

**SR 3 Belfair Area
Widening and Safety Improvements
(BAWSI)**

In-Lieu Fee Use Plan

Prepared by

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Environmental/Hydraulic Services Office
Olympic Region**

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PART A: IMPACT PROJECT DESCRIPTION

1. Project Description

The Belfair Area Widening & Safety Improvements (BAWSI) project is located on State Route (SR) 3 through Belfair from milepost (MP) 25.32 to 26.86. The project is located entirely within Mason County and spans Township 23 North, Range 01 West, Sections 28, 29, & 32.

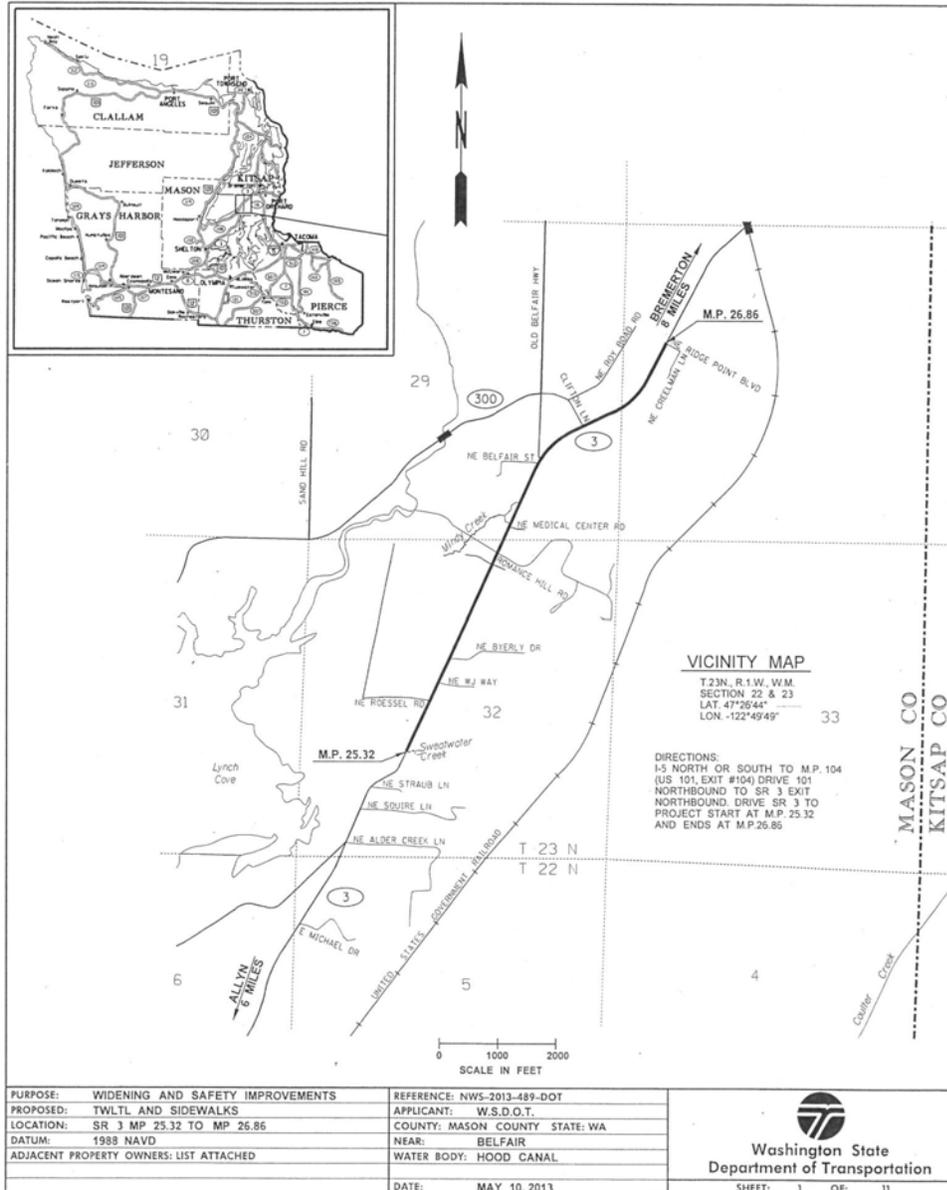


Figure 1. Vicinity Map

The BAWSI project is a safety and mobility project that will help relieve the congested downtown Belfair area and provide easier and safer access to businesses.

The project provides for improvements on a stretch of SR 3 in Mason County by widening asymmetrically to the west from Sweetwater Creek (MP 25.32) to Romance Hill Road (MP 26.13) and symmetrically from Romance Hill Road to Ridgepoint Boulevard (26.86). The project includes clearing, grubbing, grading, drainage, surfacing, paving with hot mix asphalt, constructing retaining walls, installing box culverts, permanent signing, pavement markings, storm water ponds, roadside planting, erosion control, and traffic control.

The project also includes a stream realignment. An unnamed tributary to Mindy Creek flows down Romance Hill Road and makes a 90 degree turn at SR 3 and flows in a roadway ditch for some length. It then crosses SR 3 in multiple culverts before connecting with Mindy Creek. This tributary has several fish barriers identified. WSDOT is proposing to install a large four-sided box culvert, approximately 12 feet in width, at the intersection of SR 3 and Romance Hill Road. WSDOT will also realign the stream to eliminate all the barriers downstream of SR 3. This stream realignment is located based on recommendations from WSDOT's geomorphologists which place the stream where it will be the most conducive to the success and longevity of the stream.

2. Existing Conditions of Aquatic Resources and Wetlands

Streams within the project are an unnamed stream at Romance Hill Road, Mindy Creek, and Belfair Creek. Belfair Creek crosses SR 3 and will be slightly modified to maintain its flow through the culvert. The Belfair Creek culvert will be modified on the east side to eliminate a pipe that is not properly attached to the box culvert. The box culvert will be extended in kind to replace this pipe. The Mindy Creek culvert has been inspected and found to be structurally unsound. This culvert will be replaced with another culvert that meets capacity requirements. If and when the downstream barriers are removed, WSDOT will program a fish barrier removal project.

