 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present withit cover more than 10% of the wetland or 1/4 acre to count (see X Permanently flooded or inundated X Seasonally flooded or inundated Occasionally flooded or inundated Occasionally flooded or inundated	owardin) – Size threshold for each class is 2.5 acres. opy, shrubs, herbaceous, moss/ground- Map of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	Figure
		Saturated only	1 type presentpoints = 0	
		Permanently flowing stream or river in, or adjacent to, the Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points	1	
		Freshwater tidal wetland = 2 points	Map of hydroperiods	1
	Н 1.3			1
	H 1.4	Interspersion of Habitats (see p. 76):		
	1	Decided from the diagrams below whether interspersion between the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes and unvegetated areas (can include open water or mudition of the classes are classes).		Figure
	(High = 3 points [riparian braided channel	Use map of Cowardin classes.	1
	Н 1.5	Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The you put into the next column. Large, downed, woody debris within the wetland (> 4 in Standing snags (diameter at the bottom > 4 inches) in the Undercut banks are present for at least 6.6 ft. (2m) and/c 3.3 ft. (1m) over a stream (or ditch) in, or contiguous wie Stable steep banks of fine material that might be used by (> 30 degree slope) OR signs of recent beaver activity at not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation of are permanently or seasonally inundated (structures for	diameter and 6 ft. long) e wetland or overhanging vegetation extends at least th the unit, for at least 33 ft. (10m) beaver or muskrat for denning re present (cut shrubs or trees that have or woody branches are present in areas that	
		X Invasive plants cover less than 25% of the wetland area NOTE: The 20% stated in early printings of the manual H 1 TOTAL Score – potential for providing habitat	in each stratum of plants	1 6

WSE2	
------	--

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure 5 4 4 3 3 2 2 1 0 1
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripariar or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either ripariar or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	at n to

TTTOTO	
WSE2	

♦	Total Score for Habitat Functions Add the points for H 1 and H 2; then <i>record the result on p. 1</i>	11
	TOTAL for H 1 from page 8	6
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
	• There are no wetlands within 1/2 milepoints = 0	
	• There is at least 1 wetland within 1/2 milepoints = 2	
	within 1/2 mile	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3	
	wetlands within 1/2 mile	3
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
	H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	addressed in question H 2.4)	
	Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
	If wetland has 1 priority habitat = 1 point No habitats = 0 points	
	If wetland has 2 priority habitats = 3 points	
	end, and > 6 m (20 ft) long. If wetland has 3 or more priority habitats = 4 points	
	western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	rock, ice, or other geological formations and is large enough to contain a human.	
	Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	provide functional file history requirements for instream fish and whathe resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	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.	
	a wet prairie (full descriptions in WDFW PHS report p. 161).	1
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
	terrestrial ecosystems which mutually influence each other.	
	X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158).	
	generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
	dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
	multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
	Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
	fish and wildlife (<i>full descriptions in WDFW PHS report p. 152</i>). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	NOTE: the connections do not have to be relatively undisturbed.	
	http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
	descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	

WSE2 _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		nd Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate a are met.	
0.01		ine wetlands? (see p.86)	
SC1	Estuar	Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$\mathbf{YES} = \mathbf{Go} \text{ to } \mathbf{SC} 1.1 \qquad \qquad \mathbf{NO} \underline{\mathbf{X}}$	
	SC 1.1	Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
		with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
	D /	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (S	see p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90)					
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I				
	YES = Category I $NO = X$ not a forested wetland with special characteristics	Cat. 1				
	<u> </u>					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
	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 surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)					
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} \ = \mathbf{Category} \ \mathbf{II}$	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC (1 In the modern decrease and accompanies it is a modern of modern decrease and accompanies it is a modern decrease and accompanies it is a modern decrease and accompanies in the modern decrease and accompanies are accompanies and accompanies and accompanies are accompanies and accompanies and accompanies and accompanies are accompanies and ac					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?					
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
1	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

WSE3	
WOED	

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known):	WSE3		_ Date of	site visit	:	3/14/12
Rated by: M Maynard	Trained by I	Ecology? Yes <u>X</u> No	_ Date of	training:	04/0	6
SEC: 20 TWNSHP: 26N	RNGE:_	4E Is S/T/R in A ₁	pendix D?	Yes	N	NoX_
Map of wetland unit:	Figure	Estimated size_				
	SUMMA	RY OF RATING				
Category based on FUNCTIONS provided by	oy wetland:	I II	III	X	IV	
Category I = Score > 70		Score for Water Quality Fu	nctions		14	
Category II = Score 51 - 69		Score for Hydrologic Fu			10	\dashv
Category III = Score 30 – 50		Score for Habitat Fu			9	\dashv
Category IV = Score < 30		TOTAL Score for Fu			33	7
Category based on SPECIAL CHARACTERI	STCS of Wetl	land I II	D	oes not	apply	X
Final Categ	Orv (choose	e the "highest" category from	above")		III	
		about the wetland unit.	,			
Wetland Unit has Specia		Wetland HGM Class				
Characteristics Estuarine		used for Rating Depressional	X			
Natural Heritage Wetland		Riverine	A			
Bog		Lake-fringe				
Mature Forest		Slope				
Old Growth Forest		Flats				
Coastal Lagoon		Freshwater Tidal				
Interdunal						
None of the above	X	Check if unit has multiple	X			
		HGM classes present				

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wet	and	name	or	number

WSE3 _____

Classification of Vegetated Wetlands for Western Washington

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

1.	NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland meet all of the following criteria?
	X _ 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of 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 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 your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less

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

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

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	 Unit is a depression with no surface water leaving it (no outlet)	l'iguit
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	
	• Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	
	 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 	3
	Map of Cowardin vegetation classes	3
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	Figure
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	rigure
	• Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	2
	• Area seasonally ponded is < 1/4 total area of wetland	
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
D Z	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 11)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	,
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7	
	 The wetland is a "headwater" wetland	
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	0
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	• The area of the basin is less than 10 times the area of unit	3
	 The area of the basin is 10 to 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	5

Wet	and	name	or	number

D 4	Does the wetland have the opportunity to reduce flooding and erosion? Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	(see p. 49) Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Thes	te questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	per box)
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures or more points = 1 H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2	1
	Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	1
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	<u> </u>
	High = 3 points [riparian braided channels]	1
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of point you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas tha are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	t O
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	4

H 2	Does tl	ne wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR • Within 1 mile of a lake greater than 20 acres? NO = 0 points	

•	Total Score for Habitat Functions Add the points for H 1 and H 2; then record the result on p. 1	9
	TOTAL for H 1 from page 8	4
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
	•	
	• There is at least 1 wettand within 1/2 mile points = 2 • There are no wetlands within 1/2 mile points = 0	
	within 1/2 mile	
	• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
	disturbedpoints = 3	
	• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
	wetlands within 1/2 milepoints = 5	2
	• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
	relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
	• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
	H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
	addressed in question H 2.4)	
	If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
	If wetland has 2 priority habitats = 3 points	
	If wetland has 3 or more priority habitats = 4 points	
	end, and > 6 m (20 ft) long.	
	to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
	Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
	andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
	Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
	Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
	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.	
	WDFW report: pp. 167-169 and glossary in Appendix A).	
	and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
	Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
	provide functional life history requirements for instream fish and wildlife resources.	
	a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to	1
	Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
	terrestrial ecosystems which mutually influence each other.	
	<u>X</u> Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
	Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158).	
	generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
	cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
	dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
	multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
	 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 	
	fish and wildlife (full descriptions in WDFW PHS report p. 152).	
	Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
	Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
	Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i>	
	http://wdfw.wa.gov/hab/phslist.htm)	
	descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	

WSE3 _____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		nd Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate a are met.	
0.01		ine wetlands? (see p.86)	
SC1	Estuar	Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$\mathbf{YES} = \mathbf{Go} \text{ to } \mathbf{SC} 1.1 \qquad \qquad \mathbf{NO} \underline{\mathbf{X}}$	
	SC 1.1	Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
		with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
	D /	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (S	see p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90)	
BC4	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	YES = Category I $NO = X$ not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
BCS	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II $\mathbf{NO} = \mathbf{go} \text{ to SC } 6.2$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number	WSE4	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	vetland (if known): WSE4						
ated by:_	M Maynard	Trained by Eco	ology? Yes <u>X</u> No	Date of	training	g:04/0)6
EC: 2	0 TWNSHP: 261	N RNGE:	4E Is S/T/R in A	Appendix D'	? Yes	1	No <u>X</u>
	Map of wetland un	t: Figure	Estimated size				
		SUMMARY	OF RATING				
ategory l	based on FUNCTIONS provide	d by wetland: I _	II	III	X	IV	
	Category I = Score > 70	\neg s	Score for Water Quality Fr	unctions		14	
	Category II = Score 51 - 69		Score for Hydrologic Fu	unctions		16	
	Category III = Score 30 – 50		Score for Habitat Fi			8	
	= Category III $=$ Score $50 - 50$		Score for Habitat Fi	unctions		0	
							1
\	Category IV = Score < 30		TOTAL Score for Fo	unctions		38	
ategory b			TOTAL Score for Fo	unctions	Does not	38	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE	RISTCS of Wetlan	TOTAL Score for Fo	unctions	Does not	38	$\frac{1}{x}$
Category b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat	RISTCS of Wetlan	TOTAL Score for Form I II ne "highest" category from	unctions	Does not	38 apply	$\frac{1}{X}$
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Special Special Category IV = Score < 30	RISTCS of Wetlane egory (choose the ic information ab	TOTAL Score for Form I II The "highest" category from out the wetland unit. Wetland HGM Class	unctions	Does not	38 apply	$\frac{1}{X}$
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Special Characteristics	RISTCS of Wetlan egory (choose the ic information aborial	TOTAL Score for Form I II The "highest" category from out the wetland unit. Wetland HGM Class used for Rating	In above")	Does not	38 apply	$\frac{1}{x}$
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Special Characteristics Estuarine	RISTCS of Wetlan egory (choose the cial I	TOTAL Score for Form I I II II we "highest" category from out the wetland unit. Wetland HGM Class used for Rating Depressional	unctions	Does not	38 apply	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Specharacteristics Estuarine Natural Heritage Wetland	RISTCS of Wetlan egory (choose the cial Ind	TOTAL Score for Form I II II in the "highest" category from out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	In above")	Does not	38 apply	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Specharacteristics Estuarine Natural Heritage Wetland Bog	RISTCS of Wetlan egory (choose the cial Ind	TOTAL Score for Form I II The "highest" category from out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	In above")	Does not	38 apply	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Specharacteristics Estuarine Natural Heritage Wetland Bog Mature Forest	RISTCS of Wetlan egory (choose the ic information about the icial Industry	TOTAL Score for Fund I II III ne "highest" category from out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	In above")	Does not	38 apply	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Specharacteristics Estuarine Natural Heritage Wetlen Bog Mature Forest Old Growth Forest	RISTCS of Wetland egory (choose the ic information about it information about it information it is information in it is information it is information in it is information it is information in it is inf	TOTAL Score for Fund I II III ne "highest" category from out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	In above")	Does not	38 apply	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Specharacteristics Estuarine Natural Heritage Wetland Bog Mature Forest	RISTCS of Wetland egory (choose the ic information about it information about it information it is information in it is information it is information in it is information it is information in it is inf	TOTAL Score for Fund I II III ne "highest" category from out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	In above")	Does not	38 apply	

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

	Classification of Va
Wetland name or number	WSE4

Classification of Vegetated Wetlands for Western Washington

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

1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding
	NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
	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 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 your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	$ \begin{array}{c} \text{per box})\\ (see p.38) \end{array} $
DI	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	3
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	2
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality? Answer VES if you know on believe there are pollutants in groundwater or surface water coming into	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen Other	2
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 	2
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	3
	 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Marks of ponding less than 0.5 ft	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	
	• The area of the basin is 10 to 100 times the area of the unit	
	• The area of the basin is more than 100 times the area of the unit	3
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	<u>8</u>

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	16

Wetland name or number _____WSE4___

HABITAT FUNCTIONS - Indicators that wetland functions to provide important habitat. H 1 Does the wetland have the potential to provide habitat for many species? H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) - Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	(only 1 score per box) Figure 1 1
H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where trees have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	Figure
Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 3 structures points = 0 H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 2 types present points = 1 X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	1 Figure
Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated X Seasonally flooded or inundated Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated X Seasonally flooded or inundated Occasionally flooded or inundated X Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland Lake-fringe wetland Freshwater tidal wetland = 2 points Freshwater tidal wetland = 2 points Map of hydroperiods H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) 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	1
	1
H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes	G
High = 3 points [riparian braided channels]	0
H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	0
H 1 TOTAL Score – potential for providing habitat Add the points in the column above	3

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	1
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number WSE4	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.hm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crowr cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These includ	1 S n
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 8). There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are 	5 3
disturbed	3 2
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2	4 5
TOTAL for H 1 from page	8 3

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSE4	
W Chand haine of humber	W O D +	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	wettand Type – Check off any criteria that apply to the wettana. Circle the Category when the appropriate		
	criteria are met.		
SC1	Estuarine wetlands? (see p.86)		
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	50 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1
	Dogg (s	· · · · · · · · · · · · · · · · · · ·	
SC3	bogs (S	nee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wet	tland name or numberWSE4	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = \underline{X} not a forested wetland with special characteristics	Cat. I
SC5	Wetlands in Coastal Lagoons (see p. 91)	
BCS	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.)	
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	Long Beach Peninsula lands west of SR 103 Crayland Westport - lands west of SR 105	
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis - lands west of SR 115 and SR 109 	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II $NO = go to SC 6.2$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. 11

Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered **NO** for all types enter "Not Applicable" on p. 1

YES = Category III

Category of wetland based on Special Characteristics

Cat. III

NA

Wetland name or number W	SE5
--------------------------	-----

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	tland (if known): WSE5			Date of	site visit:	3/19/12
ated by:	M Maynard Tra	ained by I	Ecology? Yes <u>X</u> No	Date of	training:	04/06
EC:2	0 TWNSHP: 26N	RNGE:_	4E Is S/T/R in App	endix D	? Yes	NoX_
	Map of wetland unit: Fig	ure	Estimated size			
	:	SUMMA	RY OF RATING			
ategory ba	ased on FUNCTIONS provided by w	vetland:	ı ıı	_ III_	<u>X</u> 1	V
Г	Category I = Score > 70		Score for Water Quality Fund	ctions	14	
	Category II = Score 51 - 69		Score for Hydrologic Fund	ctions	10	
	Category III = Score 30 – 50		Score for Habitat Fund		10	
	Category IV = Score < 30		TOTAL Score for Fund		34	
Lategory ba	sed on SPECIAL CHARACTERIST(CS of Wetl	and I II	I	Does not app	lyX
	Final Categor	V (choose	the "highest" category from a	hove")	III	
		•		0010)		
		rmation :	about the wetland unit.			
	Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating			
	Estuarine		Depressional	X		
	Natural Heritage Wetland		Riverine			
	Bog		Lake-fringe			
	Mature Forest		Slope			
	Old Growth Forest		Flats			
	Coastal Lagoon		Freshwater Tidal			
	Interdunal					
	None of the above	X	Check if unit has multiple HGM classes present			

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or numberWSE5
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO - go to 5 YES - The wetland class is Slope

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

NO – go to 6

YES – The wetland class is Riverine

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

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

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**

110 go to 7

7. Is the entire wetland 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

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

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

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

The overbank flooding occurs at least once every two years.

Does the entire wetland meet all of the following criteria?

river.

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 • Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 • Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	 D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland	Figure
	 Area seasonally ponded is > 1/2 total area of wetland	0
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	(see p. 44)
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1	Multiplier 2
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	2
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	3
	Total for D 3 Add the points in the boxes above	5

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other 	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Wetland name or number _____ WSE5 ____

HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		questions apply to wetlands of all HGM classes.	Points (only 1 score	
H 1.1	ŀ	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score	
Check the types of vegetation classes present (as defined by Cowardin) — Size threshold for each class is 14 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed — Emergent plants — Serubshrub (areas where serves have > 30% cover) — Forested tareas where reses have > 30% cover) — The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polyson. Add the number of vegetation types that qualify. If you have: 4 structures — points = 0 a structures — points = 2 structures — points = 0 structures — points = 0 structures — points = 1 structure — points = 0 structures — points = 0 structures — points = 0 structures — points = 0 structure — points = 0 structure or more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated — 4 or more types present — points = 2 structures — points = 2 structures — points = 2 structures — points = 0 structures — points	H 1 Does the wetland have the potential to provide habitat for many species?			
Add the number of pleasted in the wetland that cover at least 10 ft² (different parches of the same species and not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife. Condatha Thisties. H 1.4. Interspersion of Habitats (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different parches of the same species and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. H 1.5. Special Habitat Features (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. H 1.5. Special Habitat Features (see p. 75): Check the habitat features that are present in the wetland. The number of checks is the number of points of the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. H 1.5. Special Habitat Features (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. H 1.5. Special Habitat Features (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Underent banks are present for at least 6 ft. (2m) and/or overhanging vegetation extends at least 3.3.ft. (1m) over a stream (or dicto) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fire material that might be used by beaver or muskard for denning (> 30 degree slope) OK signs of recent beaver activity are present (cut shrubs or heres that have Al le	H	Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure	
H 1.2 Hydroperiods (see p. 73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). X Seasonally flooded or included		cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 3 structures points = 2		
H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	I	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 X Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure	
Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species		Freshwater tidal wetland = 2 points Map of hydroperiods		
Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes. Use map of Cowardin classes. 1 Use map of Cowardin classes. 1 Use map of Cowardin classes. 1 Use map of Cowardin classes. 2 Use map of Cowardin classes. 2 Use map of Cowardin classes. 3 Special Habitat Features (see p. 77): 3 Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. 4 Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) 3 Standing snags (diameter at the bottom > 4 inches) in the wetland 4 Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) 3 Stable steep banks of fine material that might be used by beaver or muskrat for denning 4 (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) 4 Invasive plants cover less than 25% of the wetland area in each stratum of plants	F	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes. H 1.5 Special Habitat Features (see p. 77): Check the habitat features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants	F	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or		
H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants		or 3 vegetation classes and open water, the rating is	Figure	
H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants		[riparian braided channels]		
NOTE: The 20% stated in early printings of the manual on page 78 is an error.	F	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants	1	
H 1 TOTAL Score – potential for providing habitat Add the points in the column above 5				

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	Н 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR YES = 1 point	
		fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR	0

Wetland name or numberWSE5	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phs/ist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less 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: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These includ	1
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 	
 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
within 1/2 mile	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	5

Add the points for H 1 and H 2; then record the result on $p.\ 1$

Comments:

Total Score for Habitat Functions

Wetland name or number	WSE5	
welland hame of humber	W DED	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		ind Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
		are met.	
SC1	Estuar	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		$YES = Category I \qquad NO = Category II$	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual Rating
		or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	Natura	l Heritage Wetlands (see p. 87)	
SCZ	1141414	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	SC 2.1	question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
		YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (s	ee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover ($> 30\%$ coverage of the total shrub/herbaceous cover)?	Cot I
		YES = Category I NO = Is not a bog for purpose of rating	Cat. I
		TES - Category I	

Wetl	land name or number WSE5	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = X not a forested wetland with special characteristics	Cat. I
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	Cat. I Cat. II
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103 • Grayland-Westport lands west of SR 105 • Ocean Shores-Copalis - lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
	YES = Category III	Cat. III

Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

NA

Wetland name or number	WSE6
------------------------	------

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	retland (if known): WSE6			_ Date of	site visit	t: <u>3/1</u>	9/12
Rated by:_	M Maynard	Trained by E	cology? Yes X No	Date of	training:	. 04/06	5
SEC:	20 TWNSHP: 26N	RNGE:	4E Is S/T/R in Ap	pendix D?	Yes	N	o <u>X</u> _
	Map of wetland unit: I	Figure	Estimated size_				
		SUMMAI	RY OF RATING				
Category 1	based on FUNCTIONS provided by			III	X	IV	
	Catagory I - Soore > 70		Soons for Wotor Ovolity Fun	ations		12	
	Category I = Score > 70		Score for Water Quality Fun				_
	Category II = Score 51 - 69		Score for Hydrologic Fun	ctions		18	_
	Category III = Score 30 – 50		Score for Habitat Fun	ctions		7	
	Category IV = Score < 30		TOTAL Score for Fun	ctions		37	
Category t	pased on SPECIAL CHARACTERIS	TCS of Wetl	and I II	D	oes not	annly	X
	asca on St Lenie cimilate i Lius	1 CB of Well	······ · · · · · · · · · · · · · · · ·	~~~	000 2200	арріј	21
g · , ·			the "highest" category from a			III	7
- · · · · · · · · · · · · · · · · · · ·	Final Catego	Dry (choose	the "highest" category from a				
	Final Category Summary of basic in Wetland Unit has Special	Ory (choose	the "highest" category from a bout the wetland unit. Wetland HGM Class				
	Final Categor Summary of basic in Wetland Unit has Special Characteristics	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating	above")			
	Final Categoral Summary of basic in Wetland Unit has Special Characteristics Estuarine	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional				
	Final Categor Summary of basic in Wetland Unit has Special Characteristics	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating	above")			
	Final Category Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	above")			
	Final Category Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	above")			
	Final Category Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	above")			
	Final Category Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	Ory (choose	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats	above")			

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wet	land name or numberWSE6
	Classification of Vegetated Wetlands for Western Washington
	ne hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with tiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?

	The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep) NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.

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

YES – The wetland class is **Depressional**

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

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

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

NO - go to 7

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	3
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	3
	 D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 	Figure
	Map of Hydroperiods	0
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	(see p. 44)
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier 2
•	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	12
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	12
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	4
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	5
	Total for D 3 Add the points in the boxes above	9

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. Note which of the following indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems	•
	X Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	18

Wetland name or number WSE6

Thes	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 scor per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	0
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 X Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 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	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	None = 0 points Low = 1 point Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes [riparian braided channels]	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)	0
	Invasive plants cover less than 25% of the wetland area in each stratum of plants	

Wetland name or number	WSE6
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number <u>WSE6</u>	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdw.wa.gov/hab/pshist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include	1
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	2.

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSE6	
Welland hame of humber	W DEO	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.	
SC1	Estuarine wetlands? (see p.86)	
SCI	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural	
	Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cat. 1
	332-30-151? YES = Category I NO = go to SC 1.2	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II	Cat. I
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cut. II
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Rating
	or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
502	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	$\mathbf{YES} = \mathbf{Category 1} \qquad \qquad \mathbf{NO} \underline{\mathbf{X}} \text{not a Heritage Wetland}$	
SC3	Bogs (see p. 87)	
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating $NO = go$ to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

V	Vetland name or numberWSE6	
_	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
CI	YES = Category I NO = X not a forested wetland with special characteristics Wetlands in Coastal Lagoons (see p. 91)	
51	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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.)	
	YES = Go to SC 5.1 NO \underline{X} 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 invasive plant species (see list of invasive species on p. 74). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	Cut. 1
	YES = Category I NO = Category II	Cat. II
S	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103 • Grayland-Westport lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	a
	YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
	YES = Category III	Cat. III

Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

NA

Wetland name or number	WSE7	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	retland (if known): WSE			D.4 C.		. 04/0	
itea by:_	M Maynard	_ Trained by Ecology	7 Yes_X_ No	_ Date of	training	:04/0	16
EC:	20 TWNSHP: 26N	RNGE: 4E	Is S/T/R in Ap	pendix D?	Yes	1	No <u>X</u>
	Map of wetland unit:	Figure	Estimated size_				
		SUMMARY OF I	RATING				
ategory l	based on FUNCTIONS provided	by wetland: I	II	III	X	IV	
	Category I = Score > 70	Score f	for Water Quality Fun	ections		18	
	Category II = Score 51 - 69	Scor	re for Hydrologic Fun	ctions		10	
	Cotagony III — Sagra 20 50		Score for Habitat Fun	ections		9	
	Category III = Score 30 – 50			ctions			
	Category IV = Score < 30		ΓΟΤΑL Score for Fun			37	1
tategory b		1	ΓΟΤΑL Score for Fun	ections	oes not	37	
Category b	Category IV = Score < 30 pased on SPECIAL CHARACTER	1	ΓΟΤΑL Score for Fun	octions D	oes not	37	$\frac{1}{x}$
Category b	Category IV = Score < 30 pased on SPECIAL CHARACTERI Final Category	ISTCS of Wetland	TOTAL Score for Fun I II ghest" category from a	octions D	oes not	37 apply] x]
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Speci	ISTCS of Wetland GOTY (choose the "high information about the land wetland with the land wetland with the land with the land wetland with land with land wetland with land with	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class	octions D	oes not	37 apply] x]
ategory b	Category IV = Score < 30 pased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Speci Characteristics	ISTCS of Wetland GOTY (choose the "high information about the land we we were the second sec	I II I	Dabove")	oes not	37 apply	<u>x</u>
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Specion Characteristics Estuarine	ISTCS of Wetland GOTY (choose the "high information about the land we	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class used for Rating ssional	octions D	oes not	37 apply	<u>x</u>
ategory b	Category IV = Score < 30 pased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Specion Characteristics Estuarine Natural Heritage Wetland	ISTCS of Wetland GOTY (choose the "hig information about the land between	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class used for Rating ssional ne	Dabove")	oes not	37 apply	<u>x</u>
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Specion Characteristics Estuarine Natural Heritage Wetland Bog	ISTCS of Wetland GOTY (choose the "hig information about the label of	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class used for Rating ssional	Dabove")	oes not	37 apply	<u>x</u>
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Specion Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ISTCS of Wetland GOTY (choose the "hig information about the land between	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class used for Rating ssional ne	Dabove")	oes not	37 apply	<u>x</u>
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	ISTCS of Wetland GOTY (choose the "hig information about the al Western Brivering Lake-formation al Rivering Lake-formation al R	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class used for Rating ssional ne	Dabove")	oes not	37 apply	
ategory b	Category IV = Score < 30 Dased on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Specion Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ISTCS of Wetland GOTY (choose the "hig information about the al Western Brivering Lake-formation al Rivering Lake-formation al R	IOTAL Score for Fun I II ghest" category from a ne wetland unit. etland HGM Class used for Rating ssional ne cringe	Dabove")	oes not	37 apply	

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetla	and name or number WSE7
	Classification of Vegetated Wetlands for Western Washington
	e hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with iple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

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

NO – go to 6

YES – The wetland class is Riverine

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of 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

YES – The wetland class is **Slope**

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

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

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

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

The overbank flooding occurs at least once every two years.

Does the entire wetland meet all of the following criteria?

river.