At the Romance Hill Road stream crossing, in addition to upgrading the crossing beneath SR 3 to provide for fish passage, a new stream channel will be constructed downstream between SR 3 and Mindy Creek. This new channel will be approximately 1000 feet in length.

Nine palustrine forested, scrub-shrub, and emergent wetlands were identified in the vicinity of the project. One of these is an Ecology Category I wetland, three are Category II wetlands, four are Category III wetlands, and one is a Category IV wetland. Hydrogeomorphic classes represented include riverine, slope, and depressional. Varied wetland functions from Ecology's broad categories (Water Quality, Hydrologic & Habitat) are provided by the wetlands in the project area. According to assessment results using the *Wetlands Functions Characterization Tool for Linear Projects* functions assessment tool (BPJ Tool) (Null et al. 2000), the most commonly provided functions by wetlands in the project corridor include Nutrient and Toxicant Removal (Water Quality), Production of Organic Matter and its Export (Habitat), General

Habitat Suitability (Habitat), Habitat for Aquatic Invertebrates (Habitat), and Native Plant Richness (Habitat) (Null et al. 2000).

Table 1 below contains general wetland information. Figure 1 (Page 4) is a wetland location map. Tables 2 through 5 are summary tables of the impacted wetlands (Wetlands C, E, F, and N). Information for other wetlands in the project area (wetlands with no impacts) can be obtained from the wetland biology report for the project (Dreisbach 2013).

Table 1 General Wetland Information

Wetland	Wetland Classification				Buffer Width (feet)
	Cowardin	HGM	Ecology	Mason	
C	PEM	Riverine	IV	IV	50
D	PFO/PEM	Riverine	II	II	100
E	PEM	Riverine	III	III	80
F	PFO	Depression	III	III	80
J	PSS/PEM	Slope	III	III	150
K	PFO/PSS	Riverine	I	I	250
L	PFO/PSS	Slope	III	III	150
N	PFO	Slope	II	II	150
S	PFO	Depression	II	II	100

T.23N. R.1W. W.M.



FILE NAME G:\XL3107\CAD\Scott\Environmental\dgn		REGION NO. 10		STATE WASH	FED.AID PROJ.NO.	DATE		DATE		Plot 1	
TIME 7:24:10 AM	DATE 4/13/2013	JOB NUMBER		LOCATION NO.		P.E. STAMP BOX		P.E. STAMP BOX		PLAN REF NO MK1	
PLOTTED BY gowans	DESIGNED BY T. HORTON	CONTRACT NO.		Washington State Department of Transportation		SR3		HELFAIR AREA WIDENING & SAFETY IMPROVEMENTS		SHEET OF SHEETS	
ENTERED BY P. DANA	CHECKED BY S. GOWAN	REVISION		PAVEMENT MARKING PLAN		I-5 MOBILITY, MP 25.32 TO MP 36.88					
PROJ. ENGR. S. FUCINI	REGIONAL ADM. S. GOWAN	DATE BY									

Figure 2 Wetland Location Map

Table 2 Wetland C Summary

Wetland C																	
	<table border="1"> <tr> <td>Local Jurisdiction</td> <td>Mason County</td> </tr> <tr> <td>WRIA</td> <td>Kitsap - 15</td> </tr> <tr> <td>Ecology Rating</td> <td>IV</td> </tr> <tr> <td>Mason County Rating</td> <td>IV</td> </tr> <tr> <td>Mason County Buffer Width</td> <td>50 feet</td> </tr> <tr> <td>Cowardin Classification</td> <td>PEM</td> </tr> <tr> <td>HGM Classification</td> <td>Riverine</td> </tr> <tr> <td>Wetland Data Sheet(s)</td> <td>Wetland C – DP1</td> </tr> </table>	Local Jurisdiction	Mason County	WRIA	Kitsap - 15	Ecology Rating	IV	Mason County Rating	IV	Mason County Buffer Width	50 feet	Cowardin Classification	PEM	HGM Classification	Riverine	Wetland Data Sheet(s)	Wetland C – DP1
	Local Jurisdiction	Mason County															
	WRIA	Kitsap - 15															
	Ecology Rating	IV															
	Mason County Rating	IV															
	Mason County Buffer Width	50 feet															
	Cowardin Classification	PEM															
	HGM Classification	Riverine															
Wetland Data Sheet(s)	Wetland C – DP1																
Hydrology	Wetland C is a small riverine wetland located east of SR 3 on Belfair Creek south of Clifton Lane. Wetland hydrology is generally supported by hyporheic flow near the creek channel. In November 2007, soils were saturated throughout most of the wetland area with all wetland areas saturated within 12 inches of the soil surface. Secondary hydrology indicators included drainage patterns, geomorphic position, and a positive FAC-neutral test. The strength of the hydrophytic vegetation and hydric soils parameters also suggest this wetland is saturated for sufficient time in the growing season to meet wetland criteria.																
Vegetation	Wetland C is dominated by an emergent habitat type dominated by mowed hydrophytic forbs and grasses. Dominant plant species include sawbeak sedge (OBL), and creeping buttercup (FACW). Also present within the wetland boundary were soft rush (FACW+), water parsley (OBL), water cress (OBL), reed canarygrass (FACW), velvet grass (FAC), bluegrass, knotweed, and curly dock (FAC+). All of these species are considered hydrophytes indicating the wetland vegetation parameter has been met.																
Soils	Soils within the wetland range from silt loam to sandy loam. Soils were very dark grayish brown (10YR 3/2) from 0 to 8 inches and dark gray (10YR 4/1) from 8 to 16+ inches. Common, medium, prominent iron/manganese redoximorphic concentrations were present below 8 inches. This profile description meets NRCS hydric soils indicator A11 (Depleted Below Dark Surface) therefore achieving the hydric soils criteria.																
Rationale for Delineation	The western wetland boundary is formed by the road prism of SR 3. The northern and southern wetland boundaries were flagged where wetland vegetation and soils transitioned to upland grasses and soils lacking hydric characteristics. Upstream to the east, the wetland boundary was flagged where the creek becomes slightly incised and is bordered only by low upland terraces.																
Ecology Rating / BPJ Functions	Wetland C is a low functioning Category IV riverine wetland with higher scores for Hydrologic and Habitat in the broad categories of functions (Water Quality-0; Hydrologic-18; Habitat-10). This wetland provides little function due to its mowed vegetation, lack of depressions to store and/or treat water, and due to its urban setting. Results from the BPJ suggest that functions provided include Nutrient and Toxicant Removal and Production of Organic Matter and its Export.																

Table 3 Wetland E Summary

Wetland E																	
	<table border="1"> <tr> <td>Local Jurisdiction</td> <td>Mason County</td> </tr> <tr> <td>WRIA</td> <td>Kitsap - 15</td> </tr> <tr> <td>Ecology Rating</td> <td>III</td> </tr> <tr> <td>Mason County Rating</td> <td>III</td> </tr> <tr> <td>Mason Co. Buffer Width</td> <td>80 feet</td> </tr> <tr> <td>Cowardin Classification</td> <td>PEM</td> </tr> <tr> <td>HGM Classification</td> <td>Riverine</td> </tr> <tr> <td>Wetland Data Sheet(s)</td> <td>Wetland E – DP1</td> </tr> </table>	Local Jurisdiction	Mason County	WRIA	Kitsap - 15	Ecology Rating	III	Mason County Rating	III	Mason Co. Buffer Width	80 feet	Cowardin Classification	PEM	HGM Classification	Riverine	Wetland Data Sheet(s)	Wetland E – DP1
	Local Jurisdiction	Mason County															
	WRIA	Kitsap - 15															
	Ecology Rating	III															
	Mason County Rating	III															
	Mason Co. Buffer Width	80 feet															
	Cowardin Classification	PEM															
	HGM Classification	Riverine															
Wetland Data Sheet(s)	Wetland E – DP1																
Hydrology	Wetland E is a small wetland east of SR 3 across from NE Belfair Street. Hydrology is supported by groundwater as well as surface runoff from the adjacent parking lot to the east and SR 3 to the west. Water exits the site via the roadside ditch before passing through a cross culvert to the west side of SR 3 and eventually into Hood Canal. In November 2007, the wetland was saturated to the soil surface throughout most of the wetland area. Secondary hydrology indicators observed included drainage patterns, and a positive FAC-neutral test. The strength of the hydrophytic vegetation and hydric soils parameters also suggest this wetland is saturated for sufficient time in the growing season to meet wetland criteria.																
Vegetation	Wetland E is comprised of emergent vegetation and includes a portion of the SR 3 roadside ditch. Dominant plant species include soft rush (FACW+), slough sedge (OBL), and a bluegrass species. Other species observed within the wetland boundary include bird's-foot trefoil (FAC), white sweet clover (FACU), and common cattail (OBL). All of the dominant species are considered hydrophytes indicating the wetland vegetation parameter has been met.																
Soils	Soils within the wetland were silt loam in texture. The soil color was black (10YR 2/1) from 0 to 12 inches and grayish brown (10YR 5/2) from 12 to 16+ inches. Redoximorphic concentrations (10YR 4/4) and depletions (5B 7/1) were observed below 12 inches. This profile description meets NRCS hydric soils indicator A11 (Depleted Below Dark Surface) therefore achieving the hydric soils criteria.																
Rationale for Delineation	The western boundary of Wetland E is formed by the toe of the highway road prism. To the north, east, and south, the wetland is surrounded by pavement from adjacent parking lots and associated fill.																
Ecology Rating / BPJ Functions	Wetland E ranked is a Category III riverine wetland with a slightly higher score for Hydrologic Functions in the broad categories of functions (Water Quality-10; Hydrologic-16; Habitat-8). The wetland provides moderate hydrologic functions due to its ability to provide some water storage during flood events. Water Quality and Habitat functions are limited due to the wetland's lack of depressions for water treatment and urban landscape position. Results from the BPJ Tool suggest that low levels of Flood Flow Alteration and Nutrient and Toxicant Removal are provided.																

Table 4 Wetland F Summary

Wetland F																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Local Jurisdiction</td> <td>Mason County</td> </tr> <tr> <td>WRIA</td> <td>Kitsap - 15</td> </tr> <tr> <td>Ecology Rating</td> <td>III</td> </tr> <tr> <td>Mason County Rating</td> <td>III</td> </tr> <tr> <td>Mason County Buffer Width</td> <td>80 feet</td> </tr> <tr> <td>Cowardin Classification</td> <td>PFO</td> </tr> <tr> <td>HGM Classification</td> <td>Depression</td> </tr> <tr> <td>Wetland Data Sheet(s)</td> <td>Wetland F – DP1</td> </tr> </table>	Local Jurisdiction	Mason County	WRIA	Kitsap - 15	Ecology Rating	III	Mason County Rating	III	Mason County Buffer Width	80 feet	Cowardin Classification	PFO	HGM Classification	Depression	Wetland Data Sheet(s)	Wetland F – DP1
	Local Jurisdiction	Mason County															
	WRIA	Kitsap - 15															
	Ecology Rating	III															
	Mason County Rating	III															
	Mason County Buffer Width	80 feet															
	Cowardin Classification	PFO															
	HGM Classification	Depression															
Wetland Data Sheet(s)	Wetland F – DP1																
Hydrology	Wetland F is small ditch-like depression just south of the Masonic Temple. Hydrology is supported primarily by groundwater with overland flow also providing water from the adjacent highway to the east and from the parking lot to the west. Wetland F outflows at its southern end. During winter months, flow continues through an upland swale west to Wetland S. During the June 2012 site investigation, soils were saturated to the surface throughout most of the flagged wetland area. These observations suggest the wetland hydrology criteria have been met.																
Vegetation	Wetland F is comprised of forested vegetation. Dominant plant species include black cottonwood (FACW), Douglas spirea (FACW), salmonberry (FAC), and bleeding heart. Other species observed within the wetland boundary include Himalayan blackberry (FACU) and Sitka willow (FACW). Most of these species are considered hydrophytes indicating the wetland vegetation parameter has been met.																
Soils	Soils within the wetland were gravelly sandy loam in texture. The soil color was dark gray (10YR 4/2) from 0 to 5 inches and gray (10YR 5/1) from 5-16 inches. Redoximorphic features were present throughout the soil profile (10YR 4/4; 10YR 4/6). This profile description meets NRCS hydric soils indicator F3 (Depleted Matrix) therefore achieving the hydric soils criteria.																
Rationale for Delineation	The boundary of Wetland F coincided with an obvious topographic change at the perimeter of a depressed ditch-like feature. There were obvious differences between the vegetation, soils, and hydrology between the wetland and upland areas. Plants in the adjacent upland included Himalayan blackberry (FACU), sweet vernal grass (FACU), velvet grass (FACU), and Scotch broom (FACU).																
Ecology Rating / BPJ Functions	Wetland F ranked as a Category III depressional wetland with higher scores for Water Quality and Hydrologic across the broad categories of functions (Water Quality-22; Hydrologic-16; Habitat- 8). Results from the BPJ Tool suggest that Nutrient and Toxic Removal is the only significant function provided.																