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)	Figure 2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland points = 4 • Area seasonally ponded is > 1/4 total area of wetland points = 2 • Area seasonally ponded is < 1/4 total area of wetland points = 0	Figure 2
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	(see p. 44)
	X steam of curvert discharges into wetland that drains developed areas, residential areas, failined fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other YES MO multiplier is 1	Multiplier 2
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	18
•	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	10
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	2
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	0
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	3
	Total for D 3 Add the points in the boxes above	5

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Wetland name or number WSE7

Thes	e questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	1 2 30.1.)
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 3 structures points = 2	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types present points = 2 Occasionally flooded or inundated 2 types present points = 1 X 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 Map of hydroperiods	Figure
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes Use map of Cowardin classes	
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)	0
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	

W Chang hame of humber WSE7	Wetland name or number	WSE7
-----------------------------	------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number WSE7	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdw.wa.gov/hab/pslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growthMature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X. 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 vet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include	1
addressed in question H 2.4) H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 5 • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSE7	
------------------------	------	--

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X_ not a Heritage Wetland		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
Does the welland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. VES = Go to SC 1.1 NO			
The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO	SC1		
Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NOX			
With a salinity greater than 0.5 ppt. YES = Got to SC 1.1 NO X SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 32.3-20-1517 YES = Category I NO = got to SC 1.2 SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II, The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II White the relatively undisturbed upper marsh determining the size threshold of 1 acre. Do not, however, exclude the area of Spartina in the vertical of 1 acre. A least 34 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as eliter high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/TR information from Appendix D or accessed from WnIP/DNR web site wetland based on its function. YES = Category I NO X not a Heritage Wetland YES = Category I NO X not a Heritage Wetland YES = Cot opensition S not A terminal S not a set with state threatened or endangered plant species of inches or more of the lists 32 inches of soil profile? (See Appendix			
SC1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category 1 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has least an low cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category II. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. Act. II are wetland size of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-moved grassland. The wetland has a least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.2 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen our most sites before you need to contact WNHP/DNR, S/T/R information from Appendix D or accessed from WNHP/DNR web site YESContact WNHP/DNR (see p. 79) and go to SC 2.2 NO			
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-1517 VES = Category 1 NO = go to SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category 1 NO = Category 1 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native spartins spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland — The wetlands at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen our most sites before you need to contact WMHP/DNR web site wetlands as high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES — Contact WNIP/DNR (see p. 79) and go to SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES — Category 1 NOX not a Heritage Wetland SC3 Bogs (see p. 87) Does the wetland for any part of the unit) meet both the criteria for soils and vegetation in			
Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 323-30-151? YES = Category 1 NO = go to SC 1.2 Is the wetland at least 1 acrc in size and meets at least two of the following conditions? YES = Category 1 The wetland at least 1 acrc in size and meets at least two of the following conditions? YES = Category 1 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% order to wetland, then the wetland should be given a dual ring (III), with a training the size threshold of 1 acrc At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. The wetland size p. 87) Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands (see p. 87) SC2 1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WWHP/DNR; screen out most sites before you need to contact WWHP/DNR web site YESContact WNHP/DNR (see p. 79) and go to SC 2.2 NO			
SC 1.2 Is the wetland a least 1 acre in size and meets at least two of the following conditions? YES = Category 1 The wetland is relatively undisturbed (has no diking, dithening, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (II). The transport of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (II). The transport of non-native spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (II). The transport of non-native spartina spp., are only species that cover more than 10% of the wetland should be given a dual rating (II). The species of the wetland should be given a dual rating (II). The species of the non-native Spartina spp., are only species that cover more than 10% of the wetland should be given a dual rating (II). The species of the non-native Spartina spp., are only species that cover more of the wetland should be given a dual rating (II). The native spartina species of the wetland should be given a dual rating (II). The nation of the wetland should be given a dual rating (II). The nation of the wetland should be given a dual rating species (II). The nation of the wetland should be given a dual rating species (II). The nation of the wetland should be given a dual rating species (II). The nation of the wetland should be given a dual rating species (II). The nation of the species (or conditions and the section of the wetland should be given a dual rating species (II). The nation of the species (or combination of species) in the section of the transport species in the species (or combination of species) on the bog species in table 3)? YES = Category I NO X not a Heritage Wetland in bogs. If you answer yes you will still need to rate the wetland based o			Cat. 1
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (1/1). With native species would be a Category of the wetland should be given a dual rating (1/1). With native species would be a Category of the wetland should be given a dual rating (1/1). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.1 Is the wetland size of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.2 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland YES = go to question 3 NO = go to question 2 not seek the key below to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the			24.1
Cat. 1 The wetland is relatively undisturbed (has no disking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (1/II). The area of Spartina would be rated a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland should be given a dual rating (1/II). The area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see P. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland bing rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) STYR information from Appendix D or accessed from WNHP/DNR.) STYR information from Appendix D or accessed from WNHP/DNR.) SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland YES = Category 1 NO Y not a Heritage Wetland YES = Category 1 NO Y not a Heritage Wetland begins of the wetland based on its function. 1. Does the wetland dor any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils) YES = go to question 3 NO = go to question 2 Does the wetla		· · ·	
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/R information from Appendix D or accessed from WNHP/DNR web site			Cot I
Less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 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 relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 344 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D		less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species	Cot II
with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland YES = Category 1 NO NO A the plant species or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soil, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not apof pruprose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = So a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mo		that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland		with native species would be a Category 1. Do not however, exclude the area of Spartina in	
At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87)		determining the size threshold of 1 acre.	Dual
The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/IR information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland SC3 Bogs (see p. 87)			
SC2 Natural Heritage Wetlands (see p. 87)			
Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/R information from Appendix D		or contiguous freshwater wetlands.	
Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2	SC2	· · · · · · · · · · · · · · · · · · ·	
either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	SCZ		
Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site			
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? NO X			
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? NO X		SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NOX not a Heritage Wetland SC 3 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland SC3 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
or endangered plant species? YES = Category 1 NO X not a Heritage Wetland SC3 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		or endangered plant species?	Cat I
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		YES = Category 1 NO X not a Heritage Wetland	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I	SC3	Bogs (see p. 87)	
 wetland based on its function. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?			
bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
pond? YES = go to question 3 NO = is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
VES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?			
			Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wet	and name or numberWSE7	
SC4	Forested Wetlands (see p. 90)	
304	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	YES = Category I $NO = X$ not a forested wetland with special characteristics	Cat. 1
~ ~ =		
SC5	Wetlands in Coastal Lagoons (see p. 91) 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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	$\mathbf{YES} = \mathbf{Go} \text{ to } \mathbf{SC} \text{ 5.1} \qquad \mathbf{NO} \underline{\mathbf{X}} \text{ not a wetland in a coastal lagoon}$	
	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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} \ = \mathbf{Category} \ \mathbf{II}$	Cat. II
SC6	<u>Interdunal Wetlands</u> (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	
1	• Ocean Shores-Copans – lands west of SK 113 and SK 109	

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

YES = Category II

YES = Category III

If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

NO = go to SC 6.2

Cat. II

Cat. III

NA

Wetland name or number	WSE8	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

iaille of V	wetland (1f	known):	WSE8				Date of	site visi	ıt: <u> </u>	3/21/12
ated by:	M M	<u> Iaynard</u>		Trained by	Ecology? Y	Yes_X_ No	Date of	training	g: <u>04</u>	/06
EC:	20	TWNSHP:	26N	RNGE:_	4E	Is S/T/R in A	ppendix D'	? Yes_		No
		Map of wetlar	nd unit: F	igure		_ Estimated size				
				SUMMA	RY OF RA	TING				
Category	based on	FUNCTIONS pr	ovided by	wetland:	I	II	III	X	IV_	
	Catego	ory I = Score >	70		Score for	Water Quality Fu	nctions		18	
		ory II = Score 5				for Hydrologic Fu			10	
	_	ry III = Score 30			Sco	ore for Habitat Fu	nctions		13	
	_	•						<u> </u>		
	Categor	y IV = Score <	30		TO	TAL Score for Fu	nctions		41	
Category		ry IV = Score <		TCS of We				Does not		X
Category		SPECIAL CHARA	ACTERIS		tland I_	II	Г	Does not		$\frac{1}{X}$
Category		SPECIAL CHARA	ACTERIS	ory (choose	tland I_	IIst" category from	Г	Does not	t apply_	X
Category	based on S	SPECIAL CHARA Final Summary Wetland Unit ha	ACTERIS Category of basic in the second se	Ory (choose	e the "highe about the v Wetla	IIst" category from wetland unit.	Г	Does not	t apply_	<u> </u>
Category	based on S	SPECIAL CHARA Final Summary Wetland Unit ha Characteri	ACTERIS Category of basic in the second se	Ory (choose	e the "highe about the v Wetla	IIst" category from wetland unit. and HGM Class ed for Rating	above")	Does not	t apply_	<u>x</u>
'ategory	based on S	SPECIAL CHARA Final Summary Wetland Unit ha Characteri Stuarine	ACTERIS Categor of basic in as Special estics	Ory (choose	e the "highe about the v Wetla use Depression	IIst" category from wetland unit. and HGM Class ed for Rating	Г	Does not	t apply_	<u>x</u>
Category	based on S	Final Summary Wetland Unit ha Characteri Stuarine Jatural Heritage	ACTERIS Categor of basic in as Special estics	Ory (choose	e the "highe about the v Wetla use Depression Riverine	st" category from wetland unit. and HGM Class ed for Rating	above")	Does not	t apply_	<u>x</u>
Category	based on S	Final Summary Wetland Unit ha Characteri Stuarine Jatural Heritage	ACTERIS Categor of basic in as Special estics	Ory (choose	e the "highe about the v Wetla use Depressic Riverine Lake-frin	st" category from wetland unit. and HGM Class ed for Rating	above")	Does not	t apply_	<u>x</u>
Category	based on S	SPECIAL CHARA Final Summary Wetland Unit ha Characteri Stuarine Jatural Heritage Jature Forest	ACTERIS Catego of basic in as Special stics Wetland	Ory (choose	e the "highe about the v Wetla use Depressic Riverine Lake-frin Slope	st" category from wetland unit. and HGM Class ed for Rating	above")	Does not	t apply_	<u>x</u>
ategory	based on S E N B N O	SPECIAL CHARA Final Summary Wetland Unit ha Characteri Stuarine Jatural Heritage Jature Forest Old Growth Fores	ACTERIS Catego of basic in as Special stics Wetland	Ory (choose	e the "highe about the v Wetla use Depressio Riverine Lake-frin Slope Flats	st" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not	t apply_	<u>x</u>
Category	based on S E N B M O C	SPECIAL CHARA Final Summary Wetland Unit ha Characteri Stuarine Jatural Heritage Jature Forest	ACTERIS Catego of basic in as Special stics Wetland	Ory (choose	e the "highe about the v Wetla use Depressic Riverine Lake-frin Slope	st" category from wetland unit. and HGM Class ed for Rating onal	above")	Does not	t apply_	<u>x</u>

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

We	tland name or number WSE8
	Classification of Vegetated Wetlands for Western Washington
	he hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with ltiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

_____ The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river.
_____ The overbank flooding occurs at least once every two years.
NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding..

NO – go to 5 YES – The wetland class is Slope

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

Does the entire wetland meet all of the following criteria?

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of 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 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 your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	 Unit is a depression with no surface water leaving it (no outlet)	riguie
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 2	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area. Wetland has persistent, ungrazed vegetation > = 1/2 of area. points = 3 	rigure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	8
	• Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland	2
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	9
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
D 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(322 / 222)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	<u>2</u>
	Other YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	18
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
DJ	D 3.1 Characteristics of surface water flows out of the wetland unit	(see p. 10)
	• Unit is a depression with no surface water leaving it (no outlet)	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	_
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 	_
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outletpoints = 3	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	• The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is 10 to 100 times the area of the unit	, ,
	 The area of the basin is more than 100 times the area of the unit	
	Total for D 3 Add the points in the boxes above	5

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply</i> .		
	Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Wetland name or number WSE8

H.1. Does the wetland have the potential to provide habitat for many species?	Thes	e questions apply to wetlands of all HGM classes.	Points
H 1.1 Negretation Structure (see P. 72):		HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
Check the types of vegetation classes present (as defined by Cowardin) — Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants X Scrub-shrub (areas where shrubs have > 30% cover) X Forested (class has 2 study 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more. — points = 0 2 structures	H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
add the number of vegetation types that qualify. If you have: 4 structures or morepoints = 2 H 1.2 Hydroperiods (see p. 73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Seasonally flooded or inundated Permanently flooded or inundated Seasonally flooded or flooded or flooded floo		Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Torested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 care to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Cocasionally flooded or inundated Seasonally flooded or inundated Seasonally flooded or inundated Seasonally flooding stream or river in, or adjacent to, the wetland Easonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland		cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structurespoints = 2	2
H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species		Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	
Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species			
Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes. H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) QR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that		Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
None = 0 points Low = 1 point High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that		Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or	
High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that		or 3 vegetation classes and open water, the rating is	Figure
H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that		[riparian braided channels]	_
Invasive plants cover less than 25% of the wetland area in each stratum of plants		H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)	2
NOTE: The 20% stated in early printings of the manual on page 78 is an error. H 1 TOTAL Score – potential for providing habitat Add the points in the column above 8		NOTE: The 20% stated in early printings of the manual on page 78 is an error.	8

Wetland name or number	WSE8	
------------------------	------	--

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: • Within 5 mi (8km) of a brackish or salt water estuary OR • Within 3 miles of a large field or pasture (> 40 acres) OR • Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number <u>WSE8</u>	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/pslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include	1
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	8

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSE8	
------------------------	------	--

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Welland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate		
		are met.	
SC1	Estuar	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating I/II
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	1/11
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	50 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat I
G G 2	Roge (s	see p. 87)	
SC3	Dogs (5	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating NO = go to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wetl	and name or number WSE8	
SC4	Forested Wetlands (see p. 90)	
304	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	YES = Category I $NO = X$ not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91) 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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.) YES = Go to SC 5.1 NO _X_ 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 invasive plant species (see list of invasive species on p. 74). At least 3/4 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 acre (4350 square ft.) YES = Category I NO = Category II	Cat. I Cat. II
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis - lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	Cat. II Cat. III
	Category of wetland based on Special Characteristics	
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	
	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number	WSH1	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

,	vetland (if known): WSH1			_ Date of	site visit	t:	3/13/12
ated by:_	M Maynard	_ Trained by	Ecology? Yes X No	_ Date of	training:	. 04	/06
EC:	17 TWNSHP: 26N	RNGE:_	4E Is S/T/R in Ap	pendix D?	Yes		No X
	Map of wetland unit:	Figure	Estimated size_				
		SUMMA	RY OF RATING				
Category	based on FUNCTIONS provided	by wetland:	I II	III	X	IV_	
	Category I = Score > 70		Score for Water Quality Fur	nctions		10	
	Category II = Score 51 - 69		Score for Hydrologic Fun	nctions		12	
	Category III = Score 30 – 50		Score for Habitat Fur			12	
			TOTAL Score for Fur	actions		3/1	
	Category IV = Score < 30		TOTAL Score for Fun			34	
Category b		ISTCS of Wet			oes not		X_
Category b	Category IV = Score < 30 based on SPECIAL CHARACTER		tland I II	D	Poes not		$\frac{1}{x}$
Category t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category	gory (choose	tland I II e the "highest" category from	D	Poes not	apply_	X
Category l	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic	gory (choose	tland I II II about the wetland unit.	D	Poes not	apply_	<u>x</u>
ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special	gory (choose	tland I II II about the wetland unit. Wetland HGM Class	D	Poes not	apply_	<u>x</u>
ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics	gory (choose	e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating	above")	Ooes not	apply_	<u>x</u>
'ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine	gory (choose information al	tland I II e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating Depressional	D	Poes not	apply_	<u>x</u>
ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	gory (choose information al	tland I II e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	above")	Does not	apply_	<u>x</u>
ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	gory (choose information al	tland I II e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	above")	Poes not	apply_	<u>x</u>
ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetlant Bog Mature Forest	gory (choose information al	tland I II e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	above")	Poes not	apply_	<u>X</u>
ategory t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetlant Bog Mature Forest Old Growth Forest	gory (choose information al	tland I II e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats	above")	Poes not	apply_	<u>x</u>
Category t	Category IV = Score < 30 based on SPECIAL CHARACTER Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetlant Bog Mature Forest	gory (choose information al	tland I II e the "highest" category from about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	above")	Poes not	apply_	<u>x</u>

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WSH1
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland meet all of the following criteria? X 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO = go to 5 YES = The wetland class is Slope

The overbank flooding occurs at least once every two years. NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.. NO – go to 6 **YES** – The wetland class is **Riverine** Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of

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

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**

Is the entire wetland 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

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

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

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

Does the entire wetland meet all of the following criteria?

river.

Wetland name or number	WSH1	
------------------------	------	--

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	 Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area. Wetland has persistent, ungrazed vegetation > = 1/2 of area. points = 3 	rigure
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	1
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	0
	• Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland	
	Map of Hydroperiods	2
	Total for D 1 Add the points in the boxes above	5
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
_	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	, , ,
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	<u>2</u>
	Other Other YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	10
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	10
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	 units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	• The wetland is a "headwater" wetland points = 5	3
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	3
	 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is that tyes to 0.2 or 0.7 on key)out has small depressions on the surface that trap water points = 1 • Marks of ponding less than 0.5 ft	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	L
	Total for D 3 Add the points in the boxes above	6

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	_
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	12

Wetland name or number _____WSH1 ____

	uestions apply to wetlands of all HGM classes.		Points (only 1 scor
	ABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		per box)
$\mathbf{H} 1 1$	oes the wetland have the <u>potential</u> to provide habitat for many species?		
]	1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover)	class is	Figure
	The unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/gro cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	classes ints = 2	2
	1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime is cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiod X Permanently flooded or inundated 4 or more types present poin X Seasonally flooded or inundated 3 or more types present poin Cocasionally flooded or inundated 2 types present poin X Saturated only 1 type present poin 1 type present poin 2 Seasonally flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points	that to ods). that is a second of the second ods. that is a second odd odd odd odd odd odd odd odd odd	Figure 2
	1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	= 2 = 1	1
]	1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more	1.1), or	
	None = 0 points Low = 1 point Moderate = 2 points or 3 vegetation classes open water, the rating always "high".	es and	Figure
	None = 0 points Low = 1 point Moderate = 2 points or 3 vegetation classes open water, the rating always "high". Use map of Cowarding triparian braided channels	es and g is	Figure
	None = 0 points Low = 1 point Moderate = 2 points or 3 vegetation classes open water, the rating always "high". Use map of Cowarding the company of the	es and g is n classes. of points at least) t have	

Wetland name or number	WSH1
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number WSH1	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/pshist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats: These include C	0
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
TOTAL for H I from page 8	8

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSH1	
------------------------	------	--

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X_ not a Heritage Wetland		Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
Does the welland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. VES = Go to SC 1.1 NO			
The dominant water regime is tidal, Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO	SC1		
Vegetated, and With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NOX			
With a salinity greater than 0.5 ppt. YES = Got to SC 1.1 NO X SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 32.3-20-1517 YES = Category I NO = got to SC 1.2 SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I NO = Category II, The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II White the relatively undisturbed upper marsh determining the size threshold of 1 acre. Do not, however, exclude the area of Spartina in the vertical of 1 acre. A least 34 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as eliter high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/TR information from Appendix D or accessed from WnIP/DNR web site wetland based on its function. YES = Category I NO X not a Heritage Wetland YES = Category I NO X not a Heritage Wetland YES = Cot opensition S not A terminal S not a set with state threatened or endangered plant species of inches or more of the lists 32 inches of soil profile? (See Appendix			
SC1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category 1 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has least an low cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category II. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. Act. II are wetland size of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-moved grassland. The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.2 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen our most sites before you need to contact WNHP/DNR, S/T/R information from Appendix D or accessed from WNHP/DNR web site YESContact WNHP/DNR (see p. 79) and go to SC 2.2 NO			
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-1517 VES = Category 1 NO = go to SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category 1 NO = Category 1 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native spartins spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland — The wetlands at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen our most sites before you need to contact WMHP/DNR web site wetlands as high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES — Contact WNIP/DNR (see p. 79) and go to SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES — Category 1 NOX not a Heritage Wetland SC3 Bogs (see p. 87) Does the wetland for any part of the unit) meet both the criteria for soils and vegetation in			
Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 323-30-151? YES = Category 1 NO = go to SC 1.2 Is the wetland at least 1 acrc in size and meets at least two of the following conditions? YES = Category 1 The wetland at least 1 acrc in size and meets at least two of the following conditions? YES = Category 1 The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% order to wetland, then the wetland should be given a dual ring (III), with a training the size threshold of 1 acrc At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. The wetland size p. 87) Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands (see p. 87) SC2 1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WWHP/DNR; screen out most sites before you need to contact WWHP/DNR web site YESContact WNHP/DNR (see p. 79) and go to SC 2.2 NO			
SC 1.2 Is the wetland a least 1 acre in size and meets at least two of the following conditions? YES = Category 1 The wetland is relatively undisturbed (has no diking, dithening, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (II). The provided provided the state of the cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (II). The provided species of the wetland should be given a dual rating (II). The provided species of the wetland should be given a dual rating (II). The provided species of the wetland should be given a dual rating (II). The provided sparting of the provided sparting species (II) and the provided sparting sparting species (II). The provided sparting sparting species (II) and the provided sparting sparting species (II) and the provided sparting sparting species (II) and the provided sparting sparting sparting species (II) and the provided sparting spa			Cat. 1
SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions? YES = Category I The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (1/1). With native species would be a Category of the wetland should be given a dual rating (1/1). With native species would be a Category of the wetland should be given a dual rating (1/1). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.1 Is the wetland size of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC 2.2 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland YES = go to question 3 NO = go to question 2 not seek the key below to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the			24.1
Cat. 1 The wetland is relatively undisturbed (has no disking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (1/II). The area of Spartina would be rated a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland should be given a dual rating (1/II). The area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland. The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see P. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland bing rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) STYR information from Appendix D or accessed from WNHP/DNR.) STYR information from Appendix D or accessed from WNHP/DNR.) SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland YES = Category 1 NO Y not a Heritage Wetland YES = Category 1 NO Y not a Heritage Wetland YES = Category 1 NO Y not an an antural heritage wetland be proven bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are fload key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, o		· · ·	
The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/R information from Appendix D or accessed from WNHP/DNR web site			Cot I
Less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Natural Heritage Wetlands (see p. 87)		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 344 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D		less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species	Cot II
with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland YES = Category 1 NO NO A the plant species or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soil, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not apof or purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = So a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of		that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland		with native species would be a Category 1. Do not however, exclude the area of Spartina in	
At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87)		determining the size threshold of 1 acre.	Dual
The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. SC2 Natural Heritage Wetlands (see p. 87) Natural Heritage Wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/IR information from Appendix D or accessed from WNHP/DNR web site			
SC2 Natural Heritage Wetlands (see p. 87)			
Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/R information from Appendix D		or contiguous freshwater wetlands.	
Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2	SC2	· · · · · · · · · · · · · · · · · · ·	
either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) ST/R information from Appendix D or accessed from WNHP/DNR web site YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	SCZ		
Sensitive plant species. SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site S/T/R information from Appendix D or accessed from WNHP/DNR web site			
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? NO X			
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? NO X		SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NOX not a Heritage Wetland SC 3 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened or endangered plant species? YES = Category 1 NO X not a Heritage Wetland SC3 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
or endangered plant species? YES = Category 1 NO X not a Heritage Wetland SC3 Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		or endangered plant species?	Cat I
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I		YES = Category 1 NO X not a Heritage Wetland	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I	SC3	Bogs (see p. 87)	
 wetland based on its function. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
 Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
identify organic soils)? YES = go to question 3 NO = go to question 2 2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
 Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?			
bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
pond? YES = go to question 3 NO = is not a bog for purpose of rating Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
than 30% of the total shrub and herbaceous cover consists of species in Table 3)? YES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
VES = Is a bog for purpose of rating NO = go to question 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. 4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)? Cat. I			
component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?			
			Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wet	land name or number WSH1	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = \underline{X} not a forested wetland with special characteristics	Cat. I
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	Cat. I Cat. II
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis - lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	Cutt II
	YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II

YES = Category III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

If you answered NO for all types enter "Not Applicable" on p. 1

Cat. III

NA

Wetland name or number	WSH2
------------------------	------

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

vallie of w	wetland (if known): W	SH2			Date of site	e visit:	8/15/12
ated by:_	M Maynard	Trained	d by Ecology?	Yes X No	Date of tra	ining: 04/0)6
EC:	17 TWNSHP:	26N RNO	GE: <u>4E</u>	Is S/T/R in A	ppendix D? Y	'es l	No <u>X</u>
	Map of wetland	unit: Figure_		_ Estimated size	·		
		SUM	IMARY OF RA	ATING			
Category	based on FUNCTIONS prov	vided by wetla	nd: I	II	III	IV	X
	Category I = Score > 70	0	Score for	· Water Quality Fu	inctions	12	
	Category II = Score 51 -	- 69	Score	for Hydrologic Fu	inctions	10	
	Category III = Score 30 -		Sc	ore for Habitat Fu	inctions	5	
		50					
				TAL Score for Fu	inctions	27	
	Category IV = Score < 30	0	ТО	TAL Score for Fu	L	27	
Category l		0	ТО		L		$\frac{1}{x}$
Category I	Category IV = Score < 30 based on SPECIAL CHARAC	OCTERISTCS of	TO 'Wetland I_		Does		$\frac{1}{3}$
Category I	Category IV = Score < 30 based on SPECIAL CHARAC Final C	OCTERISTCS of	TO ${}^{\circ}$ Wetland ${}^{\circ}$ ${}^{\circ}$ hoose the "highs	IIest" category from	Does	s not apply	$\frac{1}{x}$
Category l	Category IV = Score < 30 based on SPECIAL CHARAC Final C	O CTERISTCS of Category (cl	TO Wetland I_ hoose the "higher tion about the	IIest" category from	Does	s not apply	
Category l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist	OCTERISTCS of Category (cl	TO Wetland I_ hoose the "higher tion about the Wetleus	II_ est" category from wetland unit. and HGM Class ed for Rating	Does nabove")	s not apply] x]
Category l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist Estuarine	CTERISTCS of Category (classic informatics	TO Wetland I_ hoose the "higher tion about the Wetle us Depressi	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does	s not apply	<u>x</u>
ategory l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist	CTERISTCS of Category (classic informatics	tion about the Wetle Begin b	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does nabove")	s not apply	<u>x</u>
'ategory l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist Estuarine Natural Heritage W Bog	CTERISTCS of Category (classic informatics	hoose the "higher tion about the Wetler us Depressi Riverine Lake-frii	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does nabove")	s not apply	<u> </u>
ategory l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist Estuarine Natural Heritage W Bog Mature Forest	CTERISTCS of Category (cl Cbasic informatics Vetland	tion about the Wetle Begin b	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does nabove")	s not apply	X
ategory l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist Estuarine Natural Heritage W Bog	CTERISTCS of Category (cl Cbasic informatics Vetland	hoose the "higher tion about the Wetle us Depressi Riverine Lake-fring Slope Flats	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does nabove")	s not apply	<u>X</u>
ategory l	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist Estuarine Natural Heritage W Bog Mature Forest	CTERISTCS of Category (cl Cbasic informatics Vetland	hoose the "higher tion about the Wetle us Depressi Riverine Lake-fring Slope Flats	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does nabove")	s not apply	X
Category I	Category IV = Score < 30 based on SPECIAL CHARAC Final C Summary of Wetland Unit has Characterist Estuarine Natural Heritage W Bog Mature Forest Old Growth Forest	CTERISTCS of Category (cl Cbasic informatics Vetland	hoose the "higher tion about the Wetle us Depressi Riverine Lake-fring Slope Flats	IIest" category from wetland unit. and HGM Class ed for Rating onal	Does nabove")	s not apply	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WSH2
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Sal Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, are this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland 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 ma flow subsurface, as sheetflow, or in a swale without distinct banks. The water leaves the wetland without being impounded?

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

NO – go to 5

YES – The wetland class is Slope

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

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

The overbank flooding occurs at least once every two years.

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

NO – go to 6

YES – The wetland class is Riverine

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of 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 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

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

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 • Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 • Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of areapoints = 0 Map of Cowardin vegetation classes	0
	 D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland	Figure
	 Area seasonally ponded is > 1/4 total area of wetland	4
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	(see p. 44)
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other	Multiplier 2
•	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	12
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	12
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	2
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	5
	Total for D 3 Add the points in the boxes above	$-\frac{10}{10}$

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Wetland name or number WSH2

i nese qui	estions apply to wetlands of all HGM classes.	Points
HA	BITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 sco per box)
I 1 Doe	s the wetland have the <u>potential</u> to provide habitat for many species?	per comy
H 1.		
	4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0	Ü
H 1.	2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated Occasionally flooded or inundated Saturated only Permanently flowing stream or river in, or adjacent to, the wetland	Figure
	Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland = 2 points Freshwater tidal wetland = 2 points Map of hydroperiods	0
H 1.	Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
H 1.	4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	None = 0 points Low = 1 point Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes [riparian braided channels]	0
H 1.	Figh = 3 points Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that	
	7tt least 1/1 acre of thin steinined persistent vegetation of woody branches are present in areas that	
	are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. H 1 TOTAL Score – potential for providing habitat Add the points in the column above	0

Wetland name or number	WSH2
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	1
	Н 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	t 0

Wetland name or numberWSH2	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report habitaty, wa, gowhabphsits.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coas	O S n
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 8) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = There is at least 1 wetland within 1/2 milepoints = There are no wetlands within 1/2 milepoints = 	5 3 3 3 3 2 2
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2	
TOTAL for H 1 from page	8 1

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSH2	
Welland hame of humber	W 3112	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	YES = Go to SC 1.1 NO X	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural	
	Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cot 1
	332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native Spartina spp., are only species	~
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre.	D1
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual Poting
	or un-mowed grassland	Rating I/II
	The wetland has at least 2 of the following features: tidal channels, depressions with open water,	1/11
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.	
	* *	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
	question is used to screen out most sites before you need to contact WNHP/DNR.) S/T/R information from Appendix D or accessed from WNHP/DNR web site	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cot I
	YES = Category 1 NO X not a Heritage Wetland	Cat I
SC3	Bogs (see p. 87) Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? $YES = go to question 3$ $NO = is not a bog for purpose of rating$	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	$YES = Category I \qquad NO = Is not a bog for purpose of rating$	

Wetl	land name or number WSH2	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = X not a forested wetland with special characteristics	Cat. I
SC5	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	Cat. I Cat. II
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103 • Grayland-Westport lands west of SR 105 • Ocean Shores-Copalis - lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger? YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	Cat. II
	YES = Category III	Cat. III

Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

NA

Wetland name or number	WSH3	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	wetland (if known): WSH3					
ated by:_	M Maynard	Trained by	y Ecology? Yes <u>X</u> No	Date of tra	ining: 04/06	j
EC:	17 TWNSHP: 26N	RNGE	: 4E Is S/T/R in A	Appendix D? Y	'es No	o <u>X</u>
	Map of wetland uni	t: Figure	Estimated size	<u> </u>		
		SUMM	ARY OF RATING			
Category	based on FUNCTIONS provide	d by wetland	: I II	III	IV	X
	Category I = Score > 70		Score for Water Quality Fu	unctions	16	
	Category II = Score 51 - 69		Score for Hydrologic Fu	unctions	8	
	Category III = Score 30 – 50		Score for Habitat Fu	Inctions	5	1
	= Category III $=$ Score $50 - 50$		Score for nabital Fi	anctions		
				i i		1
Patagowy I	Category IV = Score < 30		TOTAL Score for Fu	unctions	29	
Category 1			TOTAL Score for Fu	unctions	29 s not apply] X
Category 1	Category IV = Score < 30 based on SPECIAL CHARACTE	RISTCS of W	TOTAL Score for Fu	unctions Doe	29	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Category 1	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat	RISTCS of W	TOTAL Score for Further Tetland I II ose the "highest" category from	unctions Doe	29 s not apply	<u>x</u>
Category l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of base	RISTCS of W egory (choosic informatio	TOTAL Score for Fu	unctions Doe	29 s not apply	<u>x</u>
lategory l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Specific Characteristics	RISTCS of W egory (choosic informatio	TOTAL Score for Further Total	unctions Doe	29 s not apply	<u>x</u>
Category l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Specific Characteristics Estuarine	RISTCS of Wegory (choosic informatio	TOTAL Score for Further Fund I II II II III III III III III III II	unctions Doe	29 s not apply	<u>x</u>
ategory l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Specific Characteristics	RISTCS of Wegory (choosic informatio	TOTAL Score for Full	unctions Doe	29 s not apply	<u>x</u>
'ategory l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Spe Characteristics Estuarine Natural Heritage Wetland Bog	RISTCS of Wegory (choosic informatio	TOTAL Score for Function of the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	unctions Doe	29 s not apply	<u>x</u>
ategory l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Spe Characteristics Estuarine Natural Heritage Wetla Bog Mature Forest	RISTCS of Wegory (choosic informatio	TOTAL Score for Full	unctions Doe	29 s not apply	<u>x</u>
ategory l	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Spe Characteristics Estuarine Natural Heritage Wetland Bog	RISTCS of Wegory (choosic informatio	TOTAL Score for Fundamental Score Fundamental Total Score for Fundamental Fundamen	Doe n above")	29 s not apply	<u>x</u>
ategory	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of bas Wetland Unit has Spe Characteristics Estuarine Natural Heritage Wetla Bog Mature Forest	RISTCS of Wegory (choosic informatio	TOTAL Score for Function of the Wetland I II III III III III III III III III	Doe n above")	29 s not apply	<u>x</u>
Category	Category IV = Score < 30 based on SPECIAL CHARACTE Final Cat Summary of base Wetland Unit has Specharacteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	RISTCS of Wegory (choosic informatio	TOTAL Score for Fundamental Score Fundamental Total Score for Fundamental Fundamen	Doe n above")	29 s not apply	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or numberWSH3	
Classification of Vegetated Wetlands for Western Washington	
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit wit multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.	l
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier edition this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. For note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).	ed Salt ns, and
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.	r
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)	
 4. Does the entire wetland 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 flow subsurface, as sheetflow, or in a swale without distinct banks. The water leaves the wetland without being impounded? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot 	·

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

NO – go to 6

YES – The wetland class is Riverine

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of 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

YES – The wetland class is **Slope**

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

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

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

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

The overbank flooding occurs at least once every two years.

NO – go to 5 **YES** – The Does the entire wetland meet all of the following criteria?

river.

Wetland name or number	WSH3
------------------------	------

S	Slope Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
S 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance)points = 3 • Slope is 1% - 2%	2
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>).	
	YES = 3 points NO = 0 points Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.	Figure
	Dense, uncut, herbaceous vegetation > 90% of the wetland area. Dense, uncut, herbaceous vegetation > 1/2 of area. Dense, woody, vegetation > 1/2 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Dense, uncut, herbaceous vegetation > 1/4 of area. Does not meet any of the criteria above for vegetation. Aerial photo or map with vegetation polygons	6
	Total for S 1 Add the points in the boxes above	8
S 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	(see p. 67)
	Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland X Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other YES multiplier is 2 NO multiplier is 1	Multiplier 2
•	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	16
·	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.	10
S 3	Does the wetland have the <u>potential</u> to reduce flooding and stream erosion?	(see p.68)
	S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows). • Dense, uncut, rigid vegetation covers > 90% of the area of the wetland points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0	6
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2
	Add the points in the boxes above	8
S 4	Does the wetland have the opportunity to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply. Wetland has surface runoff that drains to a river or stream that has flooding problems Other	(see p. 70) Multiplier
•	(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then add score to table on p. 1	8

	e questions apply to wetlands of all HGM classes.	Points (only 1 scor
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	per box)
H 1	Does the wetland have the potential to provide habitat for many species?	
	Check the types of vegetation classes present (as defined by Cowarain) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure
	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 3 structures points = 2 1 structure points = 0	0
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 X Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods H 1.3 Richness of Plant Species (see p. 75):	
	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	0
	the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes. [riparian braided channels]	0
	High = 3 points	
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants	0

Wetland name or number	WSH3
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetla	nd name or number WSH3	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh, crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include	0
	 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 	
	 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbedpoints = 3 	3
	 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	
	• There are no wetlands within 1/2 mile points = 0 H 2 TOTAL Score apportunity for providing hebitat Add the scores from H2 1 H2 2 H2 3 H2 4	
	H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	
. 1	TOTAL for H 1 from page 8	4

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSH3	
welland name of number	won.	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	$\mathbf{YES} = \mathbf{Go \ to \ SC \ 1.1} \qquad \mathbf{NO \ \underline{X}}$	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural	
	Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cat. 1
	332-30-151? YES = Category I NO = go to SC 1.2	Cut. 1
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II	Cat. I
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
	less than 10% cover of non-native plant species. If the non-native Spartina spp,, are only species	Cat. II
	that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Rating
	or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II
	or contiguous freshwater wetlands.	
SC2	Natural Heritage Wetlands (see p. 87)	
SCZ	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (see p. 87)	
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
	identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	YES = Category I NO = Is not a bog for purpose of rating	

Wet	land name or numberWSH3	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = \underline{X} not a forested wetland with special characteristics	Cat. I
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.)	
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.) YES = Category I NO = Category II	C 4 II
506	T (1 177 (1 1 (00)	Cat. II
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103 • Grayland-Westport lands west of SR 105 • Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	Cat. II Cat. III
	Category of wetland based on Special Characteristics	

Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered **NO** for all types enter "Not Applicable" on p. 1

NA

Wetland name or number	WSH4
------------------------	------

WETLAND RATING FORM – WESTERN WASHINGTON

 $Version\ 2-Updated\ July\ 2006\ to\ increase\ accuracy\ and\ reproducibility\ among\ users\ Updated\ Oct.\ 2008\ with\ the\ new\ WDFW\ definitions\ for\ priority\ habitats$

taille of w	vetland (if known): WS	H4		Date of	site vis	it:	3/25/12
ated by:_	M Maynard	_ Trained by Ecology	? Yes <u>X</u> No	Date of	training	g: <u>04/</u>	06
EC:	5 TWNSHP: 26N	RNGE: 4E	_ Is S/T/R in A	ppendix D	? Yes_		No <u>X</u>
	Map of wetland unit:	Figure	Estimated size				
		SUMMARY OF	RATING				
Category	based on FUNCTIONS provided	by wetland: I	II	III_	X	IV_	
	Category I = Score > 70	Score	for Water Quality Fu	nctions		14	
	Category II = Score 51 - 69	Sco	ore for Hydrologic Fu	nctions		10	
	Category III = Score 30 – 50		Score for Habitat Fu			10	
			TOTAL Score for Fu	ınctions		34	
~	Category IV = Score < 30	•	TOTAL Score for Fu			34	
Category l		•			Does not		
Category l	Category IV = Score < 30 based on SPECIAL CHARACTERI	•	I II	I	Does not		$\frac{1}{x}$
Category l	Category IV = Score < 30 Dased on SPECIAL CHARACTERI Final Category	ISTCS of Wetland GOTY (choose the "high	I II ghest" category from	I	Does not	t apply_	<u>x</u>
Category l	Category IV = Score < 30 based on SPECIAL CHARACTERI Final Category Summary of basic	ISTCS of Wetland GOTY (choose the "high information about the state of the state o	I II ghest" category from he wetland unit.	I	Does not	t apply_	X
ategory l	Category IV = Score < 30 Dased on SPECIAL CHARACTERI Final Category	ISTCS of Wetland GOTY (choose the "highing information about the land weter with the land with the	I II ghest" category from	I	Does not	t apply_	<u>X</u>
Category l	Category IV = Score < 30 Dased on SPECIAL CHARACTERIC Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine	ISTCS of Wetland GOTY (choose the "highing information about the land with the land w	I II ghest" category from he wetland unit. etland HGM Class used for Rating ssional	I	Does not	t apply_	x
Category l	Category IV = Score < 30 Dased on SPECIAL CHARACTERI Final Category Summary of basic Wetland Unit has Special Characteristics	ISTCS of Wetland GOTY (choose the "highing information about the land with the land w	III ghest" category from the wetland unit. etland HGM Class used for Rating ssional tine	above")	Does not	t apply_	X
ategory l	Category IV = Score < 30 Dased on SPECIAL CHARACTERIC Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	ISTCS of Wetland GOTY (choose the "highing information about the land with the land w	I II ghest" category from he wetland unit. etland HGM Class used for Rating ssional	above")	Does not	t apply_	<u>X</u>
ategory l	Category IV = Score < 30 Dased on SPECIAL CHARACTERIC Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ISTCS of Wetland GOTY (choose the "highing information about the land with the land w	III ghest" category from he wetland unit. etland HGM Class used for Rating essional ine fringe	above")	Does not	t apply_	<u>X</u>
ategory l	Category IV = Score < 30 Dased on SPECIAL CHARACTERIC Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	ISTCS of Wetland GOTY (choose the "highing information about the second of the second	III ghest" category from he wetland unit. etland HGM Class used for Rating ssional ine fringe	above")	Does not	t apply_	
ategory l	Category IV = Score < 30 Dased on SPECIAL CHARACTERIC Final Category Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ISTCS of Wetland GOTY (choose the "highing information about the second of the second	III ghest" category from he wetland unit. etland HGM Class used for Rating essional ine fringe	above")	Does not	t apply_	
Category l	Category IV = Score < 30 Dased on SPECIAL CHARACTERIC Summary of basic Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	ISTCS of Wetland GOTY (choose the "highing information about the second of the second	III ghest" category from he wetland unit. etland HGM Class used for Rating ssional ine fringe	above")	Does not	t apply_	

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WSH4
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO - go to 5 YES - The wetland class is Slope

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

NO - go to 6

YES - The wetland class is Riverine

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of 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

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

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

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

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

The overbank flooding occurs at least once every two years.

Does the entire wetland meet all of the following criteria?

river.

Wetland name or number	WSH4	
------------------------	------	--

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the potential to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	T2:
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	• Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	 Wetland has persistent, ungrazed vegetation > = 1/2 of area. Wetland has persistent, ungrazed vegetation > = 1/10 of area. points = 1 	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	3
	Map of Cowardin vegetation classes	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	8
	• Area seasonally ponded is > 1/2 total area of wetland	
	 Area seasonally ponded is > 1/4 total area of wetland	2
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	7
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	
	Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	 Unit is a depression with no surface water leaving it (no outlet)	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 The wetland is a "headwater" wetland	
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	0
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	• The area of the basin is less than 10 times the area of unit	3
	 The area of the basin is 10 to 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	5

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>		
	Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	10

Wetland name or number ______WSH4 _____

	questions apply to wetlands of all HGM classes.	Points (only 1 scor
	ABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	per box)
H 1	oes the wetland have the potential to provide habitat for many species?	
	Check the types of vegetation classes present (as defined by Cowarain) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover)	Figure
	X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	1
	Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated	Figure
	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Use map of Cowardin classes. Fight = 3 points Fight Fig	1
	 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that 	1
	are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	

Wetland name or number	WSH4
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetla	and name or number WSH4	
	H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslish.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth, 80 - 200 years old west of the Cascade crest). Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These incl	1
	 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
		- - 5
	TOTAL for H 1 from page 8	5

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSH4
------------------------	------

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.		
SC1	Estuar	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands? The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		YES = Go to SC 1.1 NO \underline{X}	
	SC 1.1	Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural	
		Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cat. 1
		332-30-151? YES = Category I NO = go to SC 1.2	
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	501.2	YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	Cat. I
		less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species	Cat. II
		that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
		with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
		determining the size threshold of 1 acre.	Dual
		At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Rating
		or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II
		or contiguous freshwater wetlands.	
SC2	Natura	al Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
		YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (S	see p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function. 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
		identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$YES = Category I \qquad NO = Is not a bog for purpose of rating$	

Wetl	land name or number WSH4	
SC4	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = X not a forested wetland with special characteristics	Cat. I
SC5	Wetlands in Coastal Lagoons (see p. 91) 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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.) YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74). At least 3/4 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 acre (4350 square ft.)	Cat. I
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis - lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	YES = Category II NO = go to SC 6.2 SC 6.2 Is the wetland between 0.1 and 1 acres or is it in a massic of wetlands that is between 0.1 and 1 acres?	Cat. II

YES = Category III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

If you answered NO for all types enter "Not Applicable" on p. 1

Cat. III

NA

Wetland name or number	WSH5	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

ame of wet	land (if known): WSH5			_ Date of	site visi	it:	3/21/12
ated by:	M Maynard Tr	rained by Ecology?	Yes X No	_ Date of	training	g:04/0	06
EC: 5	TWNSHP: <u>26N</u>	RNGE: 4E	Is S/T/R in Ap	pendix D	Yes_		No <u>X</u>
	Map of wetland unit: Fig	gure	Estimated size_				
		SUMMARY OF R	ATING				
Category ba	sed on FUNCTIONS provided by v	wetland: I	II	III_	X	IV_	
	Category I = Score > 70	Score fo	or Water Quality Fun	ctions		12	
	Category II = Score 51 - 69	Score	e for Hydrologic Fun	ctions		6	
			, ,			12	
	Category III = Score 30 = 50	S	core for Habitat Fun	ctions			
	Category IV = Score 30 – 50		core for Habitat Fun				
	Category III = Score 30 – 50 Category IV = Score < 30		core for Habitat Fun OTAL Score for Fun			30	
,		TO	OTAL Score for Fun	ctions	Does not	30	X
	Category IV = Score < 30 sed on SPECIAL CHARACTERIST	TO CS of Wetland I	OTAL Score for Fun	ctions I	Does not	30	$\frac{1}{x}$
,	Category IV = Score < 30 sed on SPECIAL CHARACTERISTO Final Categor	TO CS of Wetland I	OTAL Score for Fun II nest" category from a	ctions I	Does not	30 apply	$\frac{1}{x}$
•	Category IV = Score < 30 sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info	TO CS of Wetland I Y (choose the "high ormation about the	OTAL Score for Fun II nest" category from a	ctions I	Does not	30 apply	$\frac{1}{x}$
,	Category IV = Score < 30 sed on SPECIAL CHARACTERISTO Final Categor	CS of Wetland I 'Y (choose the "high ormation about the Wet	OTAL Score for Fun II nest" category from a	ctions I	Does not	30 apply	<u>x</u>
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special	CS of Wetland I 'Y (choose the "high ormation about the Wet	OTAL Score for Fun II nest" category from a ewetland unit. cland HGM Class sed for Rating	ctions I	Does not	30 apply	<u>x</u>
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special Characteristics	CS of Wetland I 'Y (choose the "high ormation about the Wet	OTAL Score for Fun II nest" category from a e wetland unit. cland HGM Class sed for Rating sional	Labove")	Does not	30 apply	
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine	CS of Wetland I 'Y (choose the "high ormation about the Wet u Depress	OTAL Score for Fun II nest" category from a e wetland unit. cland HGM Class sed for Rating sional e	Labove")	Does not	30 apply	<u>X</u>
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	CS of Wetland I 'Y (choose the "high ormation about the U Depress Rivering	OTAL Score for Fun II nest" category from a e wetland unit. cland HGM Class sed for Rating sional e	Labove")	Does not	30 apply	<u>x</u>
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	CS of Wetland I 'Y (choose the "high ormation about the U Depress Rivering Lake-fr	OTAL Score for Fun II nest" category from a e wetland unit. cland HGM Class sed for Rating sional e	Labove")	Does not	30 apply	<u>X</u>
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	CS of Wetland I CY (choose the "high ormation about the U Depress Rivering Lake-fr Slope Flats	OTAL Score for Fun II nest" category from a e wetland unit. cland HGM Class sed for Rating sional e	Labove")	Does not	30 apply	
,	Category IV = Score < 30 Sed on SPECIAL CHARACTERISTO Final Categor Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	CS of Wetland I CY (choose the "high ormation about the U Depress Rivering Lake-fr Slope Flats	OTAL Score for Fun II	Labove")	Does not	30 apply	

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

*** .1	The state of the s
Wet	land name or number WSH5
	Classification of Vegetated Wetlands for Western Washington
	the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with tiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.. NO – go to 6 **YES** – The wetland class is **Riverine** Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of

YES – The wetland class is **Slope**

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

the year. This means that any outlet, if present is higher than the interior of the wetland. YES - The wetland class is Depressional NO - go to 7

Is the entire wetland 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

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

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

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

The overbank flooding occurs at least once every two years.

Does the entire wetland meet all of the following criteria?

river.

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	 Unit is a depression with no surface water leaving it (no outlet)	riguit
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	1
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	0
	$\mathbf{YES} \ \mathbf{points} = 4 \qquad \qquad \mathbf{NO} \mathbf{points} = 0$	U
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	g
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/2 total area of wetland	0
	• Area seasonally ponded is < 1/4 total area of wetland	U
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the <u>opportunity</u> to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	<u>2</u>
	Other	
_	YES multiplier is 2 NO multiplier is 1	1.2
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	12
D 2	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
υs	D 3.1 Characteristics of surface water flows out of the wetland unit	(see p.40)
	• Unit is a depression with no surface water leaving it (no outlet)	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	0
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	U
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	 units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	• The wetland is a "headwater" wetland	0
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	
	Total for D 3 Add the points in the boxes above	3

D 4	D 4 Does the wetland have the opportunity to reduce flooding and erosion?	
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following</i>	
	indicators of opportunity apply. Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	6

Wetland name or number WSH5

HAB	tions apply to wetlands of all HGM classes.	Points
	ITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 sco per box)
H 1 Does	the wetland have the <u>potential</u> to provide habitat for many species?	per comy
H 1.1		Figure
H 1.2	2 structures	Figure
H 1 C	X Saturated only 1 type presentpoints = 0	3
H 1.3	Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
H 1.4	Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	
	None = 0 points Low = 1 point Moderate = 2 points or 3 vegetation classes and open water, the rating is always "high".	Figure
	None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Use map of Cowardin classes. High = 3 points	
H 1.5	None = 0 points Low = 1 point Moderate = 2 points Moderate = 2 points Use map of Cowardin classes. High = 3 points	0

Wetland name or number	WSH5
Tremana name of nameer	115115

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	Н 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland:	
		 Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? YES = 1 point NO = 0 points 	0

Wetland name or number WSH5	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These inclu	1
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84). There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	7

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WSH5	
------------------------	------	--

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		na Type – Check off any criteria that apply to the wetlana. Circle the Category when the appropriate	
		are met.	
SC1	<u>Estuar</u>	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	50 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1
	Dogg (s	· · · · · · · · · · · · · · · · · · ·	
SC3	bogs (S	nee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wetl	and name or number WSH5	
SC4	Forested Wetlands (see p. 90)	
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \underline{X} \text{ not a forested wetland with special characteristics}$	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 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 acre (4350 square ft.)	Cat. I
	YES = Category I NO = Category II	Cat. II
000	Interdunal Wetlands (see p. 93)	Cat. 11
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	 Long Beach Peninsula lands west of SR 103 Grayland-Westport lands west of SR 105 	
	• Ocean Shores-Copalis – lands west of SR 115 and SR 109	

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

NO = go to SC 6.2

YES = Category II

YES = Category III

If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

Cat. II

Cat. III

NA

Wetland name or number	WMT1	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

name of w	etland (if known):	WMT1			_ Date of	site visi	t: <u>3</u>	3/27/12
Rated by:_	M Maynard	Trai	ned by Ecology?	Yes X No	_ Date of	training	:04/0	06
SEC:	32 TWNSHP:	27N F	RNGE: 4E	Is S/T/R in Ap	pendix D?	Yes		No <u>X</u>
	Map of wetla	and unit: Figu	re	Estimated size_				
		S	UMMARY OF I	RATING				
Category l	based on FUNCTIONS p	provided by we	tland: I	II	III	X	IV	
ļ	Category I = Score	> 70	Score f	or Water Quality Fur	nctions		12	
ļ	Category II = Score :	51 - 69	Scor	e for Hydrologic Fur	nctions		6	
ļ	Category III = Score 3	30 – 50	:	Score for Habitat Fur	nctions		12	
	Category IV = Score	< 20	7	OTAL Casas for East	ations		30	
i	Category IV = Score	< 30	1	OTAL Score for Fur	ictions		30	
Category b	pased on SPECIAL CHAR					oes not		
Category b	pased on SPECIAL CHAR	RACTERISTCS	S of Wetland		D	oes not		<u>х</u>
Category b	pased on SPECIAL CHAR	RACTERISTES l Category	S of Wetland	I II thest" category from	D	oes not	apply_	<u>X</u>
Category b	pased on SPECIAL CHAR Fina Summary Wetland Unit 1	RACTERISTCS I Category of basic inforhas Special	S of Wetland (choose the "hig mation about the We	I II II ehest" category from e wetland unit.	D	oes not	apply_	<u> </u>
Category b	pased on SPECIAL CHAR Fina Summary Wetland Unit I Character	RACTERISTCS I Category of basic inforhas Special	S of Wetland (choose the "hig mation about th We	I II I	above")	oes not	apply_	<u>x</u>
Category b	sased on SPECIAL CHAR Fina Summary Wetland Unit I Character Estuarine	RACTERISTCS I Category of basic infor has Special ristics	S of Wetland (choose the "hig mation about the Wetland Depres	thest" category from e wetland unit. etland HGM Class used for Rating esional	D	oes not	apply_	<u>x</u>
ategory b	Summary Wetland Unit I Character Estuarine Natural Heritage	RACTERISTCS I Category of basic infor has Special ristics	choose the "hig mation about th We Depres Riverin	thest" category from e wetland unit. etland HGM Class used for Rating esional ne	above")	oes not	apply_	<u> </u>
Category b	Summary Wetland Unit I Character Estuarine Natural Heritage	RACTERISTCS I Category of basic infor has Special ristics	choose the "hig mation about th We Depres Riverin Lake-f	thest" category from e wetland unit. etland HGM Class used for Rating esional ne	above")	oes not	apply_	<u> </u>
Category b	Summary Wetland Unit I Character Estuarine Natural Heritage Bog Mature Forest	RACTERISTES I Category y of basic informas Special ristics e Wetland	choose the "hig mation about th We Depres Riverin Lake-f Slope	thest" category from e wetland unit. etland HGM Class used for Rating esional ne	above")	oes not	apply_	<u>x</u>
Category b	Summary Wetland Unit I Character Estuarine Natural Heritage	RACTERISTES I Category y of basic informas Special ristics e Wetland	choose the "hig mation about th We Depres Riverin Lake-f Slope Flats	thest" category from e wetland unit. etland HGM Class used for Rating esional ne	above")	oes not	apply_	<u> </u>
Category b	Summary Wetland Unit I Character Estuarine Natural Heritage Bog Mature Forest Old Growth For	RACTERISTES I Category y of basic informas Special ristics e Wetland	choose the "hig mation about th We Depres Riverin Lake-f Slope Flats	thest" category from e wetland unit. etland HGM Class used for Rating esional ne ringe	above")	oes not	apply_	<u>X</u>

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WMT1
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe is is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep, NO - go to 5 YES - The wetland class is Slope

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding... NO – go to 6 **YES** – The wetland class is **Riverine** Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland. YES - The wetland class is Depressional

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

Is the entire wetland 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 8YES - The wetland class is Depressional

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

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

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

The overbank flooding occurs at least once every two years.

Does the entire wetland meet all of the following criteria?

NO - go to 7

river.