Table 5 Wetland N Summary

Wetland N																	
	<table border="1"> <tr> <td>Local Jurisdiction</td> <td>Mason County</td> </tr> <tr> <td>WRIA</td> <td>Kitsap - 15</td> </tr> <tr> <td>Ecology Rating</td> <td>II</td> </tr> <tr> <td>Mason County Rating</td> <td>II</td> </tr> <tr> <td>Mason County Buffer Width</td> <td>150 feet</td> </tr> <tr> <td>Cowardin Classification</td> <td>PFO</td> </tr> <tr> <td>HGM Classification</td> <td>Slope</td> </tr> <tr> <td>Wetland Data Sheet(s)</td> <td>Wetland N – DP1</td> </tr> </table>	Local Jurisdiction	Mason County	WRIA	Kitsap - 15	Ecology Rating	II	Mason County Rating	II	Mason County Buffer Width	150 feet	Cowardin Classification	PFO	HGM Classification	Slope	Wetland Data Sheet(s)	Wetland N – DP1
	Local Jurisdiction	Mason County															
	WRIA	Kitsap - 15															
	Ecology Rating	II															
	Mason County Rating	II															
	Mason County Buffer Width	150 feet															
	Cowardin Classification	PFO															
	HGM Classification	Slope															
Wetland Data Sheet(s)	Wetland N – DP1																
Hydrology	Wetland N is a large gently sloping wetland ranging between 200 and 500 feet west of SR 3 from the vicinity of the Masonic Temple northward to an area directly across the highway from Romance Hill Road. Drainage is to Mindy Creek. Hydrology is primarily supported by groundwater. Surface water also enters the wetland from the south and east. During a May 2010 site investigation, soils were saturated to the surface throughout the wetland area. In a soil test pit, standing water was observed at 8” inches immediately after digging. These observations suggest the wetland hydrology criteria have been met.																
Vegetation	Wetland N is comprised of a forested vegetation class. In a vegetation data plot, dominant plant species included red alder (FAC), western red cedar (FAC), Indian plum (FACU), and a <i>Tiarella</i> species. Other plant species observed within the wetland boundary included black cottonwood (FAC), salmonberry (FAC), devil’s club (FACW), lady fern (FAC), skunk cabbage (OBL), Pacific waterleaf (NL), stinging nettle (FAC+), giant horsetail (FACW), and sword fern (FACU). Most of these species are considered hydrophytes indicating the wetland vegetation parameter has been met.																
Soils	In a test pit, soils were gravelly sandy loam in texture. The soil color was black (10YR 2/1) from 0 to 6 inches and dark grayish brown (10YR 4/2) from 6 to 20 inches. Redoximorphic concentrations (7.5YR 3/6) were present below 6 inches. This profile description meets NRCS hydric soils indicator F3 (Depleted Matrix) therefore achieving the hydric soils criteria.																
Rationale for Delineation	The eastern boundary of Wetland N coincides with a topographic break where upland plants and soils abruptly transition to an area with distinct hydric soils and a hydrophytic plant community. The wetland area was also visibly saturated at the time of the May soils investigation whereas upland areas were dry. Dominant plants in the adjacent uplands include big leaf maple (FACU), western red cedar (FAC), Himalayan blackberry (FACU), and stinging nettle (FAC+).																
Ecology Rating / BPJ Functions	Wetland N ranked as a Category II slope wetland with a higher score for Habitat Functions in the broad categories of functions (Water Quality-22; Hydrologic-10; Habitat-27). Results from the BPJ Tool suggest Flood Flow Alteration, Sediment Removal, Nutrient and Toxicant Removal, Production of Organic Matter and its Export, General Habitat Suitability, Habitat for Aquatic Invertebrates, Habitat for Amphibians, and Native Plant Richness are the primary functions. Functions provided to a lesser extent include, Erosion Control and Shoreline Stabilization, Habitat for Wetland-Associated Mammals, and Fish Habitat are provided at lower levels.																

3. Avoidance and Minimization of Impacts to Aquatic Resources

Avoidance and minimization of wetlands or other aquatic resources were not major design factors in determining the final construction footprint of this widening project. Without exception, the larger, higher functioning, higher category wetlands in the project area are located far enough away from the existing highway that there were no potential impacts to those resources. There are several low category, low functioning wetlands immediately adjacent to the highway (Wetlands C, D, E, & F). Design analysis revealed that alternative alignments, whether symmetrical or asymmetrical, all resulted in minimal and comparable impacts to low category wetland areas. Due to the prevalence of wetlands in the low-lying areas throughout the project area, careful consideration was given to placement of project stormwater detention ponds. Ponds were located on suitable sites where there would be no impacts to wetlands. Design factors that did have substantive influence on the project footprint included 1) construction efficiency, 2) efforts to reduce impacts to the travelling public, and 3) efforts to reduce impacts to adjacent property owners.