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	• Unit is a depression with no surface water leaving it (no outlet)	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	1
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area. Wetland has persistent, ungrazed vegetation > = 1/2 of area. points = 3 	rigure
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	 Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	6
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	<u>2</u>
	Other Other NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	12
_	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	12
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	0
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	Ü
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 The wetland is a "headwater" wetland	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	• The area of the basin is less than 10 times the area of unit	3
	 The area of the basin is 10 to 100 times the area of the unit	
	• Entire unit is in the FLATS class	L
	Total for D 3 Add the points in the boxes above	3

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	 [
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	6

Wetland name or number ______WMT1 ____

Thes	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	per dony
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures	Figure
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated Seasonally flooded or inundated X Seasonally flooded or inundated X Saturated only X Semanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same	
	species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and	Figure
	None = 0 points Low = 1 point Moderate = 2 points open water, the rating is always "high".	
	Use map of Cowardin classes [riparian braided channels]	0
	High = 3 points H 1.5 Special Habitat Features (see p. 77):	
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that	2
	are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	7

Wetland name or number WMT1

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number WMT1	
H 2.3 Near or adiacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These inclu	1
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 	
 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
• There is at least 1 wetland within 1/2 mile	
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	7

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		na Type – Check off any criteria that apply to the wetlana. Circle the Category when the appropriate	
		are met.	
SC1	<u>Estuar</u>	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	50 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1
	Dogg (s	· · · · · · · · · · · · · · · · · · ·	
SC3	bogs (S	nee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wet	land name or numberWMT1	
G G 4	Forested Wetlands (see p. 90)	
SC4	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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. YES = Category I NO = \underline{X} not a forested wetland with special characteristics	Cat. I
SC5	Wetlands in Coastal Lagoons (see p. 91)	
503	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.)	
	$\mathbf{YES} = \text{Go to SC } 5.1 \qquad \mathbf{NO} \underline{X} \text{not a wetland in a coastal lagoon}$	
	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 invasive plant species (see list of invasive species on p. 74). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. 1
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
BCU	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	 Grayland-Westport lands west of SR 105 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1. If you answered **NO** for all types enter "Not Applicable" on p. 1

Comments:

YES = Category III

Category of wetland based on Special Characteristics

Cat. II

Cat. III

NA

Wetland name or number W	/MT2
--------------------------	------

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	tland (if known): WMT2			_ Date of	site visi	t: <u>3</u>	3/27/12
Rated by:	M Maynard Tra	ined by Ecology?	Yes X No	_ Date of	training	: 04/0	6
SEC: 3	2 TWNSHP:27N 1	RNGE: 4E	Is S/T/R in Ap	pendix D?	Yes	N	No <u>X</u> _
	Map of wetland unit: Figu	ıre	Estimated size_				
	S	UMMARY OF R	ATING				
Category ba	ased on FUNCTIONS provided by wo			III	X	IV	
Г	Category I = Score > 70	Score fo	or Water Quality Fun	nctions		16	
	Category II = Score 51 - 69	Score for Hydrologic Functions			16		
	Category III = Score 30 – 50	S	core for Habitat Fur	nctions		11	
	Category IV = Score < 30	To	OTAL Score for Fun	nctions		43	
					_		
Category ba	sed on SPECIAL CHARACTERISTC	S of Wetland I	II	D	oes not	apply	X
Category ba					oes not	apply	$\frac{\mathbf{x}}{1}$
Category ba	Final Category	(choose the "high	nest" category from		oes not		$\frac{\mathbf{x}}{\mathbf{J}}$
Category ba		(choose the "high	nest" category from		oes not		<u>X</u>
Category ba	Final Category Summary of basic inform Wetland Unit has Special Characteristics	cmation about the Wet	e wetland unit. cland HGM Class sed for Rating		oes not		<u> </u>
Category ba	Final Category Summary of basic inform Wetland Unit has Special Characteristics Estuarine	rmation about the Wet u Depress	e wetland unit. cland HGM Class sed for Rating sional	above")	oes not		<u>x</u>
Category ba	Final Category Summary of basic information Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	rmation about the Wet u Depress Riverin	e wetland unit. cland HGM Class sed for Rating sional		Ooes not		<u>x</u>
Category ba	Final Category Summary of basic inform Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	wet wet with the control of the cont	e wetland unit. cland HGM Class sed for Rating sional	above")	Poes not		<u>x</u>
Category ba	Final Category Summary of basic inform Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	rmation about the Wet u Depress Riverin Lake-fr	e wetland unit. cland HGM Class sed for Rating sional	above")	Poes not		<u>X</u>
Category ba	Final Category Summary of basic inform Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	rmation about the Wet U Depress Riverin Lake-fr Slope Flats	e wetland unit. cland HGM Class sed for Rating sional e inge	above")	Poes not		<u>X</u>
Category ba	Final Category Summary of basic inform Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	rmation about the Wet U Depress Riverin Lake-fr Slope Flats	e wetland unit. cland HGM Class sed for Rating sional	above")	Poes not		<u>X</u>

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetl	land name or numberWMT2
	Classification of Vegetated Wetlands for Western Washington
	ne hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with tiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?

Does the entire wetland meet all of the following criteria?

 The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river.
 The overbank flooding occurs at least once every two years.
 NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding..
 NO – go to 6
 YES – The wetland class is Riverine

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

NO - go to 5

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

YES – The wetland class is **Slope**

NO – go to 7 YES – The wetland class is **Depressional**7. Is the entire wetland 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 your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

Wetland name or number	<u> </u>
------------------------	----------

R	R Riverine and Freshwater Tidal Fringe Wetlands		
	WATER QUALITY FUNCTIONS - Indicators that wetland functions to improve water quality.		
R 1	Does the wetland have the <u>potential</u> to improve water quality? (see p.52)	per box)	
	R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event:	Figure	
	 Depressions cover > 3/4 area of wetland	riguit	
	(If depressions > 1/2 of area of unit draw polygons on aerial photo or map)		
	Depressions present but cover < 1/2 area of wetland. No depressions present points = 0 Points = 0	0	
	R 1.2 Characteristics of the vegetation in the unit (areas with >90% cover at person height):		
	• Trees or shrubs $> 2/3$ area of the unit points $= 8$	Figure	
	 Trees or shrubs > 1/3 area of the wetland		
	• Ungrazed herbaceous plants > 1/3 area of unit		
	• Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit	8	
	Add the points in the boxes above	8	
R 2	Does the wetland have the opportunity to improve water quality?	(see p. 53)	
N 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	, ,	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient		
	from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.		
	Grazing in the wetland or within 150 ft		
	Untreated stormwater discharges to wetland		
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed		
	fields, roads, or clear-cut logging		
	 X Residential, urban areas, golf courses are within 150 ft. of wetland The river or stream linked to the wetland has a contributing basin where human activities have 		
	raised levels of sediment, toxic compounds or nutrients in the river water above standards for	Multiplier	
	water quality. Other	<u>2</u>	
	YES multiplier is 2 NO multiplier is 1		
♦	TOTAL – Water Quality Functions Multiply the score from R1 by R2; then add score to table on p. 1	16	
	HYDROLOGIC FUNCTIONS - Indicators that wetland functions to reduce flooding and stream erosion.		
R 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.54)	
	R 3.1 Characteristics of the overbank storage the wetland provides: Estimate the average width of the wetland	Figure	
	perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks).		
	• If the ratio is more than 20 points = 9		
	• If the ratio is between $10-20$		
	• If the ratio is $1-\langle 5 \rangle$ points = 2	1	
	• If the ratio is < 1	1	
	Aerial photo or map showing average widths R 3.2 Characteristics of vegetation that slow down water velocities during floods: Treat large woody debris as		
	"forest or shrub". Choose the points appropriate for the best description. (polygons need to have >90%	Figure	
	cover at person height NOT Cowardin classes):		
	 Forest or shrub for > 1/3 area OR herbaceous plants > 2/3 area	7	
	• Vegetation does not meet above criteriapoints = 0	/	
	Aerial photo or map showing polygons of different vegetation types		
	Add the points in the boxes above		
R 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	(see p.57)	
	Answer YES if the wetland is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or		
	erosive flows. Note which of the following conditions apply.		
	X There are human structures and activities downstream (roads, buildings, bridges, farms) that can		
	be damaged by flooding. There are natural resources downstream (e.g. salmon redds) that can be damaged by flooding		
	Other	Multiplier	
	(Answer NO if the major source of water to the wetland is controlled by a reservoir or the wetland is	2	
	tidal fringe along the sides of a dike) VES, multiplier is 2. NO, multiplier is 1.		
	YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from R3 by R4; then add score to table on p. 1	16	

H 1 Does the v	Γ FUNCTIONS – Indicators that wetland functions to provide important habitat. wetland have the potential to provide habitat for many species?	(only 1 score
H 1.1 Ve	wetland have the notential to provide habitat for many species?	
C	wettand have the <u>potential</u> to provide habitation many species.	
	egetation structure (see P. 72): Theck the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) The unit has a forested class check if:	Figure
$\frac{\dot{X}}{cc}$	The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-over) that each cover 20% within the forested polygon. **Map of Cowardin vegetation classes** 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	1
Ci ca	ydroperiods (see p.73): The keek the types of water regimes (hydroperiods) present within the wetland. The water regime has to over more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 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	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
Sp Yo lo	ichness of Plant Species (see p. 75): ount the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same pecies can be combined to meet the size threshold) ou do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple posestrife, Canadian Thistle. If you counted: > 19 species	1
De	terspersion of Habitats (see p. 76): ecided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
(Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
A	Use map of Cowardin classes [riparian braided channels]	. 0
C	High = 3 points Decial Habitat Features (see p. 77): Theck the habitat features that are present in the wetland. The number of checks is the number of points ou put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)	2
н	Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error. 1 TOTAL Score – potential for providing habitat Add the points in the column above	6

	Wetland name or number	WMT2
--	------------------------	------

H 2	2 Does the wetland have the <u>opportunity</u> to provide habitat for many species?		
	Н 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or numberWMT2	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report habitaty. Madik wa, goy/hab/pslist.hm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undistrubed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests; (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X. Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These in	
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 8) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 1. The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.	5_
TOTAL for H 1 from page	3 6

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number W	/MT2
--------------------------	------

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Welland Type – Check off any criteria that apply to the wetlana. Circle the Category when the appropriate			
	criteria are met.			
SC1	<u>Estuar</u>	ine wetlands? (see p.86)		
		Does the wetland unit meet the following criteria for Estuarine wetlands?		
		The dominant water regime is tidal,		
		Vegetated, and		
		With a salinity greater than 0.5 ppt.		
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$		
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1	
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?		
		YES = Category I NO = Category II	Cat. I	
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has		
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II	
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating	
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II	
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)		
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as		
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or		
		Sensitive plant species.		
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This		
		question is used to screen out most sites before you need to contact WNHP/DNR.)		
		S/T/R information from Appendix D or accessed from WNHP/DNR web site		
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO		
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened		
	50 2.2	or endangered plant species?	Cat I	
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1	
	Dogg (s	· · · · · · · · · · · · · · · · · · ·		
SC3	bogs (S	nee p. 87)		
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use		
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the		
		wetland based on its function.		
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2		
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over		
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or		
		pond? YES = go to question 3 NO = is not a bog for purpose of rating		
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,		
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more		
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?		
		YES = Is a bog for purpose of rating $NO = go$ to question 4		
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that		
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is		
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.		
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western		
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of		
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I	
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$		

Wetl	land name or numberWMT2			
SC4	Forested Wetlands (see p. 90)			
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish			
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland			
	based on its function.			
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)			
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or			
	more).			
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees			
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW			
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.			
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old			
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than			
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	G . T		
	less than that found in old-growth.	Cat. I		
G G =	YES = Category I NO = X not a forested wetland with special characteristics Wetlands in Coastal Lagoons (see p. 91)			
SC5	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 surface water that is saline or brackish (> 0.5			
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the			
	bottom.)			
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74). At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed			
	or un-mowed grassland.	Cot I		
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I		
	YES = Category I NO = Category II	Cat. II		
SC6	Interdunal Wetlands (see p. 93)	0400 22		
SCO	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or			
	WBUO)?			
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating			
	If you answer yes you will still need to rate the wetland based on its functions.			
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103			
	• Grayland-Westport lands west of SR 105			
	Ocean Shores-Copalis – lands west of SR 115 and SR 109			
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?			
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} \ = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II		
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?			
	YES = Category III	Cat. III		

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

If you answered NO for all types enter "Not Applicable" on p. 1

NA

Wetland name or number	WMT3	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	vetland (if known): WMT3			_ Date of	site visi	it: <u>3</u>	8/28/12
Rated by:_	M Maynard	Γrained by Eco	ology? Yes X No	_ Date of	training	g: <u>04/06</u>	i
SEC: <u>3</u>	32 TWNSHP: 27N	RNGE:	4E Is S/T/R in Ap	pendix D?	Yes_	No	o <u>X</u>
	Map of wetland unit: F	igure	Estimated size_				
		SUMMARY	OF RATING				
Category	based on FUNCTIONS provided by	wetland: I_	II	III	X	IV	
	Category I = Score > 70	S	core for Water Quality Fur	nctions		16	
	Category II = Score 51 - 69		Score for Hydrologic Fur	nctions		14	1
	Category III = Score 30 – 50		Score for Habitat Fur	nctions		9	1
	Category IV = Score < 30		TOTAL Score for Fur	nctions		39	1
Category based on SPECIAL CHARACTERISTCS of V			d I II	D	oes not	apply	X
	Final Catego	ry (choose th	e "highest" category from	above")		III	1
		-	e "highest" category from	above")		III]
	Summary of basic in Wetland Unit has Special	-	out the wetland unit. Wetland HGM Class	above")		III]
	Summary of basic in Wetland Unit has Special Characteristics	formation ab	out the wetland unit. Wetland HGM Class used for Rating			III]
	Summary of basic in Wetland Unit has Special Characteristics Estuarine	formation ab	out the wetland unit. Wetland HGM Class used for Rating Depressional	above")		III	
	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	formation ab	out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine			Ш	
	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	formation ab	out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe			Ш	
	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	formation ab	out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe lope			III]
	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	formation ab	out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Rational			III]
	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	formation ab	out the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe lope			III]

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WMT3
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4. Does the entire wetland 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?

river.

The overbank flooding occurs at least once every two years.

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

NO – go to 6

YES – The wetland class is Riverine

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

NO - go to 5

Does the entire wetland meet all of the following criteria?

NO – go to 7 YES – The wetland class is **Depressional**7. Is the entire wetland located in a very flat area with no obvious depression and no overbank flooding. The unit does not

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

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

YES – The wetland class is **Slope**

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

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

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

Wetland name or number	WMT3
------------------------	------

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
	 Unit is a depression with no surface water leaving it (no outlet)	riguit
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	3
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	_
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area. Wetland has persistent, ungrazed vegetation > = 1/2 of area. points = 3 	rigure
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	 Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? <i>Note which of the following conditions provide the sources of pollutants. A unit</i>	
	may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	 X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	<u>2</u>
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i>	16
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	45)
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface	4
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 The wetland is a "headwater" wetland	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Marks of ponding less than 0.5 ft	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	• The area of the basin is less than 10 times the area of unit	3
	• The area of the basin is 10 to 100 times the area of the unit	3
	 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5 	
	Total for D 3 Add the points in the boxes above	7

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
♦	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	14

Wetland name or number ______WMT3 ____

11 1.0	Thes	e questions apply to wetlands of all HGM classes.	Points
H 1.0		HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 scor per box)
H 1.1 Vegetation structure (nee P. 72): Check the types of vegetation classes present (as defined by Cowardin) - Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed	Н 1	Does the wetland have the notential to provide habitat for many species?	per box)
H 1.2 Hydroperiods (see p. 73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated		H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures	
Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species		H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 X Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes. H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) over a stream (or ditch) in, or contiguous with the unit, for at least 37 of the unit, for at least 37 of the unit, for at least 37 of the unit of the unit, for at least 37 of the unit, for		Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants		Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	
NOTE: ΤΗΡ 2020 ΧΙΠΙΡΗ ΤΗ ΡΟΓΙΑ ΟΓΙΜΠΙΟΝ ΟΙ ΤΗΡ ΜΙΜΠΙΙΗ ΟΝ ΒΛΙΘΟ 7Α ΙΝ ΔΗ DEFOR		H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians)	1
H 1 TOTAL Score – potential for providing habitat Add the points in the column above 4			Л

Wetland name or number	WMT3
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number WMT3	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X. 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, on-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These includ	
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 8) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 	
 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
• There is at least 1 wetland within 1/2 mile	,
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	1 5
TOTAL for H 1 from page	3 4

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WMT3	
------------------------	------	--

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		ind Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
		are met.	
SC1	Estuar	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		$YES = Category I \qquad NO = Category II$	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual Rating
		or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	Natura	l Heritage Wetlands (see p. 87)	
SCZ	1141414	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	SC 2.1	question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
		YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (s	ee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover ($> 30\%$ coverage of the total shrub/herbaceous cover)?	Cot I
		YES = Category I NO = Is not a bog for purpose of rating	Cat. I
		TES - Category I	

Wetl	and name or number WMT3	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland based on its function. — Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. — Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
SC5	Wetlands in Coastal Lagoons (see p. 91) 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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom.) YES = Go to SC 5.1 NO _X_ 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 invasive plant species (see list of invasive species on p. 74). At least 3/4 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 acre (4350 square ft.) YES = Category I NO = Category II	Cat. I
SC6	Interdunal Wetlands (see p. 93) Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES = Go to SC 6.1 NO X not an interdunal wetland for rating If you answer yes you will still need to rate the wetland based on its functions. In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103 • Grayland-Westport lands west of SR 105 • Ocean Shores-Copalis - lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	2

NO = go to SC 6.2

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

Comments:

YES = Category II

YES = Category III

If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

Cat. II

Cat. III

NA

Wetland name or number	WMT4
------------------------	------

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

name of w	etland (if known):	WMT4		_ Date of	site visi	t: <u>.</u>	3/29/12
Rated by:_	M Maynard	Trained by	Ecology? Yes X No	_ Date of	training	: 04/0)6
SEC:	32 TWNSHP: 271	N RNGE:	4E Is S/T/R in Ap	pendix D'	? Yes		No <u>X</u> _
	Map of wetland un	nit: Figure	Estimated size_				
		SUMMA	RY OF RATING				
Category l	pased on FUNCTIONS provid	led by wetland:	I II	III_	X	IV	
!	Category I = Score > 70		Score for Water Quality Fun	ctions		16	
	Category II = Score 51 - 6		Score for Hydrologic Fun			6	
	Category III = Score 30 – 5		Score for Habitat Fun			12	
		0					
	Category IV = Score < 30		TOTAL Score for Fun	ctions		34	
Category b	ased on SPECIAL CHARACT	ERISTCS of We	tland I II	I	Ooes not	apply_	X
	Final Ca	tegory (choos	e the "highest" category from a	above")		III	
		•	about the wetland unit.	,			
	Wetland Unit has Sp		Wetland HGM Class				
	Characteristics						
			used for Rating Depressional	X			
	Characteristics		used for Rating	X			
	Characteristics Estuarine Natural Heritage Wet Bog		used for Rating Depressional	X			
	Characteristics Estuarine Natural Heritage Wet Bog Mature Forest		used for Rating Depressional Riverine	X			
	Characteristics Estuarine Natural Heritage Wet Bog		used for Rating Depressional Riverine Lake-fringe Slope Flats	X			
	Characteristics Estuarine Natural Heritage Wet Bog Mature Forest Old Growth Forest Coastal Lagoon		used for Rating Depressional Riverine Lake-fringe Slope	X			
	Characteristics Estuarine Natural Heritage Wet Bog Mature Forest Old Growth Forest		used for Rating Depressional Riverine Lake-fringe Slope Flats	X			
	Characteristics Estuarine Natural Heritage Wet Bog Mature Forest Old Growth Forest Coastal Lagoon		used for Rating Depressional Riverine Lake-fringe Slope Flats	X			

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number		WMT	<u>4</u>	
	CI.	• 6•	. •	O T 7

Classification of Vegetated Wetlands for Western Washington

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

1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
1	
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding
	NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
	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 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
٠.	slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO
	BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT
	AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the
	rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less
	·

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.			
HGM Classes within the wetland unit being rated	HGM Class to Use in Rating		
Slope + Riverine	Riverine		
Slope + Depressional	Depressional		
Slope + Lake-fringe	Lake-fringe		
Depressional + Riverine along stream within boundary	Depressional		
Depressional + Lake-fringe	Depressional		
Salt Water Tidal Fringe and any other class of	Treat as ESTUARINE under wetlands with special		
freshwater wetland	characteristics		

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
		per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)points = 3 	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	1
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	0
	YES points = 4 NO points = 0	· ·
	 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): Wetland has persistent, ungrazed vegetation >= 95% of areapoints = 5 	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years.	Figure
	• Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	2
	Total for D 1 Map of Hydroperiods Add the points in the boxes above	
D 4		(see p. 44)
D 2	Does the wetland have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 44)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	<u>2</u>
	Other Other NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	16
Ť	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	10
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
<i>D</i> 3	D 3.1 Characteristics of surface water flows out of the wetland unit	(1
	• Unit is a depression with no surface water leaving it (no outlet)points = 4	
	• Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	0
	• Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	U
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	• The wetland is a "headwater" wetland points = 5	0
	 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	
	• Warks are at least 0.5 it. to < 2 it. from surface or bottom of outlet	
	• Marks of ponding less than 0.5 ft points = 0	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	
	basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unitpoints = 5	_
	• The area of the basin is 10 to 100 times the area of the unit	3
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class	<u> </u>
	Total for D 3 Add the points in the boxes above	3

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> Wetland is in a headwater of a river or stream that has flooding problems.	
	 Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems 	
	Other	
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	6

Wetland name or number WMT4

	tions apply to wetlands of all HGM classes.	Points
HAB	ITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 sco
1 Does	the wetland have the <u>potential</u> to provide habitat for many species?	per com/
H 1.1		
	4 structures or more points = 4 3 structures points = 2 2 structures points = 1 1 structure points = 0	
H 1.2	Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more 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	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
Н 1.3	Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
H 1.4	Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
H 1.4	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or	Figure
H 1.4	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	
H 1.4	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	1

Wetland name or number	WMT4
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	1
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are a least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	t 0

Wetland name or numberWMT4	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). X Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These includ	1
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, 	
 but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	3
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 mile	
• There are no wetlands within 1/2 milepoints = 0 H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	5
TOTAL for H 1 from page 8	7

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WMT4	
welland hame of humber	VV IVI I 4	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		na Type – Check off any criteria that apply to the wetlana. Circle the Category when the appropriate	
		are met.	
SC1	<u>Estuar</u>	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	50 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1
	Dogg (s	· ·	
SC3	bogs (S	nee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wet	land name or numberWMT4	
SC4	Forested Wetlands (see p. 90)	
504	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more). NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	YES = Category I NO = X not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	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 surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category I NO = Category II	Cat. II
SC6	<u>Interdunal Wetlands</u> (see p. 93)	
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO \underline{X} not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas: • Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	Ocean Shores-Copalis – lands west of SR 115 and SR 109	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II
1	SC 6.2. Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	

YES = Category III

Category of wetland based on Special Characteristics

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

If you answered NO for all types enter "Not Applicable" on p. 1

Cat. III

NA

Wetland name or number	WMT5	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

Acted by: M Maynard Trained by Ecology? Yes X No Date of training: 04/06 EEC: 29 TWNSHP: 27N RNGE: 4E Is S/T/R in Appendix D? Yes No X Map of wetland unit: Figure Estimated size SUMMARY OF RATING Category based on FUNCTIONS provided by wetland: I II MIX IV Category II = Score > 70 Category II = Score 51 - 69 Category III = Score 50 Score for Hydrologic Functions Category IV = Score < 30 Category IV = Score Sore Functions A Score for Water Quality Functions A Score for Hydrologic Functions A Score for Hyd		Tanu (II kilowii). WW15			_ Date of	site visit: 4/3	3/12
SUMMARY OF RATING Lategory based on FUNCTIONS provided by wetland: I	ated by:	M Maynard	Trained by	Ecology? Yes X No	_ Date of	training: 04/0	6
SUMMARY OF RATING Category based on FUNCTIONS provided by wetland: I II III X IV Category I = Score > 70 Category II = Score 51 - 69 Category III = Score 30	EC: 29	TWNSHP: 27N	RNGE:	4E Is S/T/R in Ap	pendix D'	? Yes N	No <u>X</u>
SUMMARY OF RATING Category based on FUNCTIONS provided by wetland: I II III X IV Category I = Score > 70 Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score < 30		Man of watland unit	Figure	Estimated size	-		
Category I = Score > 70 Category II = Score 51 - 69 Category IV = Score 30 - 50 Category IV = Score < 30 Category IV = Score for Hydrologic Functions TOTAL Score for Functions 30 Category IV = Score < 30 Category IV = Score < 30 Category IV = Score < 30 Category IV = Score < 30 Category IV = Score for Hydrologic Functions 4 Category IV = Score < 30 Category IV = Score for Hydrologic Functions 5 Category IV = Score 51 - 69 Score for Water Quality Functions 5 Category IV = Score for Water Quality Functions 7 Category IV = Score for Water Quality Functions 7 Category IV = Score for Hydrologic Functions 9 Category IV = Score for Hydrologic Functi		Map of wetland unit:	rigure	Estiliateu size_			
Category I = Score > 70 Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score < 30 Category IV = Score < 30 TOTAL Score for Functions Total Score for Habitat Functions Total Score for Functions Total Score for Habitat Functions Total Score			SUMM	ARY OF RATING			
Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score < 30 Category based on SPECIAL CHARACTERISTCS of Wetland I Does not apply X Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above V	ategory ba	sed on FUNCTIONS provided b	y wetland:	I II	III	IV	
Category II = Score 51 - 69 Category III = Score 30 - 50 Category IV = Score < 30 TOTAL Score for Hydrologic Functions TOTAL Score for Hydrologic Functions TOTAL Score for Hubral Functions TOTAL Score for Hydrologic Functions TOTAL Score for Hydrologic Functions TOTAL Score for Hubral Functions TOTAL Score for Hubral Functions TOTAL Score for Functions TOTAL Score for Hubral Functions TOTAL Score for Functions TOTAL	Г	Catagory I - Soora > 70		Saara for Water Quality Fun	ations	1.4	
Category III = Score 30 - 50 Category IV = Score < 30 TOTAL Score for Functions TOTAL Score for Functions 30 Total Score for Functions Total Score for Habitat Functions Total Score for Functions Total Score f				•			_
Category IV = Score < 30 TOTAL Score for Functions 30 Tategory based on SPECIAL CHARACTERISTCS of Wetland I II Does not apply X Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Used for Rating Estuarine Depressional X Natural Heritage Wetland Riverine Uake-fringe Slope Mature Forest Slope Flats Coastal Lagoon Freshwater Tidal None of the above Y Check if unit has multiple		Category II = Score 51 - 69		Score for Hydrologic Fun	ctions	7	
Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above V Final Category (choose the "highest" category from above") Wetland HGM Class used for Rating Depressional X Riverine Lake-fringe Slope Flats Freshwater Tidal Check if unit has multiple		Category III = Score 30 – 50		Score for Habitat Fun	ctions	9	
Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above V Wetland HGM Class used for Rating Depressional X Riverine Lake-fringe Slope Flats Coastal Lagoon Freshwater Tidal Check if unit has multiple		Category IV = Score < 30		TOTAL Score for Fun	ctions	30	
Final Category (choose the "highest" category from above") Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above V Wetland HGM Class used for Rating Depressional X Riverine Lake-fringe Slope Flats Coastal Lagoon Freshwater Tidal Check if unit has multiple							
Summary of basic information about the wetland unit. Wetland Unit has Special Characteristics Estuarine None of the above Summary of basic information about the wetland unit. Wetland HGM Class used for Rating Depressional X Riverine Slope Slope Flats Coastal Lagoon Interdunal Check if unit has multiple	∟ ateoory had	sed on SPECIAL CHARACTERIS	STCS of W	etland I II	Г	oes not annly	x
Wetland Unit has Special Characteristics Estuarine Depressional Riverine Lake-fringe Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above Wetland HGM Class used for Rating Estuaring Netland HGM Class Used for Rating Estuarine Slope Flats Flats Check if unit has multiple Check if unit has multiple	Category bas						
Wetland Unit has Special Characteristics Estuarine Depressional Riverine Lake-fringe Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above Wetland HGM Class used for Rating Estuaring Netland HGM Class Used for Rating Estuarine Slope Flats Flats Check if unit has multiple Check if unit has multiple	tategory bas						
Estuarine Natural Heritage Wetland Bog Lake-fringe Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above Depressional X Riverine Lake-fringe Slope Flats Flats Freshwater Tidal Check if unit has multiple	Category bas	Final Categ	ory (choo	se the "highest" category from a			$\frac{1}{x}$
Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above Riverine Lake-fringe Slope Flats Freshwater Tidal Check if unit has multiple	tategory bas	Final Categ	ory (choo	se the "highest" category from a			
Bog Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above Lake-fringe Slope Flats Flats Freshwater Tidal Check if unit has multiple	ategory ba	Final Categ Summary of basic i Wetland Unit has Specia	ory (choo	se the "highest" category from a n about the wetland unit. Wetland HGM Class			$\frac{1}{x}$
Mature Forest Old Growth Forest Coastal Lagoon Interdunal None of the above Y Slope Flats Freshwater Tidal Check if unit has multiple	ategory ba:	Final Categ Summary of basic i Wetland Unit has Specia Characteristics Estuarine	ory (choo	n about the wetland unit. Wetland HGM Class used for Rating Depressional	above")		
Old Growth Forest Coastal Lagoon Interdunal None of the above Y Flats Freshwater Tidal Check if unit has multiple	ategory ba	Final Categ Summary of basic is Wetland Unit has Specia Characteristics Estuarine Natural Heritage Wetland	ory (choo	n about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	above")		<u>x</u>
Coastal Lagoon Interdunal None of the above Y Check if unit has multiple	ategory ba	Final Categ Summary of basic is Wetland Unit has Specia Characteristics Estuarine Natural Heritage Wetland Bog	ory (choo	n about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	above")		
Interdunal None of the above Y Check if unit has multiple	ategory ba	Final Categ Summary of basic is Wetland Unit has Specia Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	ory (choo	se the "highest" category from a n about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	above")		$\frac{1}{2}$
None of the above Y Check if unit has multiple	ategory ba	Final Categ Summary of basic is Wetland Unit has Specia Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	ory (choo	se the "highest" category from a n about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats	above")		$\frac{1}{2}$
	ategory ba	Final Categ Summary of basic is Wetland Unit has Specias Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon	ory (choo	se the "highest" category from a n about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats	above")		
	tategory ba	Final Categ Summary of basic is Wetland Unit has Specias Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest Coastal Lagoon	ory (choo	n about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats Freshwater Tidal	above")		

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

We	tland name or number WMT5
	Classification of Vegetated Wetlands for Western Washington
	he hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with ltiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

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

NO – go to 6

YES – The wetland class is Riverine

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

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

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

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

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

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

The overbank flooding occurs at least once every two years.

Does the entire wetland meet all of the following criteria?

river.

Wetland name or number	WMT5	
------------------------	------	--

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score
D 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.38)
DI	D 1.1 Characteristics of surface water flows out of the wetland:	
	• Unit is a depression with no surface water leaving it (no outlet)points = 3	Figure
	 Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1 	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface	
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions)	
	YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/2 of area	5
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years.	
	 Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	0
	Map of Hydroperiods	
	Total for D 1 Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit	
	may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging	
	X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	<u>2</u>
	Other YES multiplier is 2 NO multiplier is 1	-
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	14
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	17
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	D 3.1 Characteristics of surface water flows out of the wetland unit	(1 /
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outletpoints = 7	
	 The wetland is a "headwater" wetland	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	• Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. 	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	5
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	5
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	5

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	7

Wetland name or number ______WMT5

	questions apply to wetlands of all HGM classes.	Points (only 1 score			
I	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	per box)			
Does the wetland have the <u>potential</u> to provide habitat for many species?					
I	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if:	Figure			
	X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 3 structures points = 0	2			
I	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more 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	Figure			
	Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1			
I	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure			
	Use map of Cowardin classes. [riparian braided channels]	1			
I	High = 3 points H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m)	0			
	 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 turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants 	Ü			

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or numberWMT5	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of a spen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age, (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include	0
addressed in question H 2.4) H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84 • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	4
TOTAL for H 1 from page 8	5

Add the points for H 1 and H 2; then record the result on p. 1

Comments:

Total Score for Habitat Functions

Wetland name or number	WMT5
------------------------	------

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		nd Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate a are met.	
0.01		ine wetlands? (see p.86)	
SC1	Estuar	Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$\mathbf{YES} = \mathbf{Go} \text{ to } \mathbf{SC} 1.1 \qquad \qquad \mathbf{NO} \underline{\mathbf{X}}$	
	SC 1.1	Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	2 2
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	Cat. II
		with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	<u>Natura</u>	Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	CC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	SC 2.1	question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	SC 2.2	or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1
SC3	Bogs (s	see p. 87)	
SC3	<u> 2052</u> (1	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating NO = go to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	0.4.
		YES = Category I NO = Is not a bog for purpose of rating	Cat. I
		TES - Category 1 MO = 18 flot a bog for purpose of rating	

Wetland name or number	WMT5	
------------------------	------	--

	Forested Wetlands (: 00)	
SC4	Forested Wetlands (see p. 90) Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	YES = Category I $NO = X$ not a forested wetland with special characteristics	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
BCU	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	Ocean Shores-Copalis – lands west of SR 115 and SR 109 SC 6.1. Is the wetland one agree or larger, or in it in a massic of wetlands that is one agree or larger?	
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?	
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	a
	YES = Category III	Cat. III
	Category of wetland based on Special Characteristics	
▼	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.	37.4
1	If you answered NO for all types enter "Not Applicable" on p. 1	NA

Wetland name or number	WMT6	
------------------------	------	--

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

ated by:_	M Maynard	Trained by l	Ecology? Yes_X_ No	_ Date of	training	: 04/0	6
EC:	29 TWNSHP: 27N	RNGE:_	4E Is S/T/R in Ap	pendix D	? Yes	N	No <u>X</u>
	Map of wetland unit: 1	Figure	Estimated size				
		SUMMA	RY OF RATING				
ategory 1	based on FUNCTIONS provided by	y wetland:	I II	III_	X	IV	
	Category I = Score > 70		Score for Water Quality Fun	ctions		14	
	Category II = Score 51 - 69		Score for Hydrologic Fun			7	_
	Category III = Score 30 – 50		Score for Habitat Fun			9	
					-		_
	Category IV = Score < 30		TOTAL Score for Fun	ctions		30	
	Category IV = Score < 30		TOTAL Score for Full	Ctions		30	
ategory b	pased on SPECIAL CHARACTERIS	STCS of Wet			Does not		X_
ategory b	pased on SPECIAL CHARACTERIS		land I II	I	Does not		<u>X</u>
ategory b	pased on SPECIAL CHARACTERIS Final Catego	ory (choose	e the "highest" category from a	I	Does not	apply	<u>x</u>
ategory t	pased on SPECIAL CHARACTERIS Final Category Summary of basic in	Ory (choose	land IIIe the "highest" category from a about the wetland unit.	I	Does not	apply	
ategory t	pased on SPECIAL CHARACTERIS Final Categor Summary of basic in Wetland Unit has Special	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class	I	Does not	apply	
ategory b	Summary of basic in Wetland Unit has Special Characteristics	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating	I	Does not	apply	x
ategory b	Summary of basic in Wetland Unit has Special Characteristics Estuarine	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class	Ibove")	Does not	apply	<u>x</u>
ategory b	Summary of basic in Wetland Unit has Special Characteristics	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional	Ibove")	Does not	apply	<u>x</u>
ategory b	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	Ory (choose	about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	Ibove")	Does not	apply	<u>x</u>
ategory b	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	Ibove")	Does not	apply	<u>x</u>
ategory b	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	Ibove")	Does not	apply	<u>x</u>
ategory b	Summary of basic in Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	Ory (choose	the "highest" category from a about the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats	Ibove")	Does not	apply	

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number	WMT6

Classification of Vegetated Wetlands for Western Washington

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

1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
	NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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 ?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 YES – The wetland class is Slope
5	Does the entire wetland meet all of the following criteria?
٥.	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.
	NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
	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 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 your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less

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

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

than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

Wetland name or number	WMT6	
------------------------	------	--

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	g
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area. Wetland has persistent, ungrazed vegetation > = 1/2 of area. points = 3 	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	
	• Area seasonally ponded is < 1/4 total area of wetland	0
	Total for D 1 Map of Hydroperiods Add the points in the boxes above	<u>-</u>
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
ט ב	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 11)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	Multiplier
	Wetland is fed by groundwater high in phosphorus or nitrogen	2
	Other	
•	YES multiplier is 2 NO multiplier is 1	14
_	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	14
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
<i>D</i> 0	D 3.1 Characteristics of surface water flows out of the wetland unit	1 /
	• Unit is a depression with no surface water leaving it (no outlet)	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	
	 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 	
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	 Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	• Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	
	basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unitpoints = 5	
	• The area of the basin is 10 to 100 times the area of the unit	5
	 The area of the basin is more than 100 times the area of the unit	
	Total for D 3 Add the points in the boxes above	
	rank in points in the cones work	

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> Wetland is in a headwater of a river or stream that has flooding problems.	
	 Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other 	Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then add score to table on p. 1	7

Wetland name or number _____WMT6__

Ines	se questions apply to wetlands of all HGM classes.	Points (only 1 score
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover)	Figure
	If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	1
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more 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	Figure
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes	Figure
	or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	
	High = 3 points [riparian braided channels]	0
	H 1.5 Special Habitat Features (see p. 77): Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) X Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)	. 2
	ποι γει ιμπεα χτε γιστοπιή	1
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants NOTE: The 20% stated in early printings of the manual on page 78 is an error.	

H 2	1 2 Does the wetland have the <u>opportunity</u> to provide habitat for many species?		(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number	WMT6
------------------------	------

TOTAL for H 1 from page 8	
TOTAL V. C. VI. I. C. O.	5
H 2 TOTAL Score – opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4	44
• There are no wetlands within 1/2 mile	 -
• There is at least 1 wetland within 1/2 mile	
within 1/2 mile	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
disturbedpoints = 3	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are 	
addressed in question H 2.4)	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points	
end, and > 6 m (20 ft) long. If we then does 3 on more priority behitter = 4 points	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft. Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of baselt	
rock, ice, or other geological formations and is large enough to contain a human.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
WDFW report: pp. 167-169 and glossary in Appendix A).	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in	
provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
a wet prairie (full descriptions in WDFW PHS report p. 161).	0
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre) Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
NOTE: the connections do not have to be relatively undisturbed.	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
http://wdfw.wa.gov/hab/phslist.htm)	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	

Wetland name or number	WMT6	
wenand name of number	VV IVI I ()	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met				
	criteria are met.				
SC1	Estuarine wetlands? (see p.86) Does the wetland writ meet the following criteria for Fetverine wetlands?				
		Does the wetland unit meet the following criteria for Estuarine wetlands?			
		The dominant water regime is tidal,			
		Vegetated, and			
		With a salinity greater than 0.5 ppt.			
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$			
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1		
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?			
		YES = Category I NO = Category II	Cat. I		
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has			
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II		
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating		
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II		
SC2	<u>Natura</u>	l Heritage Wetlands (see p. 87)			
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as			
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or			
		Sensitive plant species.			
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This			
		question is used to screen out most sites before you need to contact WNHP/DNR.)			
		S/T/R information from Appendix D or accessed from WNHP/DNR web site			
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO			
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened			
	50 2.2	or endangered plant species?	Cat I		
		YES = Category 1 NO \underline{X} not a Heritage Wetland	Cat 1		
	Dogg (s	· ·			
SC3	bogs (S	nee p. 87)			
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use			
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the			
		wetland based on its function.			
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2			
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over			
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or			
		pond? YES = go to question 3 NO = is not a bog for purpose of rating			
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,			
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more			
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
		YES = Is a bog for purpose of rating $NO = go$ to question 4			
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that			
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is			
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.			
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western			
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of			
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -		
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I		
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$			

SC4	Forested Wetlands (see p. 90)				
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish				
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland				
	based on its function.				
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a				
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)				
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or				
	more).				
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees				
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW				
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.				
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old				
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than				
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	G . T			
	less than that found in old-growth.	Cat. I			
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \underline{X} \text{ not a forested wetland with special characteristics}$				
SC5	Wetlands in Coastal Lagoons (see p. 91)				
	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 surface water that is saline or brackish (> 0.5				
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the				
	bottom.)				
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).				
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed				
	or un-mowed grassland.	Cat. I			
	The wetland is larger than 1/10 acre (4350 square ft.)	0 2			
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I} \qquad \qquad \mathbf{NO} = \mathbf{Category} \ \mathbf{II}$	Cat. II			
SC6	Interdunal Wetlands (see p. 93)				
500	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or				
	WBUO)?				
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating				
	If you answer yes you will still need to rate the wetland based on its functions.				
	In practical terms that means the following geographic areas:				
	Long Beach Peninsula lands west of SR 103				
	• Grayland-Westport lands west of SR 105				
	Ocean Shores-Copalis – lands west of SR 115 and SR 109				
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?				
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II			
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?				
	YES = Category III	Cat. III			
	Category of wetland based on Special Characteristics				
•	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.				
	If you answered NO for all types enter "Not Applicable" on p. 1	NA			

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): WMT7			Date of si	te visit: 4/3/12
Rated by: M Maynard	Trained by I	Ecology? Yes <u>X</u> No	Date of tra	aining: 04/06
SEC: 28 TWNSHP: 27N	RNGE:_	4E Is S/T/R in	Appendix D?	Yes NoX_
Map of wetland unit:	Figure	Estimated siz	e	
	SUMMA	RY OF RATING		
Category based on FUNCTIONS provided b	y wetland:	I II	III	IV
Category I = Score > 70		Score for Water Quality I	Functions	12
Category II = Score 51 - 69		Score for Hydrologic I	Functions	7
Category III = Score 30 – 50		Score for Habitat I	Functions	8
Category IV = Score < 30		TOTAL Score for I	unctions	27
Category based on SPECIAL CHARACTERIS	STCS of Wet	land I II_	Do	es not apply X
Final Categ	ory (choose	the "highest" category fro	m above")	IV
Summary of basic i	information	about the wetland unit.		
Wetland Unit has Specia	ıl	Wetland HGM Class	3	
Characteristics		used for Rating	N/	
Estuarine Natural Heritage Wetland		Depressional Riverine	X	
Bog		Lake-fringe		
Mature Forest		Slope Slope		
Old Growth Forest		Flats		
Coastal Lagoon		Freshwater Tidal		
Interdunal		21001111001		
None of the above	X	Check if unit has multiple HGM classes present		
Does the wetland being rated meet any of the				

need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number	WMT7
------------------------	------

Classification of Vegetated Wetlands for Western Washington

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

1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
	NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
	The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
_	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria? The unit is in a valley on stream shornel where it gets in undeted by everybook fleeding from that stream on
	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding
	NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
	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 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 your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.
	, <i>j</i>

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

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

Wetland name or number	WMT7	
------------------------	------	--

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)points = 3 	Figure
	• Unit has an intermittently flowing, OR highly constricted, permanently flowing outlet points = 2	g
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 1	
	• Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing") Provide photo or drawing	2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class):	Figure
	 Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	• Wetland has persistent, ungrazed vegetation > = 1/10 of area	
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	5
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at	
	least 2 months, but dries out sometime during the year. Do not count the area that is permanently	Figure
	ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	
	• Area seasonally ponded is > 1/4 total area of wetland	0
	• Area seasonally ponded is < 1/4 total area of wetland	o l
	Total for D 1 Map of Hydroperiods Add the points in the boxes above	
D 2	Does the wetland have the opportunity to improve water quality?	(see p. 44)
D Z	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into	(see p. 44)
	the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient	
	from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.	
	Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland	
	A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed	
	fields, roads, or clear-cut logging	Multiplier
	 X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen 	<u>2</u>
	Other	
•	YES multiplier is 2 NO multiplier is 1	1.1
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then <i>add score to table on p. 1</i> HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	14
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
ט ט	D 3.1 Characteristics of surface water flows out of the wetland unit	(see p. 10)
	• Unit is a depression with no surface water leaving it (no outlet)points = 4	
	 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface 	2
	outflow and no obvious natural outlet and/or outlet is a man-made ditchpoints = 1	2
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	• Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For	
	units with no outlet measure from the surface of permanent water or deepest part (if dry).	
	• Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	
	 The wetland is a "headwater" wetland	0
	• Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet	
	 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft	
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream	
	basin contributing surface water to the wetland to the area of the wetland unit itself.	
	 The area of the basin is less than 10 times the area of unit	5
	• The area of the basin is more than 100 times the area of the unit	
	• Entire unit is in the FLATS class points = 5	
	Total for D 3 Add the points in the boxes above	<u> </u>

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	 Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other 	Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	7

Wetland name or number _____WMT7____

	se questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 scor per box)
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-	Figure
	cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	1
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 0 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure
	Freshwater tidal wetland = 2 points Map of hydroperiods	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (<i>see p. 76</i>): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	
	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or	Figure
	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes [riparian braided channels]	
	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes	0

Wetland name or number	WMT7	
------------------------	------	--

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number	: <u>WMT7</u>
------------------------	---------------

 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	4 4
within 1/2 mile	
	
within 1/2 mile	
within 1/2 milepoints = 3	
*	
disturbed	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
addressed in question H 2.4)	
If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
If wetland has 2 priority habitats = 3 points	
If wetland has 3 or more priority habitats = 4 points	
end, and > 6 m (20 ft) long.	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
rock, ice, or other geological formations and is large enough to contain a human.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
provide functional life history requirements for instream fish and wildlife resources.	
Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
a wet prairie (full descriptions in WDFW PHS report p. 161).	0
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	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre) Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
NOTE: the connections do not have to be relatively undisturbed.	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
http://wdfw.wa.gov/hab/phslist.htm)	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	

Wetland name or number	WMT7	
welland hame of humber	VV IVI I /	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	wetiand Type - Check off any criteria that apply to the wetiana. Circle the Category when the appropriate		
	criteria are met.		
SC1	Estuar	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		$YES = Category I \qquad NO = Category II$	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Dual Rating
		or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	Natura	l Heritage Wetlands (see p. 87)	
SCZ	1141414	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (<i>This</i>	
	SC 2.1	question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
		YES = Category 1 NO X not a Heritage Wetland	
SC3	Bogs (s	ee p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover ($> 30\%$ coverage of the total shrub/herbaceous cover)?	Cot I
		YES = Category I NO = Is not a bog for purpose of rating	Cat. I
		TES - Category I	

SC4	Forested Wetlands (see p. 90)					
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old tre					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DF					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I				
	YES = Category I $NO = X$ not a forested wetland with special characteristics	3400 2				
SC5	Wetlands in Coastal Lagoons (see p. 91)					
SC3	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 surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO X 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					
	less than 20% cover of invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. 1				
	YES = Category I NO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)	0400 11				
SCO	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	• Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	Ocean Shores-Copalis – lands west of SR 115 and SR 109 CC (1 J. d.					
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?					
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{II} \qquad \qquad \mathbf{NO} = \mathbf{go} \ \mathbf{to} \ \mathbf{SC} \ 6.2$	Cat. II				
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?	a				
	YES = Category III	Cat. III				
	Category of wetland based on Special Characteristics					
◆	Choose the "highest" rating if wetland falls into several categories, and record on p. 1.					
	If you answered NO for all types enter "Not Applicable" on p. 1	NA				

Wetland name or number	WMT8
------------------------	------

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

ited by:	M Maynard Tra	ained by Ec	cology? Yes <u>X</u> No	Date of tra	aining: 04/06	5
EC:2	28 TWNSHP: 27N	RNGE:	4E Is S/T/R in App	pendix D? Y	Yes N	lo <u>Σ</u>
	Map of wetland unit: Fig	ure	Estimated size			
	9	SUMMAR ¹	Y OF RATING			
ategory ba	sed on FUNCTIONS provided by w			III	IV	X
	Category I = Score > 70		Score for Water Quality Fund	ctions	4	
	Category II = Score 51 - 69		Score for Hydrologic Fund	ctions	3	
	Category III = Score 30 – 50		Score for Habitat Fund	ctions	8	
1	Ų J			1_		
	Category IV = Score < 30		TOTAL Score for Fund	ctions	15	
	Category IV = Score < 30 sed on SPECIAL CHARACTERISTO	CS of Wetla		Ļ		$\left[\begin{array}{c} \\ \\ \end{array}\right]_{X}$
	sed on SPECIAL CHARACTERISTO		nd I II	Doe		$\frac{1}{X}$
	sed on SPECIAL CHARACTERISTO Final Category	y (choose t	nd I II The "highest" category from a	Doe	es not apply	X
	sed on SPECIAL CHARACTERISTO	y (choose t	nd I II The "highest" category from a	Doe	es not apply	<u>x</u>
	sed on SPECIAL CHARACTERISTO Final Category Summary of basic info Wetland Unit has Special Characteristics	y (choose to	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating	Doe	es not apply	<u>x</u>
	Sed on SPECIAL CHARACTERISTO Final Category Summary of basic info Wetland Unit has Special Characteristics Estuarine	y (choose t	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional	Doe	es not apply	<u>x</u>
	Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland	y (choose t	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional Riverine	Doe	es not apply	\(\frac{1}{x} \)
	Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog	y (choose t	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe	Doe	es not apply] x
	Final Category Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	y (choose to	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	Doe	es not apply	\x_
	Final Category Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest Old Growth Forest	y (choose to	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope Flats	Doe	es not apply] x
	Final Category Summary of basic info Wetland Unit has Special Characteristics Estuarine Natural Heritage Wetland Bog Mature Forest	y (choose to	the "highest" category from a bout the wetland unit. Wetland HGM Class used for Rating Depressional Riverine Lake-fringe Slope	Doe	es not apply] x

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

	Wetland name or number	WMT8
--	------------------------	------

Classification of Vegetated Wetlands for Western Washington

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

1.	Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe
	If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?
	YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)
	If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it
	is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt
	Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and
	this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please
	note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
2.	The entire wetland unit is flat and precipitation is 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 meet both of the following criteria?
٥.	The vegetated part of the wetland is on the shores of a body of permanent open water (without any
	vegetation on the surface) where at least 20 acres (8ha) in size;
	At least 30% of the open water area is deeper than 6.6 (2 m)?
	NO – go to 4 YES – The wetland class is Lake-fringe (Lacustrine Fringe)
4.	Does the entire wetland 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?
	NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and
	shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).
	NO – go to 5 YES – The wetland class is Slope
5.	Does the entire wetland meet all of the following criteria?
٥.	The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or
	river.
	The overbank flooding occurs at least once every two years.
	NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding
	NO – go to 6 YES – The wetland class is Riverine
6.	Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of
0.	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 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 your wetland. NOTE: Use this table only if the class that is recommended in
	the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less
	than 10% of the unit, classify the wetland using the class that represents more than 90% of the total area.

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

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

Wetland name or number	WMT8	
------------------------	------	--

S	Slope Wetlands WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	Points (only 1 score
S 1	Does the wetland have the <u>potential</u> to improve water quality?	per box) (see p.64)
	S 1.1 Characteristics of average slope of unit: • Slope is 1% or less (a 1% slope has a 1 ft. vertical drop in elevation for every 100 ft. horizontal distance) points = 3 • Slope is 1% - 2%	1
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay, organic (<i>Use NRCS definitions</i>). YES = 3 points NO = 0 points	0
	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. • Dense, uncut, herbaceous vegetation > 90% of the wetland area	Figure
	 Dense, uncut, herbaceous vegetation > 1/4 of area	1
	Total for S 1 Add the points in the boxes above	2
S 2	Does the wetland have the opportunity to improve water quality?	(see p. 67)
	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields, logging, or orchards within 150 ft. of wetland	Multiplier
	Tilled fields, logging, or orchards within 150 ft. of wetland X Residential, urban areas, or golf courses are within 150 ft. upslope of wetland Other	<u>2</u>
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1	4
0.2	HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion. Does the watland have the natural to reduce flooding and stream erosion?	(aaa n 69)
83	Does the wetland have the potential to reduce flooding and stream erosion? S 3.1 Characteristics of vegetation 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 > 1/8in), or dense enough to remain erect during surface flows). • Dense, uncut, rigid vegetation covers > 90% of the area of the wetland points = 6 • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 • Dense, uncut, rigid vegetation > 1/4 area points = 1 • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0	(see p.68)
	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows. The slope has small surface depressions that can retain water over at least 10% of its area. YES = 2 points NO = 0 points	2
	Add the points in the boxes above	3
S 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion? Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? <i>Note which of the following conditions apply</i> . Wetland has surface runoff that drains to a river or stream that has flooding problems	(see p. 70) Multiplier
	Other (Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam) YES multiplier is 2 NO multiplier is 1 TOTAL – Hydrologic Functions Multiply the score from S3 by S4: then add score to table on n. 1	1

	se questions apply to wetlands of all			Points (only 1 scor
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		per box)	
H 1				
	1/4 acre or more than 10% Aquatic Bed Emergent plants Scrub/shrub (areas where	on classes present (as defined by Co of the area if unit is smaller than there shrubs have > 30% cover) the trees have > 30% cover)	Cowardin) – Size threshold for each class is 2.5 acres.	Figure
	cover) that each cover 20% Add the number of vegetation 4 structures of 2 structures	ass check if: s 3 out of 5 strata (canopy, sub-can within the forested polygon. for types that qualify. If you have: or more points = 4 points = 1	Map of Cowardin vegetation classes 3 structures points = 2 1 structure points = 0	1
	cover more than 10% of the Permanently flooded X Seasonally flooded or Occasionally flooded X Saturated only Permanently flowing Seasonally flowing st Lake-fringe wetland	e wetland or 1/4 acre to count (see or inundated r inundated	in the wetland. The water regime has to text for descriptions of hydroperiods). 4 or more types present points = 3 3 or more types present points = 2 2 types present points = 1 1 type present points = 0 the wetland d Map of hydroperiods	Figure
	H 1.3 Richness of Plant Species (Count the number of plant species can be combined to	see p. 75): species in the wetland that cover a meet the size threshold) se species. Do not include Eurasia le. If you counted:	t least 10 ft ² (different patches of the same n Milfoil, reed canarygrass, purple > 19 species	1
		pelow whether interspersion between areas (can include open water or much	Cowardin vegetation (described in H1.1), or flats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure
	Decided from the diagrams be the classes and unvegetated at None = 0 points Low = 1 point	pelow whether interspersion between areas (can include open water or much moderate = 2 points [riparian braided channel open water or much moderate = 2 points]	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	
	Decided from the diagrams be the classes and unvegetated at the classes are purposed at the classes are purposed at the classes and unvegetated at the classes are at the classes and unvegetated at the classes are at the classes and unvegetated at the classes are points at the classes and unvegetated at the classes and unvegetated at the classes are at the classes and unvegetated at the classes are at the classes and unvegetated at the classes are a	Moderate = 2 points Iriparian braided channel points ee p. 77): that are present in the wetland. The points within the wetland (> 4 in leter at the bottom > 4 inches) in the present for at least 6.6 ft. (2m) and/or from material that might be used by the prown)	Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes. "It is always the number of points of the number of checks is the number of points of the wetland or overhanging vegetation extends at least ith the unit, for at least 33 ft. (10m) y beaver or muskrat for denning the present (cut shrubs or trees that have or woody branches are present in areas that egg-laying by amphibians) in each stratum of plants	0

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	1
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or number	WMT8
------------------------	------

 The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	4 4
within 1/2 mile	
	
within 1/2 mile	
within 1/2 milepoints = 3	
*	
disturbed	
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	3
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
addressed in question H 2.4)	
If wetland has 1 priority habitat = 1 point No habitats = 0 points Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
If wetland has 2 priority habitats = 3 points	
If wetland has 3 or more priority habitats = 4 points	
end, and > 6 m (20 ft) long.	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
rock, ice, or other geological formations and is large enough to contain a human.	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore,	
provide functional life history requirements for instream fish and wildlife resources.	
Instream: The combination of physical, biological, and chemical processes and conditions that interact to	
a wet prairie (full descriptions in WDFW PHS report p. 161).	0
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	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in)	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre) Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
NOTE: the connections do not have to be relatively undisturbed.	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
http://wdfw.wa.gov/hab/phslist.htm)	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	

Wetland name or number	WMT8	
welland hame of humber	VV IVI I O	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met.		
SC1	<u>Estuar</u>	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp., are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland	Dual Rating
		The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	I/II
SC2	<u>Natura</u>	ll Heritage Wetlands (see p. 87)	
		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
		or endangered plant species?	Cat I
		YES = Category 1 NO \underline{X} not a Heritage Wetland	O 1
g g g	Rogs (s	ree p. 87)	
SC3	Dogs (S	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
		compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating $NO = go$ to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	~ -
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

SC4	Forested Wetlands (see p. 90)		
	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish		
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland		
	based on its function.		
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a		
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)		
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or		
	more).		
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees		
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW		
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.		
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old		
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I	
	$\mathbf{YES} = \text{Category I} \qquad \qquad \mathbf{NO} = \underline{X} \text{ not a forested wetland with special characteristics}$		
SC5	Wetlands in Coastal Lagoons (see p. 91)		
	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 surface water that is saline or brackish (> 0.5		
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the		
	bottom.)		
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).		
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed		
	or un-mowed grassland.	Cat. I	
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I	
	YES = Category I NO = Category II	Cat. II	
SC6	Interdunal Wetlands (see p. 93)		
300	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or		
	WBUO)?		
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating		
	If you answer yes you will still need to rate the wetland based on its functions.		
	In practical terms that means the following geographic areas:		
	• Long Beach Peninsula lands west of SR 103		
	• Grayland-Westport lands west of SR 105		
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 		
	SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?		
	YES = Category II NO = go to SC 6.2	Cat. II	
	SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?		
	YES = Category III	Cat. III	
	Category of wetland based on Special Characteristics		
•			
	If you answered NO for all types enter "Not Applicable" on p. 1	NA	
•	Category of wetland based on Special Characteristics Choose the "highest" rating if wetland falls into several categories, and record on p. 1.		