Where wetland impacts were unavoidable, impacts were minimized to the extent possible through the use of steeper slopes (i.e. 2:1 instead of 4:1) and other geometric techniques. Applicable measures and other comments as they relate to avoidance and minimization of individual wetlands are included in Table 6 below.

Table 6 Avoidance and Minimization Measures

Wetland	Total Wetland Area (ft ² /acres)	Permanent Wetland Impact (ft ² /acres)	Temporary Wetland Impact (ft ² /acres)	Permanent Wetland Buffer Impact (ft ² /acres)	Temporary Wetland Buffer Impact (ft ² /acres)	Avoidance and Minimization Steps Taken
C	871 / 0.02	436 / 0.01	436 / 0.01	871 / 0.02	3,920 / 0.09	Wetland C at this location is Belfair Creek as a channelized and mowed wetland ditch intersecting SR 3. Impacts were unavoidable but steeper side slopes and other geometric techniques were used to minimize impacts.
D	3,920 / 0.09	0 / 0	0 / 0	871 / 0.02	0 / 0	Although Wetland D is close to the existing highway and proposed project, impacts to Wetland D from facility widening were avoided.
E	871 / 0.02	871 / 0.02	0 / 0	0 / 0	0 / 0	Due to the small size and proximity of Wetland E to the highway, a total impact of Wetland E was unavoidable.
F	436 / 0.01	436 / 0.01	0 / 0	0 / 0	0 / 0	Due to the small size proximity of Wetland F to the highway, a total impact of Wetland F was unavoidable. Even an asymmetrical widening to the east would have resulted in a complete impact of Wetland F.
J	Wetland extends outside project area	0 / 0	0 / 0	9,7583 / 0.22	6,970 / 0.16	The location of Pond A to the east totally avoids direct impacts to Wetland J.
K	Wetland extends outside project area	0 / 0	0 / 0	24,830 / 0.57	19,166 / 0.44	The location of Pond C to the north totally avoids direct impacts to Wetland K.
L	Wetland extends outside project area	0 / 0	0 / 0	11,761 / 0.27	17,860 / 0.41	The location of Pond C to the southeast totally avoids direct impacts to Wetland J.
N*	Wetland extends outside project area	0	0	Buffer impacts from N and S combined total 23,522 / 0.54	0	Achieving the goals of 1) realigning the unnamed tributary for successful longevity of the stream and 2) removing the fish barriers unavoidably result in minor impacts to Wetland N.
N2*	Wetland extends outside project area	1,742 / 0.04	0	22,651 / 0.52	60,548 / 1.39	
S	1,742 / 0.04	0	0	Buffer impacts from N and S combined total 23,522 / 0.54	0	No avoidance or minimization efforts were necessary to totally avoid Wetland S.
TOTALS		3,485 / 0.08	436 / 0.01	94,089 / 2.16	108,464 / 2.49	

*Impacts to Wetland N are divided and shown on two separate Corps drawings (Sheets 3 of 11 & 4 of 11).

4. Unavoidable Wetland Impact Acreage

Unavoidable impacts to wetlands are shown in Tables 7 & 8 below.

Table 7 Expected Impacts to Wetlands*

Wetland Identifier	Total Wetland Area (acres)	Proposed Fill in Wetland After Avoiding and Minimizing (acres)	Temporarily Impacted Wetland Area (acres)	Buffer Impact Area (acres)**	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
C	0.02	0.01	0.01	0.11	PEM	IV	IV	Riverine
E	0.02	0.02	0	0	PEM	III	III	Riverine
F	0.01	0.01	0	0	PFO	III	III	Depressional
N	Unkn***	0.04	0	2.45	PFO	II	II	Slope
TOTALS		0.08	0.01	2.56				

*Only wetlands with wetland impacts are included in Table 7. Wetlands with wetland buffer impacts only are excluded from table.

**Buffer impact acreage includes both permanent and temporary impacts.

***Wetland N extends a great distance outside project area. The total area is unknown.

Table 8 Wetland Impact Summary by Classification *

Classification System	Class	Area of Permanent Wetland Impacts (acres)	Area of Temporary Wetland Impacts (acres)	Area of Permanent Buffer Impacts (acres)	Area of Temporary Buffer Impacts (acres)
Washington State And Local Jurisdiction Wetland Rating	I	-	-	-	-
	II	0.04	-	1.06	1.39
	III	0.03	-	-	-
	IV	0.01	0.01	0.02	0.09
USFWS (Cowardin)	PFO	0.05	-	1.06	1.39
	PSS	-	-	-	-
	PEM	0.03	0.01	0.02	0.09
Hydrogeomorphic	Depressional	0.01	0	0	0
	Riverine	0.03	0.01	0.02	0.09
	Slope	0.04	0	1.06	1.39

*Only wetlands with wetland impacts are included in Table 8. Wetlands with wetland buffer impacts only are excluded from table.

5. Impacted Wetland Functions

Wetland functions for impacted wetlands were assessed (Appendix C) using the *Wetlands Functions Characterization Tool for Linear Projects* (BPJ) (Null et al. 2000). The Ecology rating system (Hruby 2004) results are also used as a supplementary source of information about the impacted wetland functions. Project activities will result in minor reduction of wetland functions in the area due to unavoidable permanent impacts to Wetlands C, E, F, and N. The broad categories of functions reduced are primarily Water Quality and Hydrologic functions. There will be almost no reduction in Habitat functions. A discussion of impacted functions is provided below. A Wetland Function Impact Summary (Credit-Debit Method) is provided in Table 9 and a Wetland Functions Characterizations Tool (BPJ) is provided in Table 10.

Water Quality:

BPJ Tool: Project activities will result in a minor reduction in Water Quality functions as a result of the total impacts of Wetlands C and E, and partial impacts of Wetlands F and N. Although not considered a primary function, Nutrient and Toxicant Removal was considered provided by Wetlands C, E, and F. These wetlands do not impound water for long periods of time, they don't have clay or organic soils, and they generally lack dense sediment trapping vegetation. However, these wetlands are located where there is a high opportunity for pollutants to be entering the wetlands and they have some potential for trapping pollutants and sediments. Project impacts will result in minor reductions of Water Quality function in Wetlands C, E, and F. Nutrient and Toxicant Removal is a primary function of Wetland N. A greater amount per unit area of Water Quality Function may be lost at Wetland N with the conversion of vegetated wetland area to stream. Water quality functions will be reduced as a result of impacts to the above wetlands, however, it should also be noted that this widening project will include stormwater treatment throughout. Whereas the current highway condition results in untreated stormwater entering these wetlands, the post-project highway facility will include treatment for all water leaving the roadway in this area thereby mitigating loss of this function separately and in addition to compensatory wetland mitigation measures.

Ecology Rating System: Water Quality score results for the Ecology rating system for these wetlands vary but generally support the above discussion (Wetland C=0; Wetland E=10; Wetland F=22; Wetland N=22). All of these wetlands have opportunity to provide Water Quality functions, but Wetlands C and E have low potential due to the topography and lack of supporting physical characteristics. The higher Water Quality score for Wetland F, a small ~500 square foot ditch, is attributed to dense vegetation and a partially constricted outlet resulting in intermittent shallow water retention over most of its area.

Hydrologic:

BPJ Tool: Project activities will result in a minor reduction in Hydrologic functions as a result of the total impacts of Wetlands E and F, and partial impacts at Wetland C and N. Wetlands C, E, and F were all considered to have very low Hydrologic Functions. Wetland C is a mowed ditch that conveys rather than retains water, and Wetland F is a depression that holds water that would otherwise flow to Mindy Creek. Wetland E also provides a very small amount of water storage during periods of high rainfall. None of these wetlands provide substantive Erosion Control and Shoreline Stabilization. Wetland N provides Flood Flow Alteration as a primary function. The

impacts from the stream reconnection in Wetland N may result in a minor reduction in this function.

Ecology Rating System: Wetlands C, E, and F have moderate Ecology rating system Hydrologic functions scores (18, 16, 16). Due to the very small size of these wetlands and their general lack of characteristics that would slow flood flows or store water, the Hydrologic function provided and thus lost in these wetlands is best described as low and minor. The Ecology rating Hydrologic score for Wetland N is low (10). Wetland N is large, has many characteristics that would support Hydrologic functions, and should probably be considered to have high hydrologic functions. The low Hydrologic score can be largely attributed to the HGM class (slope), usually resulting in a relatively lower Hydrologic score.

Habitat:

BPJ Tool: Project impacts to overall Habitat Functions in Wetlands C, E, F, and N are negligible. Wetlands C, E, and F are very small low functioning wetlands immediately adjacent to SR 3. Due to their small size and proximity to the highway, almost no habitat functions are provided by these wetlands. Wetland C was considered somewhat likely to perform the function of Organic Matter Transport to down gradient-habitats. Wetland N is a large complex forested wetland that includes habitat characteristics that support nearly all the individual habitat functions evaluated by the BPJ tool. Production of Organic Matter and its Export, General Habitat Suitability, Habitat for Aquatic Invertebrates, Habitat for Amphibians and Native Plant Richness are all considered primary functions. Other functions provided included Fish Habitat and Aquatic Mammal Habitat. Only Wetland-associated Bird Habitat function was not considered to be provided due to the lack of open water in Wetland N. However, the 0.04 acre impact to Wetland N resulting from the stream re-alignment and stream reconnection to Mindy Creek could be considered a net benefit to Wetland N with regard to overall habitat functions.

Ecology Rating System: Results from the Ecology ratings system support the above discussion. Habitat scores for Wetlands C, E, and F were correspondingly low (10, 8, 8), while the habitat score for Wetland N was high (27).

Table 9 Wetland Function Impact Summary (Credit-Debit Method)

Wetland	Function	Improving Water Quality	Hydrologic	Habitat
C	Rating of Site Potential	L	M	L
	Rating of Landscape Potential	H	M	L
	Rating of Value	H	M	L
	Score for Wetland	7	6	3
E	Rating of Site Potential	L	M	L
	Rating of Landscape Potential	H	H	L
	Rating of Value	H	M	L
	Score for Wetland	7	7	3
F	Rating of Site Potential	M	M	L
	Rating of Landscape Potential	H	H	L
	Rating of Value	H	M	L
	Score for Wetland	8	7	3
N	Rating of Site Potential	M	L	M
	Rating of Landscape Potential	M	M	H
	Rating of Value	H	L	H
	Score for Wetland	7	4	8

Table 10

Wetlands Functions Characterization Tool (BPJ) Summary

Function *	Wetland			
	Wetland C	Wetland E	Wetland F	Wetland N
Water Quality Functions				
Sediment Removal	-	-	-	X*
Nutrient and Toxicant Removal	X	X	X	X*
Hydrologic Functions				
Flood Flow Alteration	-	X	-	X*
Erosion Control & Shoreline Stabilization	-	-	-	X
Habitat Functions				
Production & Export of Organic Matter	X	-	-	X*
General Habitat Suitability	-	-	-	X*
Habitat for Aquatic Invertebrates	-	-	-	X*
Habitat for Amphibians	-	-	-	X*
Habitat for Wetland-Associated Mammals	-	-	-	X
Habitat for Wetland-Associated Birds	-	-	-	
General Fish Habitat	-	-	-	X
Native Plant Richness	-	-	-	X*
Special Characteristics				
Educational or Scientific Value	-	-	-	
Uniqueness and Heritage	-	-	-	

*: “-“ means that the function is not present, “X” means that the function is present, and an asterisk indicates a principal function of the wetland.