Wetland name or number	WLY3	

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	etland (if	known):	WI	LY3			Date of	site visi	it: <u> 4</u>	/5/12
Rated by:_	ММ	aynard		Trained by	Ecology?	Yes_X_ No	Date of	training	g: <u>04/0</u>)6
SEC:	21	TWNSHP:	27N	RNGE:_	4E	Is S/T/R in A	Appendix D	Yes_	1	No <u>X</u>
		Map of wetlar	nd unit: I	Figure		_ Estimated size	e			
				SUMMA	RY OF RA	ATING				
Category 1	based on l	FUNCTIONS pr	covided by	y wetland:	I	II	III	X	IV	
	Catego	ory I = Score >	70		Score for	· Water Quality F	unctions		18	
	Catego	ry II = Score 51	1 - 69		Score	for Hydrologic F	unctions		8	
	Categor	y III = Score 30	0 – 50		Sc	core for Habitat F	unctions		9	
	Categor	y IV = Score <	30		TC	TAL Score for F	unctions		35	
otogory b	basad on S	DECIAL CHAD	ACTEDIS	TCS of Wo	tland I	TT	T	loog not	tannly	v
Category t	based on S				_	II	_	oes not		<u> </u>
Category t	based on S				_	est" category from	_	Does not	t apply	X
Category l		Final Summary	Catego	Ory (choos	e the "high about the	est" category from	m above")	Does not		<u>X</u>
Category t		Final Summary	Catego of basic in as Special	Ory (choos	e the "high about the Wetl	est" category from wetland unit.	m above")	Does not		<u>x</u>
Category I		Final Summary Wetland Unit ha Characteri	Catego of basic in as Special	Ory (choos	e the "high about the Wetl	est" category from wetland unit. and HGM Class and for Rating	m above")	Does not		$\frac{\mathbf{x}}{\mathbf{x}}$
Category I	E	Final Summary	Categor of basic in as Special istics	Ory (choos	e the "high about the Wetl	est" category from wetland unit. and HGM Class ed for Rating ional	m above")	Does not		<u> </u>
Category I	Es N B	Final Summary Wetland Unit ha Characteri stuarine atural Heritage	Categor of basic in as Special istics	Ory (choos	about the Wetl us Depressi	est" category from wetland unit. and HGM Class sed for Rating ional	m above")	Does not		X
Category I	Es N B	Final Summary Wetland Unit ha Characteri stuarine atural Heritage og Tature Forest	Categor of basic in as Special istics Wetland	Ory (choos	e the "high about the Wetl us Depressi Riverine	est" category from wetland unit. and HGM Class sed for Rating ional	m above")	Does not		<u>x</u>
Category t	Es N B M	Final Summary Wetland Unit ha Characteri stuarine atural Heritage og Lature Forest ld Growth Fores	Categor of basic in as Special istics Wetland	Ory (choos	e the "high about the Weth us Depressi Riverine Lake-fri Slope Flats	est" category from wetland unit. land HGM Class sed for Rating ional	m above")	Does not		X
Category t	Es N B M O	Final Summary Wetland Unit ha Characteri stuarine atural Heritage og Lature Forest ld Growth Fores oastal Lagoon	Categor of basic in as Special istics Wetland	Ory (choos	e the "high about the Weth us Depressi Riverine Lake-fri Slope Flats	est" category from wetland unit. and HGM Class sed for Rating ional	m above")	Does not		<u>x</u>
Category t	Es N B M O	Final Summary Wetland Unit ha Characteri stuarine atural Heritage og Lature Forest ld Growth Fores	Categor of basic in as Special istics Wetland	Ory (choos	about the Wetl us Depressi Riverine Lake-fri Slope Flats Freshwa	est" category from wetland unit. land HGM Class sed for Rating ional	m above")	Does not		<u>x</u>

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WLY3
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland 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? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO - go to 5 YES - The wetland class is Slope

The overbank flooding occurs at least once every two years.

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

NO – go to 6

YES – The wetland class is Riverine

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

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

NO – go to 7 **YES** – The wetland class is **Depressional**7. Is the entire wetland 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

Does the entire wetland meet all of the following criteria?

river.

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

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

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

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland: • Unit is a depression with no surface water leaving it (no outlet)	Figure 2
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	0
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area points = 5 • Wetland has persistent, ungrazed vegetation > = 1/2 of area points = 3 • Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1	Figure
	• Wetland has persistent, ungrazed vegetation < 1/10 of area	Figure
	 ponded. Estimate area as the average condition 5 out of 10 years. Area seasonally ponded is > 1/2 total area of wetland	4
	Total for D 1 Add the points in the boxes above	9
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland	(see p. 44)
	Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1	Multiplier 2 ——
•	TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	18
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	2
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	3
	Total for D 3 Add the points in the boxes above	8

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other	
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	8

Wetland name or number ______WLY3_____

These ques	tions apply to wetlands of all HGM classes.	Points
HAB	ITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 scor per box)
1 Does	the wetland have the <u>potential</u> to provide habitat for many species?	
H 1.1	Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) Forested (areas where trees have > 30% cover)	Figure
	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. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures points = 1 1 structure points = 0	0
Н 1.2	Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types present points = 2 X Occasionally flooded or inundated 2 types present points = 1 X 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	Figure
	Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft ² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
H 1.4	Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is	Figure
	Use map of Cowardin classes. [riparian braided channels]	1
Н 1.5	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)	1
	At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) X Invasive plants cover less than 25% of the wetland area in each stratum of plants	

Wetland name or number	WLY3
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Wes = 1 point NO = 0 points	0

Wetland name or number <u>WLY3</u>	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.us.gov/hab/phslist.htm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include	0
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) • There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 • The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 mile	3
• There is at least 1 wetland within 1/2 mile	

Total Score for Habitat Functions

H 2 TOTAL Score – opportunity for providing habitat

5

Add the scores from H2.1, H2.2, H2.3, H2.4

Add the points for H 1 and H 2; then record the result on p. 1

TOTAL for H 1 from page 8

Wetland name or number	WLY3
------------------------	------

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

		na Type – Check off any criteria mat apply to the wettana. Circle the Category when the appropriate	
		are met.	
SC1	<u>Estuar</u>	ine wetlands? (see p.86)	
		Does the wetland unit meet the following criteria for Estuarine wetlands?	
		The dominant water regime is tidal,	
		Vegetated, and	
		With a salinity greater than 0.5 ppt.	
		$YES = Go \text{ to } SC 1.1 \qquad \qquad NO \underline{X}$	
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
		YES = Category I NO = Category II	Cat. I
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has	
		less than 10% cover of non-native plant species. If the non-native <i>Spartina</i> spp,. are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	Dual Rating I/II
		or contiguous freshwater wetlands.	
SC2	Natura	l Heritage Wetlands (see p. 87)	
502		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
		Sensitive plant species.	
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
		question is used to screen out most sites before you need to contact WNHP/DNR.)	
		S/T/R information from Appendix D or accessed from WNHP/DNR web site	
		YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	SC 2.2	or endangered plant species?	C-4 T
			Cat I
		$\mathbf{YES} = \mathbf{Category 1} \qquad \qquad \mathbf{NO} \qquad \underline{\mathbf{X}} \text{not a Heritage Wetland}$	
SC3	Bogs (S	see p. 87)	
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
		wetland based on its function.	
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to	
		identify organic soils)? YES = go to question 3 NO = go to question 2	
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
		pond? YES = go to question 3 NO = is not a bog for purpose of rating	
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
		YES = Is a bog for purpose of rating NO = go to question 4	
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
		the species (or combination of species) on the bog species plant list in Table 3 as a significant	
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
		YES = Category I NO = Is not a bog for purpose of rating	Cat. 1

Wetl	land name or number WLY3	
CC4	Forested Wetlands (see p. 90)	
SC4	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); crown cover may be less than	
	100%; decay, decadence, numbers of snags, and quantity of large downed material is generally	G . I
	less than that found in old-growth.	Cat. I
	$\mathbf{YES} = \text{Category I} \qquad \mathbf{NO} = \underline{X} \text{ not a forested wetland with special characteristics}$	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	Cat. I
	The wetland is larger than 1/10 acre (4350 square ft.)	
	YES = Category I NO = Category II	Cat. II
SC6	Interdunal Wetlands (see p. 93)	
SCU	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

NO = go to SC 6.2

YES = Category II

YES = Category III

If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

Cat. II

Cat. III

NA

Wetland name or number	WLY4	
Wenand name of number	WLIT	

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

tuille of W	retland (if known):	WLY4		Date of	f site visit: $\frac{4/9/1}{}$	2
Rated by:_	M Maynard	Trained b	y Ecology? Yes <u>X</u> No	Date of	f training: <u>04/06</u>	
EC:	TWNSHP:	27N RNGE	:4E Is S/T/R	in Appendix D	? Yes No_	Х
	Map of wetland	d unit: Figure	Estimated	size		
		SUMM	IARY OF RATING			
Category I	based on FUNCTIONS pro	ovided by wetland	: I II	<u>x </u>	IV	
!	Category I = Score > 7	70	Score for Water Quality	ty Functions	26	
ļ	Category II = Score 51		Score for Hydrolog	•	20	
	Category III = Score 30		Score for Habita		21	
ļ	Secretary III Secretary	30	Score for Hubble	at I anotions	21	
Í	Catalogue IV. Carrier and	,,	TOTAL C C		67	
ļ	Category IV = Score < 3	30	TOTAL Score for	or Functions	67	
Category b	Category IV = Score < 3					X
Category b	pased on SPECIAL CHARA		etland I l	п 1		X
Category b	pased on SPECIAL CHARA Final (CTERISTCS of W	vetland I lose the "highest" category	from above")	Does not apply	X
Category b	pased on SPECIAL CHARA Final (CTERISTCS of W Category (choof f basic information	Vetland I I Dose the "highest" category on about the wetland unit	from above")	Does not apply	X
Category b	pased on SPECIAL CHARA Final (Summary of Wetland Unit has	CTERISTCS of W Category (choof f basic informations Special	ose the "highest" category on about the wetland unit Wetland HGM C	from above")	Does not apply	X
ategory b	Summary of Wetland Unit has Characteris	CTERISTCS of W Category (choof f basic informations Special	on about the wetland unit Wetland HGM C used for Rating	from above") lass	Does not apply	X
Category b	Summary o Wetland Unit has Characteris Estuarine	CTERISTCS of W Category (choose f basic information s Special tics	on about the wetland unit Wetland HGM Cl used for Rating Depressional	from above")	Does not apply	X
Category b	Summary of Wetland Unit has Characterist Estuarine Natural Heritage V	CTERISTCS of W Category (choose f basic information s Special tics	ose the "highest" category on about the wetland unit Wetland HGM C used for Rating Depressional Riverine	from above") lass	Does not apply	X
Category b	Summary of Wetland Unit has Characterist Estuarine Natural Heritage V	CTERISTCS of W Category (choose f basic information s Special tics	ose the "highest" category on about the wetland unit Wetland HGM C used for Rating Depressional Riverine Lake-fringe	from above") lass	Does not apply	X
Category b	Summary of Wetland Unit has Characterist Estuarine Natural Heritage V Bog Mature Forest	CTERISTCS of W Category (choof basic informations Special ties Wetland	ose the "highest" category on about the wetland unit Wetland HGM C used for Rating Depressional Riverine Lake-fringe Slope	from above") lass	Does not apply	X
ategory b	Summary of Wetland Unit has Characteris Estuarine Natural Heritage V Bog Mature Forest Old Growth Forest	CTERISTCS of W Category (choof basic informations Special ties Wetland	ose the "highest" category on about the wetland unit Wetland HGM C used for Rating Depressional Riverine Lake-fringe	from above") lass	Does not apply	X
Category b	Summary of Wetland Unit has Characterist Estuarine Natural Heritage V Bog Mature Forest	CTERISTCS of W Category (choof basic informations Special ties Wetland	ose the "highest" category on about the wetland unit Wetland HGM C used for Rating Depressional Riverine Lake-fringe Slope Flats	from above") lass	Does not apply	X

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or number WLY4
Classification of Vegetated Wetlands for Western Washington
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe it is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).
 The entire wetland unit is flat and precipitation is only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)
 4. Does the entire wetland 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?

The water leaves the wetland without being impounded? NOTE: Surface water does not pond in these types of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep). NO - go to 5**YES** – The wetland class is **Slope** Does the entire wetland meet all of the following criteria? The unit is in a valley or stream channel where it gets inundated by overbank flooding from that stream or river. The overbank flooding occurs at least once every two years. NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.. YES – The wetland class is Riverine NO - go to 6

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

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

Is the entire wetland 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 8YES - The wetland class is Depressional

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

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

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

Wetland name or number WLY4	

D	Depressional and Flat Wetlands	Points
	WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
	 D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet)points = 3 Unit has an intermittently flowing, OR highly constricted, permanently flowing outletpoints = 2 Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing)points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface 	Figure 2
	outflow and no obvious natural outlet and/or outlet is a man-made ditch	
	D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0	4
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure
	Map of Cowardin vegetation classes D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland points = 4 • Area seasonally ponded is > 1/4 total area of wetland points = 0 • Area seasonally ponded is < 1/4 total area of wetland points = 0	Figure
	Map of Hydroperiods	<u> </u>
	Total for D 1 Add the points in the boxes above	13
D 2	Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen	(see p. 44) Multiplier 2
	Other	
	YES multiplier is 2 NO multiplier is 1 TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1	26
	HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.	20
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
	 D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)	2
	D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet	3
	basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is less than 10 times the area of unit	5
	Total for D 3 Add the points in the boxes above	10

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>	
	Wetland is in a headwater of a river or stream that has flooding problems. X Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other Other	Multiplier 2
	YES multiplier is 2 NO multiplier is 1	
•	TOTAL – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	20

Wetland name or number _____WLY4_____

	te questions apply to wetlands of all HGM classes.	Points
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	per box)
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon.	Figure
	2 structures points = 1 1 structure points = 0 $H = 1.2$ Hydroperiods (see p. 73):	Figure
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high". Use map of Cowardin classes.	Figure
	High = 3 points [riparian braided channels]	3
		5

Wetland name or number	WLY4
------------------------	------

H 2	H 2 Does the wetland have the opportunity to provide habitat for many species?			
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	per box) Figure	
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0	

Wetland name or numberWLY4	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report	
http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330 ft. (100m) of the wetland unit?	
NOTE: the connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native	
fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a	
multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown	
cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is	
generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the	
oak component is important (full descriptions in WDFW PHS report p. 158).	
Riparian : The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and	
terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or	
a wet prairie (full descriptions in WDFW PHS report p. 161).	
X 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: pp. 167-169 and glossary in Appendix A).	
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils,	
rock, ice, or other geological formations and is large enough to contain a human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt,	
andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.	
Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics	
to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in	
western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest	
end, and > 6 m (20 ft) long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are	
addressed in question H 2.4)	
H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84)	
• There are at least 3 other wetlands within 1/2 mile, and the connections between them are	
relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating,	
but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5	
• The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe	
wetlands within 1/2 milepoints = 5	
	3
• There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are	
disturbedpoints = 3	
• The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands	
within 1/2 milepoints = 3	
• There is at least 1 wetland within 1/2 milepoints = 2	
• There are no wetlands within 1/2 milepoints = 0	
H 2 TOTAL Score opportunity for providing hobitot. Add the scores from H2 1 H2 2 H2 3 H2 4	

Total Score for Habitat Functions

16

21

 $TOTAL\ for\ H\ 1\ from\ page\ 8$

Add the points for H 1 and H 2; then record the result on p. 1

Wetland name or number	WLY4
------------------------	------

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	Wetland Type – Check off any criteria that apply to the wetland. Circle the Category when the appropriate	
	criteria are met.	_
SC1	Estuarine wetlands? (see p.86)	
	Does the wetland unit meet the following criteria for Estuarine wetlands?	
	The dominant water regime is tidal,	
	Vegetated, and	
	With a salinity greater than 0.5 ppt.	
	$YES = Go \text{ to } SC 1.1 \qquad NO \underline{X}$	
	SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natura	
	Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC	Cat. 1
	332-30-151? YES = Category I $NO = go to SC 1.2$	
	SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?	
	YES = Category I NO = Category II The westland is relatively undisturbed (has no diving displayer filling cultivation grazing and ha	Cat. I
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has then 10% cover of non native plant species. If the non-native Sparting supposes only species	S
	less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II).	Cat. II
	The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh	
	with native species would be a Category 1. Do not, however, exclude the area of Spartina in	
	determining the size threshold of 1 acre.	Dual
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	Rating
	or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	I/II
	or contiguous freshwater wetlands.	
C C A	Natural Heritage Wetlands (see p. 87)	
SC2	Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as	
	either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or	
	Sensitive plant species.	
	SC 2.1 Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This	
	question is used to screen out most sites before you need to contact WNHP/DNR.)	
	S/T/R information from Appendix D or accessed from WNHP/DNR web site	
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO	
	SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened	
	or endangered plant species?	Cat I
	$YES = Category 1 \qquad NO \underline{X} \text{ not a Heritage Wetland}$	
SC3	Bogs (see p. 87)	
bes	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use	
	the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the	
	wetland based on its function.	
	1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that	
	compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key t	o
	identify organic soils)? YES = go to question 3 NO = go to question 2	
	2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over	
	bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or	
	pond? YES = go to question 3 NO = is not a bog for purpose of rating	
	3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,	
	consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more	
	than 30% of the total shrub and herbaceous cover consists of species in Table 3)?	
	YES = Is a bog for purpose of rating NO = go to question 4	
	NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that	
	criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is	
	less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.	
	4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western	. [
	hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of	
	the species (or combination of species) on the bog species plant list in Table 3 as a significant	
	component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I
	$\mathbf{YES} = \mathbf{Category} \ \mathbf{I}$ $\mathbf{NO} = \mathbf{Is} \ \mathbf{not} \ \mathbf{a} \ \mathbf{bog} \ \mathbf{for} \ \mathbf{purpose} \ \mathbf{of} \ \mathbf{rating}$	

Wetl	and name or number WLY4	
SC4	Forested Wetlands (see p. 90)	
SC4	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish	
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland	
	based on its function.	
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a	
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)	
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or	
	more).	
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees	
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW	
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.	
	Mature forests : (west of the Cascade Crest) Stands where the largest trees are $80 - 200$ years old	
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I
	$\mathbf{YES} = \text{Category I} \qquad \qquad \mathbf{NO} = \underline{X} \text{ not a forested wetland with special characteristics}$	
SC5	Wetlands in Coastal Lagoons (see p. 91)	
	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 surface water that is saline or brackish (> 0.5	
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the	
	bottom.)	
	YES = Go to SC 5.1 NO \underline{X} 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 invasive plant species (see list of invasive species on p. 74).	
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed	
	or un-mowed grassland.	C. A. T
	The wetland is larger than 1/10 acre (4350 square ft.)	Cat. I
	YES = Category I NO = Category II	Cat. II
9.00	Interdunal Wetlands (see p. 93)	Cat. 11
SC6	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or	
	WBUO)?	
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating	
	If you answer yes you will still need to rate the wetland based on its functions.	
	In practical terms that means the following geographic areas:	
	• Long Beach Peninsula lands west of SR 103	
	• Grayland-Westport lands west of SR 105	
1	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 	

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

NO = go to SC 6.2

YES = Category II

YES = Category III

If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

Cat. II

Cat. III

NA

Wetland name or number	WLY6	
Wedand name of number	WLIU	

WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 – Updated July 2006 to increase accuracy and reproducibility among users Updated Oct. 2008 with the new WDFW definitions for priority habitats

	etland (if know	vn):	WL	Y6			Date of	site visi	t:4	1/17/12
Rated by:_	M Maynaı	rd	Τ	Trained by	Ecology? Ye	es_X_No	Date of	training	g: <u>04/0</u>	06
SEC:	<u>21</u> T	WNSHP:	27N_	RNGE:	4E	Is S/T/R in A	Appendix D'	Yes_		No <u>X</u>
	Ma	ap of wetlan	nd unit: Fi	igure		Estimated size	e			
				SUMMA	ARY OF RAT	ING				
Category I	pased on FUN	CTIONS pr	ovided by	wetland:	I	II	III	X	IV	
!	Category I	= Score >	70		Score for W	Vater Quality F	unctions		24	
	Category II					r Hydrologic F			7	
	Category III					e for Habitat F			8	
	Category IV	= Score <	30		1017	AL Score for F	unctions		39	
Category b	ased on SPEC	IAL CHARA	ACTERIST	TCS of We	etland I	II	I	oes not	apply_	X
Category b	ased on SPEC					II_	<u> </u>	oes not	apply	<u> </u>
Category b	ased on SPEC	Final	Catego	ry (choos	se the "highest	t" category from	<u> </u>	Does not		x
Category b		Final Summary	Catego	ry (choos	se the "highest	t" category from	m above")	Ooes not		
Category b	Wetl	Final	Catego of basic in	ry (choos	se the "highest a about the we Wetlan	t" category from	m above")	Ooes not		<u>X</u>
Category b	Wetl Estuar	Final Summary of and Unit hat Characteristine	Catego of basic in as Special stics	ry (choos	se the "highest a about the we Wetlan	t" category from etland unit. ad HGM Class I for Rating	m above")	oes not		
Category b	Wetl Estuar	Final Summary of and Unit hat Characteris	Catego of basic in as Special stics	ry (choos	wetlan used Depression Riverine	t" category from etland unit. nd HGM Class of for Rating	m above")	Ooes not		x
Category b	Wetl Estuar Natura Bog	Final Summary of and Unit hat Characteristine al Heritage	Catego of basic in as Special stics	ry (choos	wetlan used Depression Riverine Lake-fring	etland unit. d HGM Class for Rating hal	m above")	Ooes not		
Category b	Estuar Natura Bog Matur	Final Summary of and Unit hat Characteristine all Heritage errors.	Catego of basic in as Special stics Wetland	ry (choos	wetlan used Depression Riverine	etland unit. d HGM Class for Rating hal	m above")	Does not		
Category b	Estuar Natura Bog Matur Old G	Final Summary of and Unit hat Characteristine hal Heritage here Forest rowth Fores	Catego of basic in as Special stics Wetland	ry (choos	wetlan used Depression Riverine Lake-fring Slope Flats	etland unit. ad HGM Class for Rating al	m above")	Does not		
Category b	Estuar Natura Bog Matur Old Go	Final Summary of and Unit hat Characteristine al Heritage errorest rowth Forest Lagoon	Catego of basic in as Special stics Wetland	ry (choos	wetlan used Depression Riverine Lake-fring Slope	etland unit. ad HGM Class for Rating al	m above")	Ooes not		
Category b	Estuar Natura Bog Matur Old G	Final Summary of and Unit hat Characteristine al Heritage errorest rowth Forest Lagoon	Catego of basic in as Special stics Wetland	ry (choos	wetlan used Depression Riverine Lake-fring Slope Flats	etland unit. ad HGM Class for Rating al	m above")	Ooes not		

Does the wetland being rated meet any of the criteria below? If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

	Check List for Wetlands that Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1.	Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)? For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2.	Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species? For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category 1 Natural Heritage Wetlands (see p. 19 of data form).		X
SP3.	Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?		X
SP4.	Does the wetland unit have a local significance in addition to its functions? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

Wetland name or numberWLY6	
Classification of Vegetated Wetlands for Western Washington	
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.	h
1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)? NO – go to 2 YES – the wetland class is Tidal Fringe If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine) If your wetland can be classified as a Freshwater Tidal Fringe use the forms for Riverine wetlands. If it is a Saltwater Tidal Fringe is rated as an Estuarine wetland. Wetlands that were call estuarine in the first and second editions of the rating system are called Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier edition this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. For note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p).	led Salt ons, and
 The entire wetland unit is flat and precipitation is 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. 	er
3. Does the entire wetland meet both of the following criteria? The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) where at least 20 acres (8ha) in size; At least 30% of the open water area is deeper than 6.6 (2 m)? NO - go to 4 YES - The wetland class is Lake-fringe (Lacustrine Fringe)	
4. Does the entire wetland 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. In the flow subsurface, as sheetflow, or in a swale without distinct banks. The water leaves the wetland without being impounded?	It may

flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland without being impounded?

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

NO - go to 5

YES - The wetland class is Slope

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

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

The overbank flooding occurs at least once every two years.

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

NO - go to 6

YES - The wetland class is Riverine

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of

NO – go to 7 **YES** – The wetland class is **Depressional**7. Is the entire wetland 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

No – go to 8 YES – The wetland class is Depressional

the year. This means that any outlet, if present is higher than the interior of the wetland.

wetland may be ditched, but has no obvious natural outlet.