6. Unavoidable Impacts to Non-Wetland Aquatic Areas and Buffers

Table 11 below summarizes the amount of unavoidable impacts to non-wetland aquatic resources expected. Resource 1 below relates to the regrade of the area east of the culvert at the Unnamed Tributary to Mindy Creek (Romance Hill Creek). The modifications are necessary for the integrity of the stream and transportation facility. A separate jurisdictional ditch memo has been prepared and submitted to the Corps documenting impacts to one jurisdictional ditch within the project area (Resources 3 below). The jurisdictional ditch will be replaced “in-kind” at a 1 to 1 ratio.

A discussion of project impacts and enhancement activities associated with wetland buffers is provided in section 7 below.

Table 11 Expected Impacts to Streams and other Aquatic Resources

Resource Identifier	Name	Affected Area (ac, lf, or sf)	Permanently Altered Area (ac, lf, or sf)	Temporarily Altered Area (ac, lf, or sf)	Indirect Impact Area (ac, lf, or sf)	State and Local Classification
1	Romance Hill Ck & regrade of the stream east of the culvert (Sheet 4 of 11)	435 ft ²	-	435 ² ft	-	F*
2	Romance Hill Ck (Sheet 4 of 11)	1742 ft ²	1742 ft ^{2**}	-	-	F
3	Jurisdictional Ditch (Sheet 5 of 11) **	350 ft ²	350 ft ²	-	-	F
Totals		4355 ft ²	3920 ft ²	435 ² ft	-	F

*F = fish bearing stream according to the WSDNR stream typing system.

**The jurisdictional ditch will be replaced “in-kind” just east of the existing ditches.

7. Impacted Non-Wetland Aquatic Area and Buffer Functions

No non-wetland aquatic area functions are expected to be lost or altered. The temporary impacts to the area east of the culvert (Resource 1 above) are a necessary component of the stream realignment. The stream re-alignment (Resource 2) will re-establish a natural drainage pattern at this location, provide fish passage, and provide conditions conducive to long-term success and viability of the stream. The conveyance function provided by the jurisdiction ditch (Resources 3) will be replaced “in-kind” as part of the project.

Wetland buffer impacts from the project (Tables 6-8) generally occur in degraded and low-functioning buffers. A narrow strip of wetland buffer between Wetland D and SR 3 will be permanently impacted from road widening at that location. Buffer impacts at Wetland C will occur in a mowed, very low functioning buffer partly on the SR 3 road prism. As shown in Table 6, most of the buffer impacts from the project are associated with stormwater treatment in the degraded buffers

of Wetlands J, K, L, and N. Currently, the buffers are generally void of woody vegetation and dominated by invasive and/or non-native plants (i.e. Scotch broom; Himalayan blackberry). The temporary buffer impact areas for Wetlands J, K, L, and N will be planted with a mix of native trees and shrubs and maintained in a weed free condition for three years. Buffer enhancement in the above areas thus provides a substantial net functional benefit to the associated wetlands. It is considered compensation for both temporary and permanent buffer impacts from the project.

PART B: JUSTIFICATION FOR USING IN-LIEU FEE PROGRAM

1. Description of Mitigation Options Considered

Compensatory Mitigation is required for permits authorized by the CWA Section 404 and other Department of the Army permits. The 1990 Section 404 Mitigation Memorandum of Agreement (MOA) signed by the USEPA and USACE established procedures for implementing existing Section 404 regulatory requirements. In particular, the MOA set forth the process by which USACE will comply with the Section 404(b)(1) Guidelines when considering impacts and mitigation within the context of Standard Permit (Individual Permit) applications. Only when USACE is satisfied that an applicant has taken all steps to first avoid the impact altogether and second to minimize impacts, will USACE consider mitigation. When determining the level of appropriate mitigation, USACE considers the type of aquatic resource impacted and its functions. The type of mitigation proposed to compensate for the project impact should be ecologically appropriate and consistent with guidance issued in the form of the federal rule on compensatory mitigation titled *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule* (Federal Rule) 33 CFR Section 332.3(b). The Federal Rule emphasizes the use of a watershed approach to compensatory mitigation. The watershed approach involves consideration of several factors to assure proper implementation:

- Watershed needs and Compensatory Mitigation projects to address those needs,
- Landscape scale,
- Historic and potential aquatic resource conditions,
- Past and projected aquatic resource impacts, and
- Terrestrial connections between aquatic resources.

The Federal Rule provides for improved review of mitigation and anticipates enhanced mitigation success based on:

- The use of effective standards based on best available science that should increase the success rate of mitigation projects,
- Increased public participation that should lead to more input and ideas for proposed projects, and
- More uniform standards that should increase the viability of mitigation banks and ILF programs compared to the more traditional permittee-responsible mitigation.

In addition, the federal rule on compensatory mitigation titled *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule* (Federal Rule) 33 CFR Section 332.3(b) specifies that when considering options for successfully providing the required compensatory mitigation, the district engineer shall consider the type and location options in the following order:

- a. Wetland Mitigation Banks,
- b. In-Lieu Fee Programs, and lastly
- c. Permittee-Responsible Mitigation.

In accordance with this guidance, WSDOT first took all possible steps to first avoid and then minimize wetland impacts resulting from the project as documented in Part A, Section 3. After avoidance and minimization, an unavoidable permanent wetland impact of 0.08 acre remained. WSDOT considered the three potential means for wetland mitigation beginning with mitigation banking. Mitigation banking is not a possibility since the project is outside the service area of any existing mitigation bank in the region. Subsequently, WSDOT approached the newly established Hood Canal Coordinating Council (HCCC) In-Lieu-Fee (ILF) program about the mitigation need resulting from SR 3 BAWSI project impacts.