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

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

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

Wetland name or number	WLY6
------------------------	------

Unit has an intermittently flowing. OR highly constricted, permanently flowing outet points = 1 Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch. D 1.2 If Bitch is not permanently flowing reat unit as "intermittently flowing") Provide photo or drawing. D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRC sidentinions) VES points = 4 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 172 of area points = 5 • Wetland has persistent, ungrazed vegetation > = 172 of area points = 3 • Wetland has persistent, ungrazed vegetation > = 171 of area points = 3 • Wetland has persistent, ungrazed vegetation < 1710 of area points = 3 • Wetland has persistent, ungrazed vegetation < 1710 of area points = 3 • Wetland has persistent ungrazed vegetation < 1710 of area points = 1 • Wetland has persistent ungrazed vegetation < 1710 of area points = 1 • Wetland has persistent, ungrazed vegetation < 1710 of area points = 1 • Wetland has persistent ungrazed vegetation = 1710 of area points = 1 • Area seasonally ponded is > 1/2 total area of undersistent the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland points = 0 • Area seasonally ponded is > 1/2 total area of wetland points = 0 • Area seasonally ponded is > 1/2 total area of wetland points = 0 • Area seasonally ponded is > 1/4 total area of wetland points = 0 • Area seasonally ponded is > 1/4 total area of wetland points = 0 • Area seasonally ponded is > 1/4 total area of wetland points = 0 • Area seasonally ponded is > 1/2 total area of wetland points = 0 • Area seasonally ponded is > 1/4 total area of wetland points = 0 • Area seasonall	D	Depressional and Flat Wetlands	Points
D 1.1 Characteristics of surface water flows out of the wetland: - Unit is a depression with no surface water leaving it (no outlet) - Unit is as an intermittently flowing, OR highly constricted, permanently flowing outlet points = 3 - Unit has an intermittently flowing, OR highly constricted, permanently flowing points = 1 - Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made dict oft— outflow and no obvious natural outlet and/or outlet is an an-made dict oft— outflow and no obvious natural outlet and/or outlet is an an-made dict oft— outflow and the points = 1 - Unit is a "flat" depression (Q.7 on key), or in the Flats class, with permanent surface outflow and or outflow and or or over construction of the surface often outflow and or outflow and or or over construction of the surface of persistent vegetation (emergent, shrub, and/or forest Cowardin class): - Use than has persistent, ungrazed vegetation > = 172 of area		WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.	(only 1 score per box)
■ Unit is a depression with no surface water leaving it (no outlet) ■ Unit has an unconstricted, or slightly constricted, permanently flowing outlet points = 2 ■ Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) ■ Unit is a "flad" depression (Q.7 on key, or in the Flast class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch. D1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4	D 1	Does the wetland have the <u>potential</u> to improve water quality?	(see p.38)
outflow and no obvious natural outlet and/or outlet is a man-made ditch. points = 1 (If ditch is not permanently flowing treat unit as "intermitently flowing" Provide photo or drawing D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions) YES points = 4 NO points = 0 D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation = 1/10 of area. points = 3 • Wetland has persistent, ungrazed vegetation = 1/10 of area. points = 0 Wetland has persistent, ungrazed vegetation = 1/10 of area. points = 0 D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is pended for at least? months, but dries out sometime during the year. Do not count he area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland points = 2 • Area seasonally ponded is > 1/4 total area of wetland points = 2 • Area seasonally ponded is < 1/4 total area of wetland Map of Hydroperiods Total for D 1 D 2 Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants without 150 fit, of wetland — Unit as an interfect or within 150 fit, of wetland — Unit as a depression with no surface water twenty in streams, lakes or groundwater downgradient fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 fit, of wetland — Unit is a depression with no surface water leaving it (no outlet). • TOTAL – Water Quality Functions Multiply the score f		 Unit is a depression with no surface water leaving it (no outlet)	Figure
D 1.3 Characteristics of persistent vegetation (emergent, shrunb, and/or forest Cowardin class):		outflow and no obvious natural outlet and/or outlet is a man-made ditch	3
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area			0
D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/4 total area of wetland		D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class): • Wetland has persistent, ungrazed vegetation > = 95% of area	Figure 5
Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft. Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 ▼ TOTAL – Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. D 3 Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit is a "Hat" depression (Q,7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 2 Unit is a "Hat" depression (Q,7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of outlet points = 5 • Marks of ponding less than 0.5 ft. (or 2 ft. from surface or bott		D 1.4 Characteristics of seasonal ponding or inundation: This is the area of the wetland that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 years. • Area seasonally ponded is > 1/2 total area of wetland	Figure
D 2 Does the wetland have the opportunity to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland Wetland is fed by groundwater high in phosphorus or nitrogen Other YES multiplier is 2 NO multiplier is 1 ◆ TOTAL − Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS − Indicators that wetland unit functions to reduce flooding and stream degradation. D 3 Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet)		1 V 1	12
TOTAL - Water Quality Functions Multiplier is 2 NO multiplier is 1 HYDROLOGIC FUNCTIONS — Indicators that wetland unit functions to reduce flooding and stream degradation. D 3 Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)	D 2	Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland? Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. Grazing in the wetland or within 150 ft Untreated stormwater discharges to wetland Tilled fields or orchards within 150 ft. of wetland A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging X Residential, urban areas, golf courses are within 150 ft. of wetland	(see p. 44) Multiplier 2
★ TOTAL - Water Quality Functions Multiply the score from D1 by D2; then add score to table on p. 1 HYDROLOGIC FUNCTIONS - Indicators that wetland unit functions to reduce flooding and stream degradation. D 3.1 Characteristics of surface water flows out of the wetland unit		Other	
HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation. D 3 Does the wetland have the potential to reduce flooding and erosion? D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet) points = 4 • Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 • Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") • Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 • The wetland is a "headwater" wetland. points = 5 • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 • Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 • Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water. points = 1 • Marks of ponding less than 0.5 ft. points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. • The area of the basin is 10 to 100 times the area of the unit. points = 0 • The area of the basin is more than 100 times the area of the unit. points = 0			24
D 3.1 Characteristics of surface water flows out of the wetland unit • Unit is a depression with no surface water leaving it (no outlet)			24
 Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q.7 on key) or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing") Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points = 0 D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water. points = 1 Marks of ponding less than 0.5 ft points = 0 D 3.3 Contribution of wetland unit to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is los to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 	D 3		(see p.46)
D 3.2 Depth of storage during wet periods. Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry). • Marks of ponding are 3 ft. or more above the surface or bottom of the outlet		 Unit is a depression with no surface water leaving it (no outlet)	4
 basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit		 units with no outlet measure from the surface of permanent water or deepest part (if dry). Marks of ponding are 3 ft. or more above the surface or bottom of the outlet points = 7 The wetland is a "headwater" wetland points = 5 Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outlet points = 5 Marks are at least 0.5 ft. to < 2 ft. from surface or bottom of outlet points = 3 Wetland is flat (yes to Q.2 or Q.7 on key)but has small depressions on the surface that trap water. points = 1 	0
• Entire unit is in the FLATS class		 basin contributing surface water to the wetland to the area of the wetland unit itself. The area of the basin is less than 10 times the area of unit	3

D 4	Does the wetland have the opportunity to reduce flooding and erosion?	(see p. 49)
Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i>		
Wetland is in a headwater of a river or stream that has flooding problems. Wetland drains to a river or stream that has flooding problems Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems Other		Multiplier 1
	YES multiplier is 2 NO multiplier is 1	
•	<u>TOTAL</u> – Hydrologic Functions Multiply the score from D3 by D4; then <i>add score to table on p. 1</i>	7

Wetland name or number _____WLY6_____

Thes	se questions apply to wetlands of all HGM classes.	Points	
	HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.	(only 1 score per box)	
H 1	Does the wetland have the <u>potential</u> to provide habitat for many species?	per comy	
	H 1.1 Vegetation structure (see P. 72): Check the types of vegetation classes present (as defined by Cowardin) – Size threshold for each class is 1/4 acre or more than 10% of the area if unit is smaller than 2.5 acres. Aquatic Bed Emergent plants Service both the cross where shrubs have > 30% cover)	Figure	
	Scrub/shrub (areas where shrubs have > 30% cover) X Forested (areas where trees have > 30% cover) If the unit has a forested class check if: X The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: 4 structures or more points = 4 2 structures	1	
	H 1.2 Hydroperiods (see p.73): Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or 1/4 acre to count (see text for descriptions of hydroperiods). Permanently flooded or inundated 4 or more types present points = 3 X Seasonally flooded or inundated 3 or more types presentpoints = 2 Occasionally flooded or inundated 2 types presentpoints = 1 X Saturated only 1 type presentpoints = 1 Permanently flowing stream or river in, or adjacent to, the wetland Seasonally flowing stream in, or adjacent to, the wetland Lake-fringe wetland	Figure	
	Freshwater tidal wetland = 2 points Map of hydroperiods	1	
	H 1.3 Richness of Plant Species (see p. 75): Count the number of plant species in the wetland that cover at least 10 ft² (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle. If you counted: > 19 species	1	
	H 1.4 Interspersion of Habitats (see p. 76): Decided from the diagrams below whether interspersion between Cowardin vegetation (described in H1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.		
	None = 0 points Low = 1 point Moderate = 2 points Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".	Figure	
	Use map of Cowardin classes. [riparian braided channels]	0	
	High = 3 points H 1.5 Special Habitat Features (see p. 77):		
	Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) Standing snags (diameter at the bottom > 4 inches) in the wetland Undercut banks are present for at least 6.6 ft. (2m) and/or overhanging vegetation extends at least 3.3 ft. (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft. (10m) Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) At least 1/4 acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) Invasive plants cover less than 25% of the wetland area in each stratum of plants	1	
	NOTE: The 20% stated in early printings of the manual on page 78 is an error.	4	
	H 1 TOTAL Score – potential for providing habitat Add the points in the column above	4	

Wetland name or number	WLY6
------------------------	------

H 2	Does t	he wetland have the opportunity to provide habitat for many species?	(only 1 score per box)
	H 2.1	Buffers (see P. 80): Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed". 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% of circumference. No structures are within the undisturbed part of buffer (relatively undisturbed also means no grazing, no landscaping, no daily human use)	Figure
	H 2.2	Corridors and Connections (see p. 81) H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft. wide, has at least a 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor). YES = 4 points (go to H 2.3) NO = go to H 2.2.2 H. 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50 ft. wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lakefringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = go to H 2.2.3 H. 2.2.3 Is the wetland: Within 5 mi (8km) of a brackish or salt water estuary OR Within 3 miles of a large field or pasture (> 40 acres) OR Within 1 mile of a lake greater than 20 acres? NO = 0 points	0

Wetland name or numberWLY6	
H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82): (see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslts.thm) Which of the following priority habitats are within 330 ft. (100m) of the wetland unit? NOTE: the connections do not have to be relatively undisturbed. Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre). Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report p. 152). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceoux, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Nearshore: Relatively undisturbed nearshore habitats. These include C	0
 H 2.4 Wetland Landscape: Choose the one description of the landscape around the wetland that best fits (see p. 84) There are at least 3 other wetlands within 1/2 mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other developmentpoints = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within 1/2 milepoints = 5 	
 There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed	3

Total Score for Habitat Functions

H 2 TOTAL Score – opportunity for providing habitat

Add the scores from H2.1, H2.2, H2.3, H2.4

Add the points for H 1 and H 2; then record the result on p. 1

TOTAL for H 1 from page 8

Wetland name or number WLY

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

	criteria are met				
	criteria are met. Estuarine wetlands? (see p.86)				
SC1	Estuar				
		Does the wetland unit meet the following criteria for Estuarine wetlands?			
		The dominant water regime is tidal,			
		Vegetated, and			
		With a salinity greater than 0.5 ppt.			
		$YES = Go \text{ to } SC 1.1 \qquad NO \underline{X}$			
		Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO = go to SC 1.2	Cat. 1		
	SC 1.2	Is the wetland at least 1 acre in size and meets at least two of the following conditions?			
		YES = Category I NO = Category II	Cat. I		
		The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has			
		less than 10% cover of non-native plant species. If the non-native Spartina spp, are only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category 1. Do not, however, exclude the area of Spartina in	Cat. II		
		determining the size threshold of 1 acre. At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed or un-mowed grassland The wetland has at least 2 of the following features: tidal channels, depressions with open water,	Dual Rating I/II		
		or contiguous freshwater wetlands.			
SC2	Natura	ll Heritage Wetlands (see p. 87)			
502		Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as			
		either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or			
		Sensitive plant species.			
	SC 2.1	Is the wetland being rated in a Section/Township/Range that contains a natural heritage wetland? (This			
		question is used to screen out most sites before you need to contact WNHP/DNR.)			
	S/T/R information from Appendix D or accessed from WNHP/DNR web site				
	YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 NO				
	SC 2.2	Has DNR identified the wetland as a high quality undisturbed wetland or as a site with state threatened			
	SC 2.2	or endangered plant species?	C-4 T		
			Cat I		
		$\mathbf{YES} = \mathbf{Category 1} \qquad \qquad \mathbf{NO} \qquad \underline{\mathbf{X}} \text{not a Heritage Wetland}$			
SC3	Bogs (S	see p. 87)			
		Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use			
		the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the			
		wetland based on its function.			
		1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of soil profile? (See Appendix B for a field key to			
		identify organic soils)? YES = go to question 3 NO = go to question 2			
		2. Does the wetland have organic soils, either peats or mucks that are less than 16 inches deep over			
		bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or			
		pond? YES = go to question 3 NO = is not a bog for purpose of rating			
		3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present,			
		consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more			
		than 30% of the total shrub and herbaceous cover consists of species in Table 3)?			
		YES = Is a bog for purpose of rating NO = go to question 4			
		NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that			
		criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is			
		less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.			
		4. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western			
		hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine. WITH any of			
		the species (or combination of species) on the bog species plant list in Table 3 as a significant			
		component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?	Cat. I		
		YES = Category I NO = Is not a bog for purpose of rating	Cut. 1		

Wetl	and name or numberWLY6					
SC4	Forested Wetlands (see p. 90)					
SC4	Does the wetland have at least 1 acre of forest that meet one of these criteria for the Department of Fish					
	and Wildlife's forests as priority habitats? If you answer yes you will still need to rate the wetland					
	based on its function.					
	Old-growth forests: (west of Cascade Crest) Stands of at least two three species forming a					
	multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare)					
	that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm or					
	more).					
	NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees					
	in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW					
	criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter.					
	Mature forests: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old					
	OR have an average diameters (dbh) exceeding 21 inches (53 cm); 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.	Cat. I				
	YES = Category I $NO = X$ not a forested wetland with special characteristics					
SC5	Wetlands in Coastal Lagoons (see p. 91)					
SCS	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 surface water that is saline or brackish (> 0.5					
	ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the					
	bottom.)					
	YES = Go to SC 5.1 NO X 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 invasive plant species (see list of invasive species on p. 74).					
	At least 3/4 of the landward edge of the wetland has a 100 ft. buffer of shrub, forest, or un-grazed					
	or un-mowed grassland.	Cat. I				
	The wetland is larger than 1/10 acre (4350 square ft.)	0 1				
	YES = Category I NO = Category II	Cat. II				
SC6	Interdunal Wetlands (see p. 93)					
SCU	Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or					
	WBUO)?					
	YES = Go to SC 6.1 NO X not an interdunal wetland for rating					
	If you answer yes you will still need to rate the wetland based on its functions.					
	In practical terms that means the following geographic areas:					
	Long Beach Peninsula lands west of SR 103					
	• Grayland-Westport lands west of SR 105					
	 Ocean Shores-Copalis – lands west of SR 115 and SR 109 					

SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?

SC 6.2 Is the wetland between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre?

Choose the "highest" rating if wetland falls into several categories, and record on p. 1.

NO = go to SC 6.2

YES = Category II

YES = Category III

If you answered **NO** for all types enter "Not Applicable" on p. 1

Category of wetland based on Special Characteristics

Cat. II

Cat. III

NA

APPENDIX C

Stream Photographs



Photograph 1. Thornton Creek near I-5 facing upstream (north).



Photograph 2. Stream SSH3 along 200th Street, west of I-5 facing upstream (west).



Photograph 3. McAleer Creek from culvert facing downstream (south).



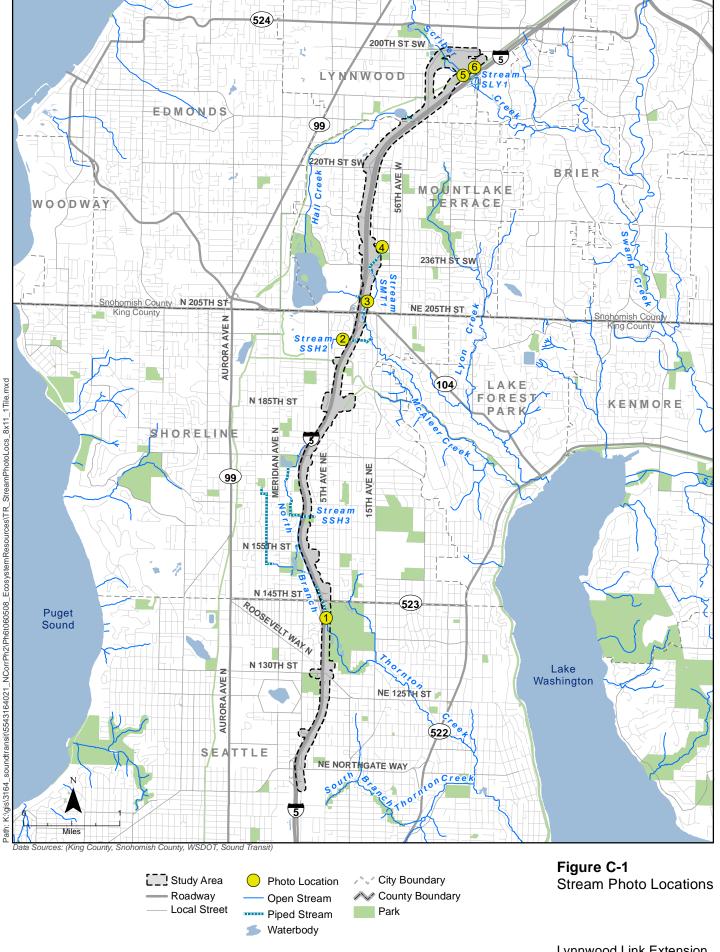
Photograph 4. Stream SMT1 in the park from inlet at north end facing downstream (south).



Photograph 5. Scriber Creek facing downstream (south).



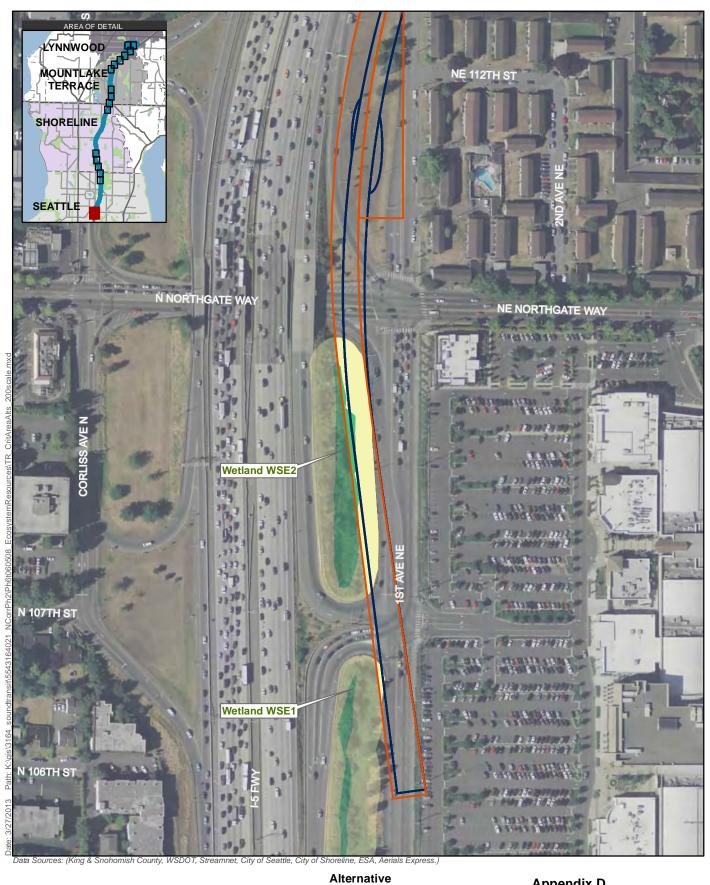
Photograph 6. Stream (SLY1) approximately 100 feet downstream from inlet facing upstream (north).



Lynnwood Link Extension

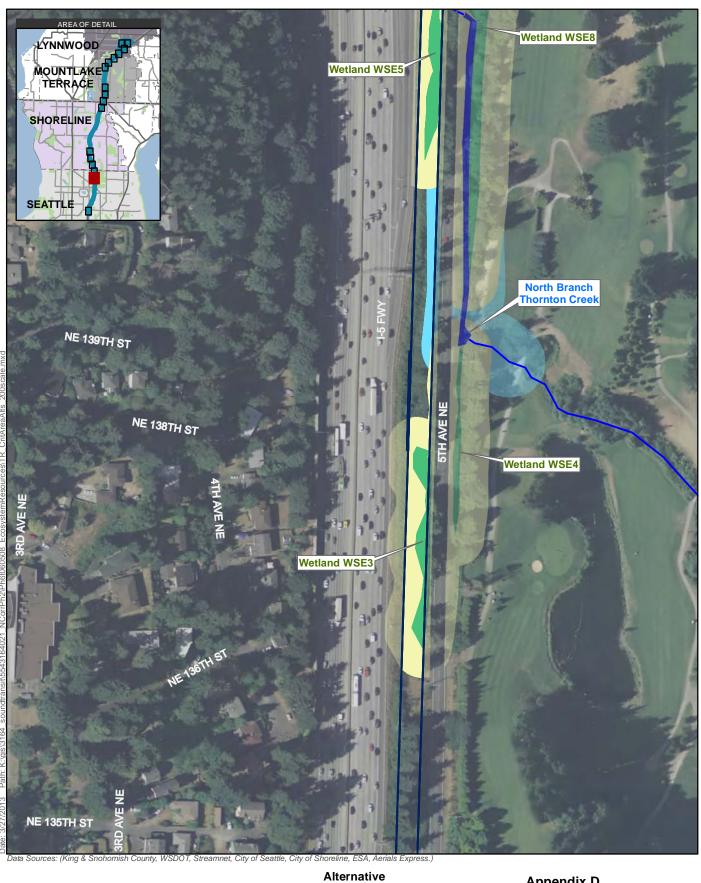
APPENDIX D

Wetland and Stream Impacts



Alternative
Alternative
Alternative
Alternative
Alternative
Alternative
Figure 1
Wetland
Wetland
Wetland Buffer
Wetland Buffer
Wetland Buffer
Wetland Buffer
Wetland Buffer

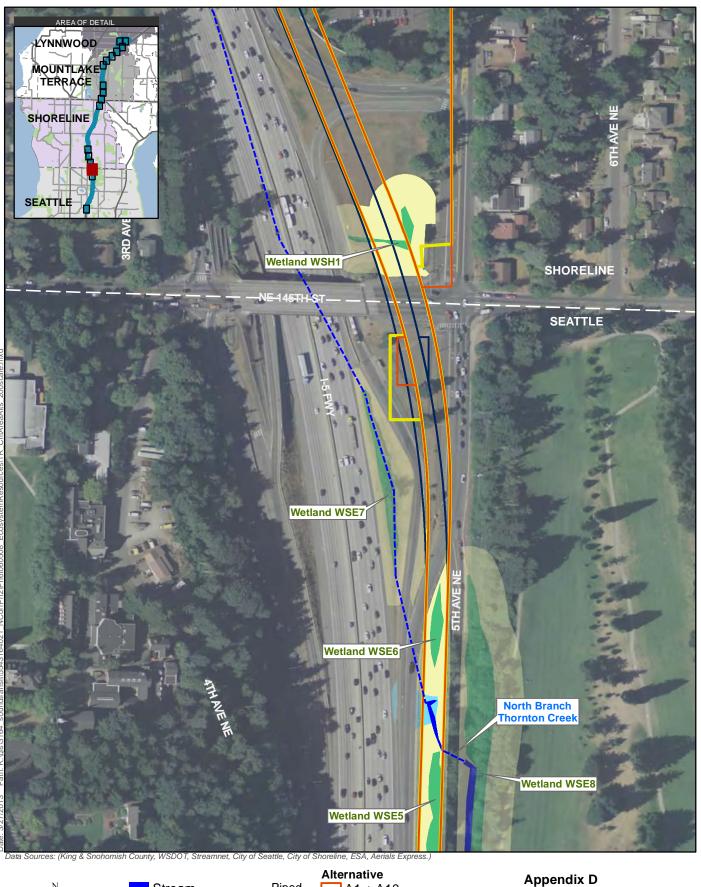
Alternative
Lynnwood Link Extension



Stream
Stream Buffer
Wetland
Wetland Buffer

Nopen
Stream
Wetland Buffer

Alternative
Appendix D
Figure 2
Wetland and Stream Impacts
Lynnwood Link Extension



Stream
Stream Buffer

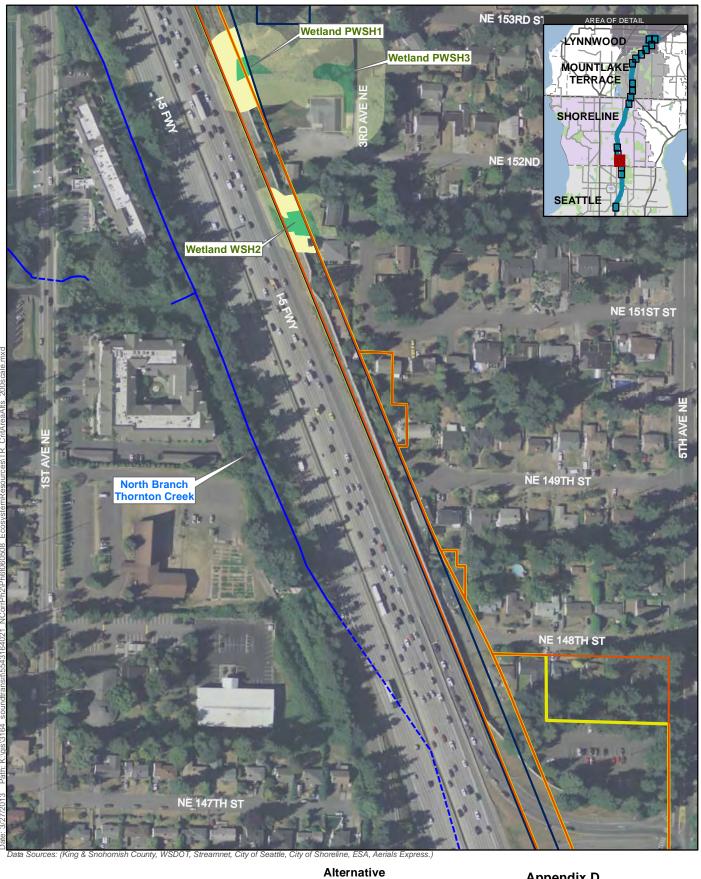
Wetland
Wetland Buffer

Wetland Buffer

Verification

Appendix A1 + A10
Stream
Open
Stream
A3 + A11
Wetland
Stream
A5 + A7
Lynny

Appendix D
Figure 3
Wetland and Stream Impacts
Lynnwood Link Extension



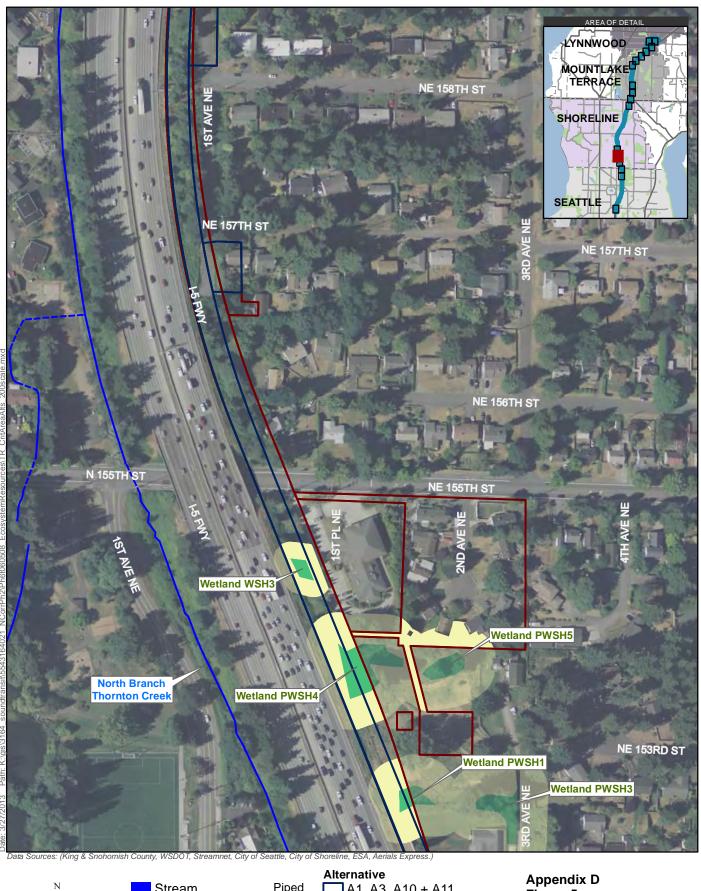
Stream
Stream Buffer

Wetland
Wetland Buffer

N

Stream Piped
Stream
A1 + A10
Stream
Open
Stream
A5 + A7

Appendix D
Figure 4
Wetland and Stream Impacts
Lynnwood Link Extension

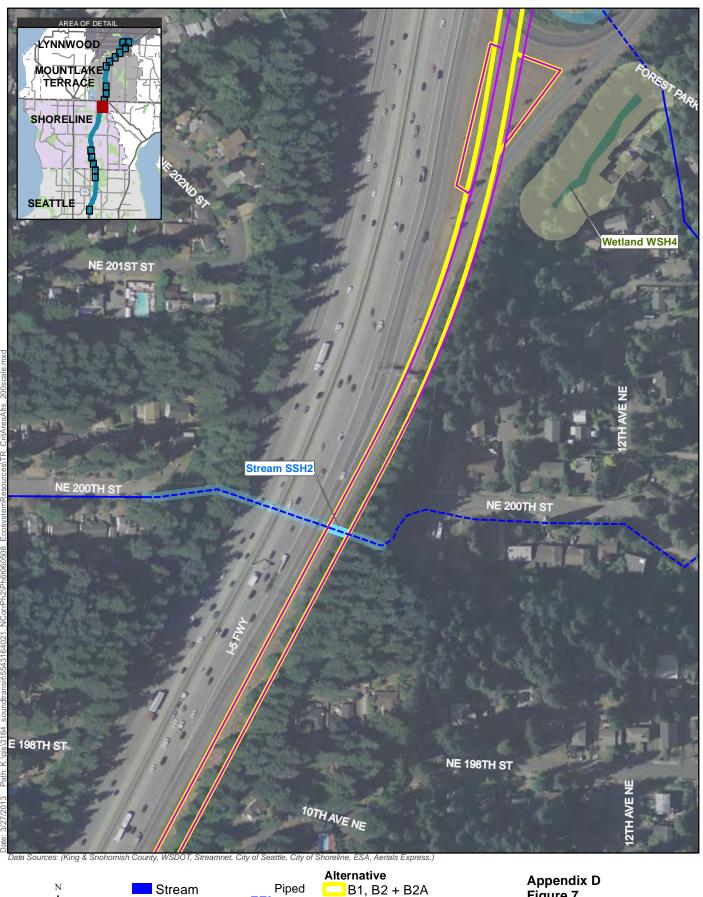


Stream
Stream Buffer
Stream Buffer
Wetland
Wetland Buffer
Wetland Buffer
Wetland Buffer
Wetland Buffer
Wetland Buffer
Wetland Buffer



Alternative
Stream
Stream Buffer
Wetland
Wetland Buffer
Wetland Buffer

N Stream
Stream
Open
Stream
Wetland Buffer
Wetland Buffer
Wetland Buffer



Stream

Open

Stream

■ B4

Stream Buffer

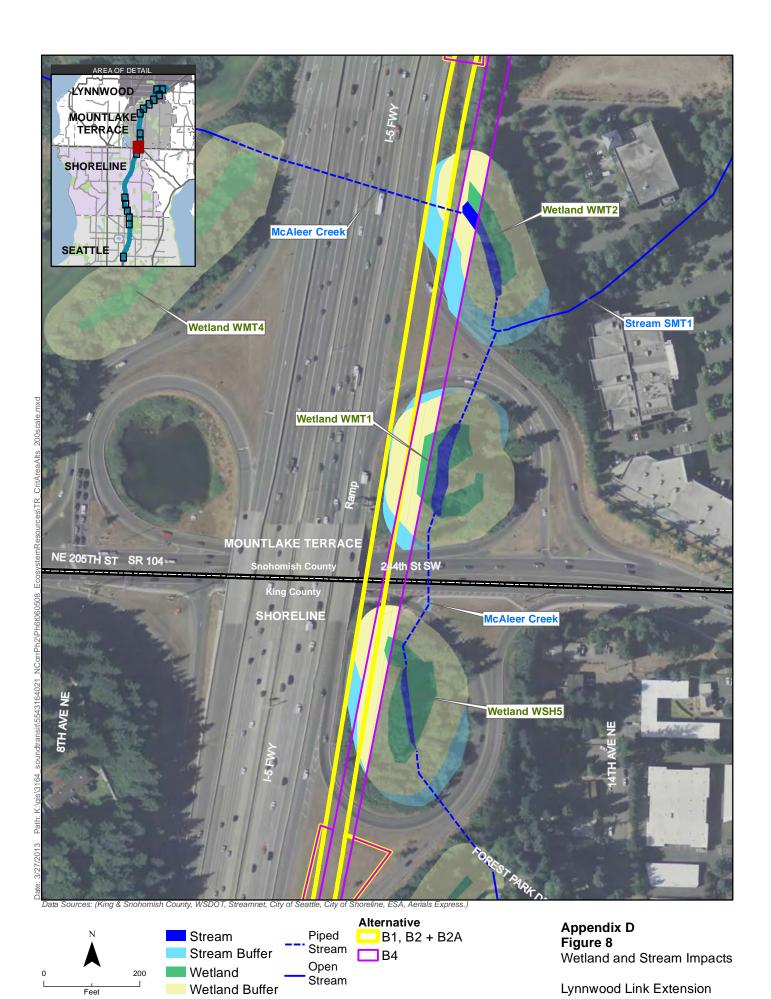
Wetland Buffer

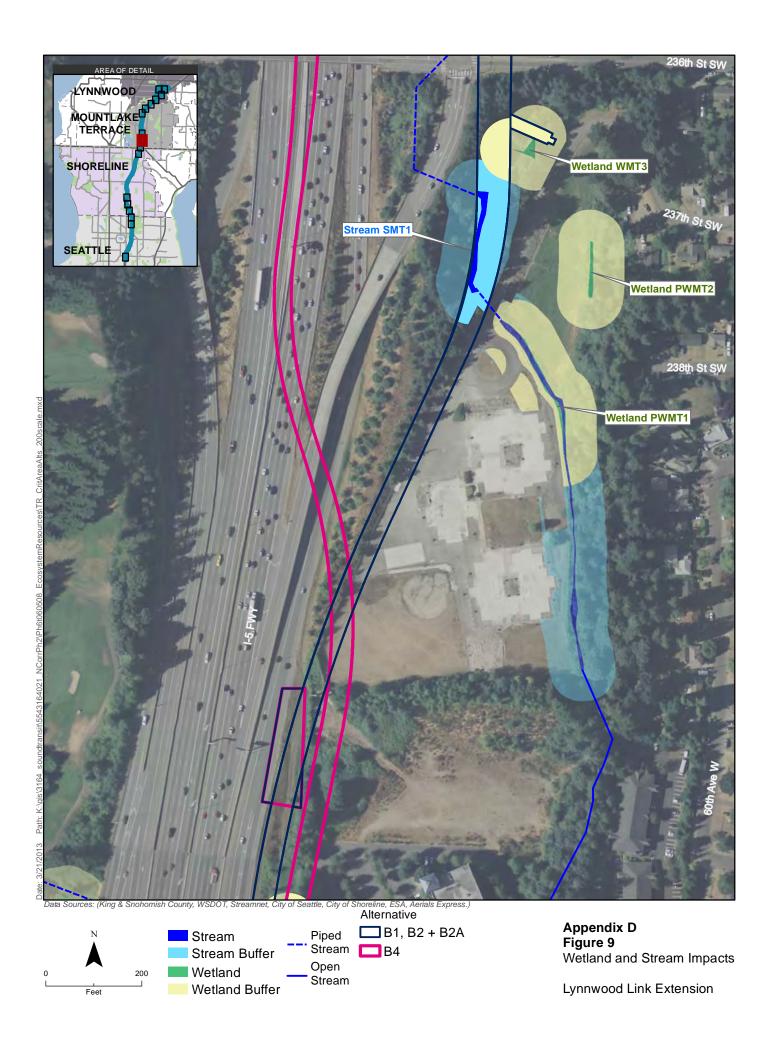
Wetland

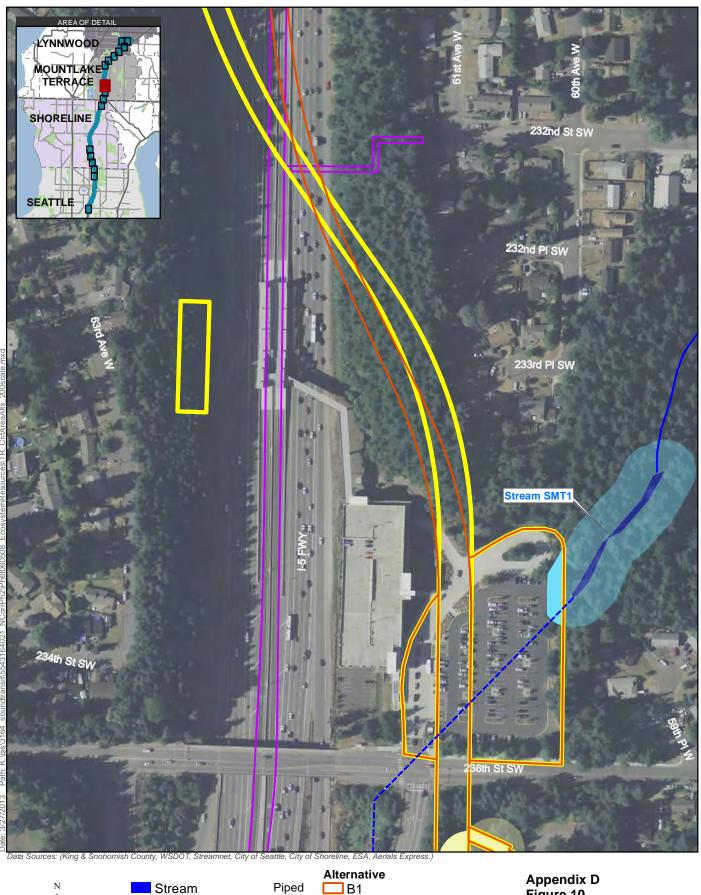
B1, B2 + B2A
B4

Appendix D
Figure 7
Wetland and Stream Impacts

Lynnwood Link Extension







Stream

Open Stream B2 + B2A

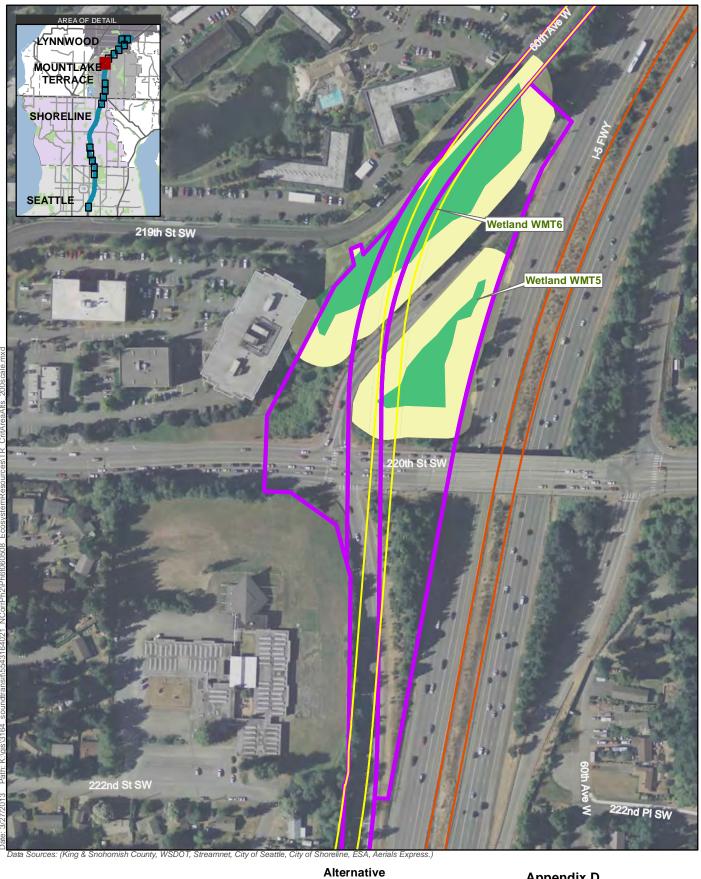
■ B4

Stream Buffer

Wetland Buffer

Wetland

Appendix D
Figure 10
Wetland and Stream Impacts
Lynnwood Link Extension



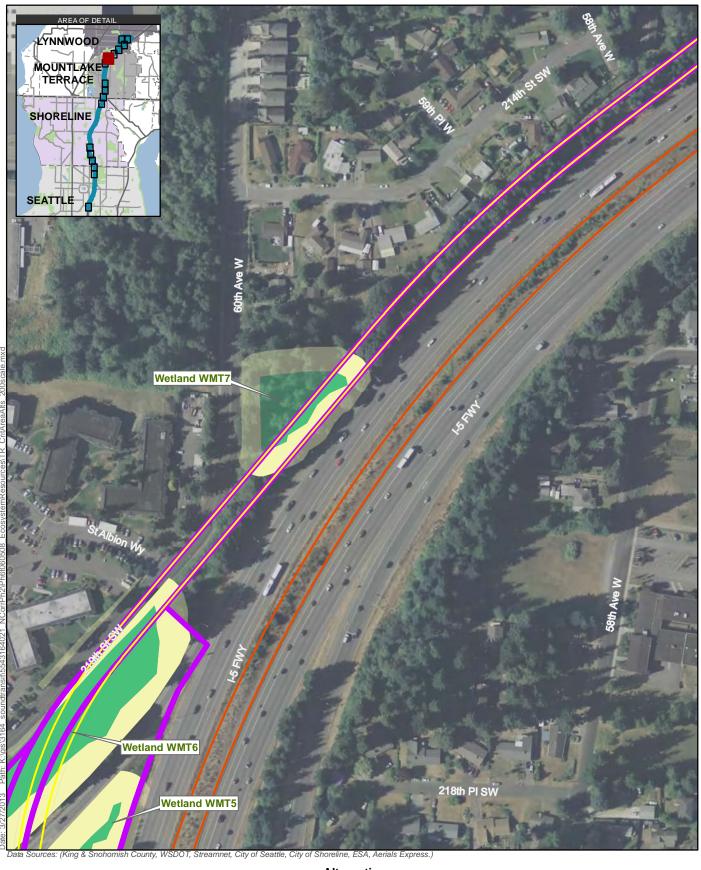
Stream
Stream Buffer

Wetland
Wetland B2A

Alternative
B1 + B4
Stream
B2

Wetland
Stream
B2A

Appendix D
Figure 11
Wetland and Stream Impacts
Lynnwood Link Extension



Stream
Stream Buffer

Stream Buffer

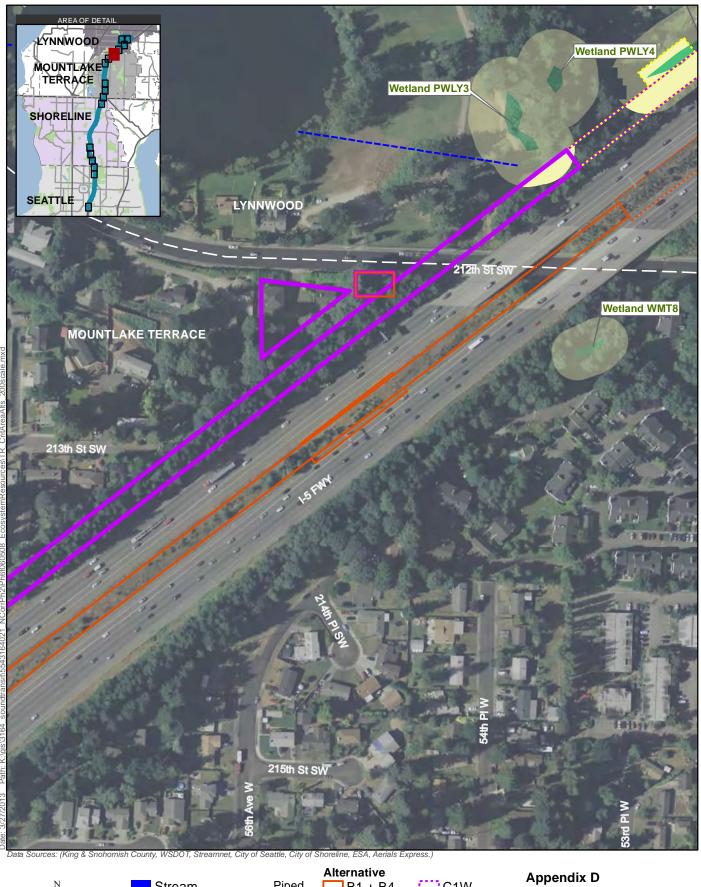
Open
Stream
Stream
Wetland
Wetland Buffer

Wetland Buffer

Stream
B2

Open
Stream
B2A

Appendix D
Figure 12
Wetland and Stream Impacts
Lynnwood Link Extension



Stream
Stream Buffer
Wetland
Wetland Buffer

Wetland Buffer

Stream

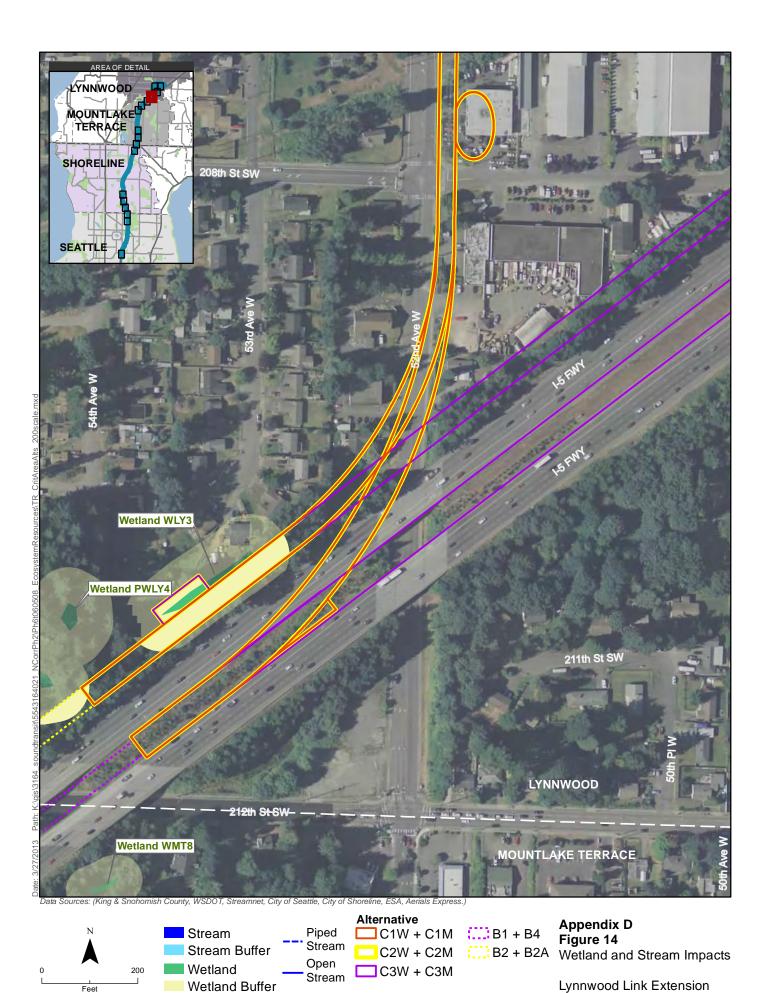
Stream

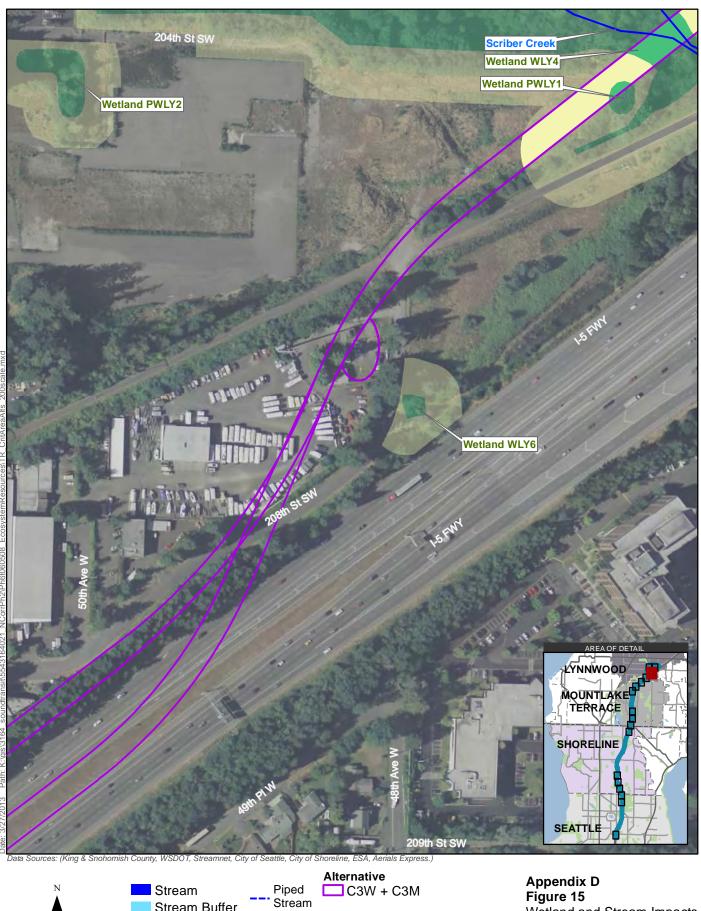
Open
Stream

Vetland Buffer

Stream

Open
Str

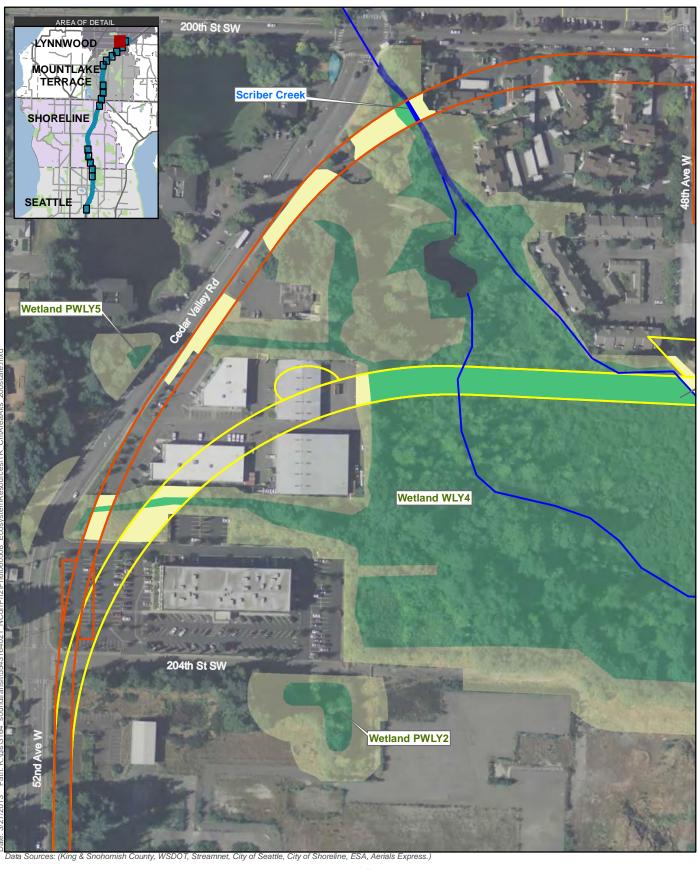




Stream Buffer

Wetland Wetland Buffer Open Stream

Appendix D Figure 15 Wetland and Stream Impacts Lynnwood Link Extension

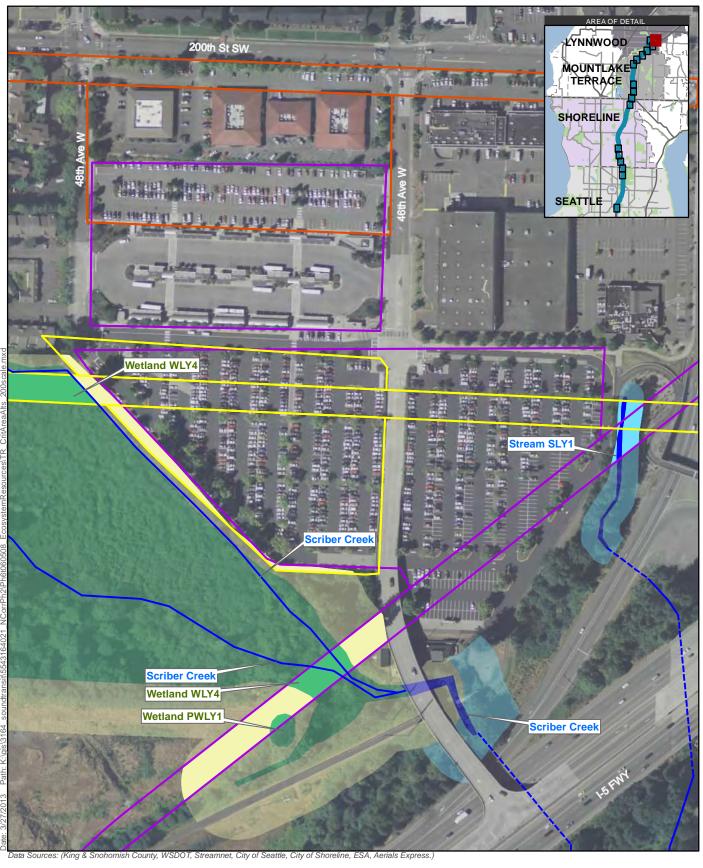


Stream
Stream Buffer

Wetland
Wetland Buffer

Alternative
C1W + C1M
C2W + C2M
Open
Stream

Appendix D
Figure 16
Wetland and Stream Impacts
Lynnwood Link Extension



Alternative

Stream
Stream Buffer

Wetland
Wetland Buffer

Wetland Buffer

Alternative
C1W + C1M
C2W + C2M
Open
Stream
C3W + C3M

Lynnwood Link Extension