2. In-Lieu Fee Program Selection Rationale

The mitigation need from the SR 3 BAWSI project was determined an appropriate fit within the HCCC ILF program due to the service area location and nature of the freshwater wetland impacts. The use of the HCCC ILF Program became the preferred compensatory mitigation option. The ILF program was approved by the IRT and the USACE Seattle District in July 2012. The ILF program has the ability to provide credits for the anticipated freshwater wetlands impacts within WRIA 15 and the program has credits available to fulfill the mitigation requirements of the proposed action.

ILF Program Goal and Objectives

The Goals and Objectives have been developed by the ILF program sponsor and are included in the Final Instrument (HCCC 2012). The primary goal of the HCCC ILF Program for Hood Canal is to ensure no net loss of aquatic resource functions in the Hood Canal watershed. This can be accomplished by improving existing mitigation requirements and by rigorous site assessment and selection processes that fully support priorities for conserving and restoring Hood Canal. While mitigation seeks to generally offset the impacts of development projects resulting in no net loss, this ILF Program will add value to mitigation processes by implementing projects in a coordinated manner, consistent with existing regulations and legal limitations relating to mitigation. To accomplish this goal, the HCCC has incorporated the following additional goals into the ILF Program:

- Provide a viable option to ensure the availability of high-quality mitigation for unavoidable, site-specific impacts to freshwater wetlands, streams, lakes, buffers, and marine/nearshore aquatic resources in the Hood Canal watershed to ensure at a minimum no net loss of aquatic functions and values in Hood Canal.
- Meet the goals and aspirations of the Hood Canal Integrated Watershed Management Plan (IWMP).
- Develop, in cooperation with environmental regulatory and tribal partners, an ecologically based site selection process and associated tools to identify the most appropriate freshwater and marine/nearshore mitigation options(e.g. aquatic resource type, amount, location, and mitigation strategy) that result in greater ecological benefit to the Hood Canal watershed than could be achieved through permittee-responsible mitigation.
- Utilize scale efficiencies by combining the impacts from individual projects within a service area into mitigation at larger sites.
- Meet federal, state, tribal, and local regulatory requirements by creating an efficient

mechanism for fulfilling compensatory mitigation requirements.

- Select the best mitigation receiving sites for the HCCC ILF Program through a rigorous analysis by a group of professional resource managers and local experts, drawing from local knowledge and best available science and analyses for a particular basin, watershed, or marine area.
- Develop a self-sustaining HCCC ILF Program that identifies, prioritizes, and completes mitigation projects that collectively produce "no net loss" of aquatic functions and values at appropriate scales (e.g. drift cell, assessment and mitigation unit (AMU), sub-basin, watershed, and service areas) over time, and strives for "net resource gains". Provide an effective and transparent accounting structure for collecting in-lieu fees, disbursing project funds, and compliance reporting, as required under 33 CFR § 332.8.
- Work in an efficient and transparent manner with the IRT, co-chaired by the Corps and Ecology, to review, analyze, and implement mitigation projects and enact amendments to the HCCC ILF Program Instrument.
- Ensure "difficult-to-replace" habitats are conserved and restored by working with the IRT and with regulatory agencies at local, state, federal, and tribal levels.

The HCCC has four mitigation strategies to accomplish its goal and objectives. These strategies are to: restore aquatic resource functions; enhance existing aquatic resources; establish new functions where they no longer exist; and, under certain circumstances, preserve intact or fully functioning aquatic resource functions. Compensatory mitigation can take one of these four forms, in order of preference:

- a. Restoration: returning a damaged aquatic resource to its original condition through restoration of habitat forming processes;
- b. Creation: converting an area that has no significant aquatic resources into an aquatic resource area with all of the physical and biological characteristics to replace the area lost or damaged;
- c. Enhancement: making changes or improvements to an aquatic resource to replace the functions or values performed by the resources lost or damaged; and
- d. Preservation: protecting aquatic resources in an area that is equivalent to the area damaged, and that might otherwise be impacted or lost.

The mitigation strategy selected for each permitted impact will be based upon an assessment of type and degree of disturbance at the landscape and/or drift cell scales. Restoration generally will be the first mitigation option considered because the likelihood of success is greater and the impacts to potential ecologically important uplands are reduced compared to enhancement or creation. Restoration also has potential to produce more substantial gains in aquatic resource functions compared to enhancement and preservation.

Hood Canal ILF Operating and Service Area Applicable to this Project

The operating area for the Hood Canal ILF Program encompasses those portions of Water Resource Inventory Area 15 draining to Hood Canal. This freshwater Service Area generally includes areas landward of the marine riparian zone including freshwater and estuarine wetlands and streams up to and excluding any National Park or National Forest Lands.

The HCCC ILF Program, within the WRIA 15 Service Area, was awarded 20 advanced credits each for water quality, hydrology and habitat. Currently (September 2013), the program has a balance of 17.6 credits each for water quality and hydrology, and 16.4 credits for habitat. More information on this program can be found on the HCCC website: <http://hccc.wa.gov/>.

3. Wetland Functions Provided by the ILF program.

All projected compensatory mitigation needs for all functions and values lost as a result of the proposed action can be fulfilled by the approved HCCC ILF program. The ILF program is capable of providing a mitigation project(s) to replace wetland functions lost in the service area watershed. Roster sites and site selection will ensure projects are compatible with the functions lost in the environment. The evaluation of the impact site provides sufficient information to analyze the requirements for the replacement of functions. Freshwater wetlands functions lost will be replaced in accordance with the Western Washington credit/debit methodology and ensure replacement of all freshwater wetland functions.

The program is currently reviewing and developing a list of Roster areas that could be utilized as receiving sites. For the SR 3 BAWSI program staff are pursuing mitigation opportunities within the north Belfair area, specifically within the Irene Creek drainage, a tributary to the Union River. Important wetlands occur within the area that provide water quality, hydrology and habitat functions. These wetlands also have important societal value and are stream-based wetlands. The wetland will provide flood storage, water quality (nutrient/ toxic removal), and habitat for fish, amphibians, birds and mammals. The targeted mitigation may provide the majority of the credits through preservation as they are highly functioning intact wetlands that are at threat. However, some credits will be generated through restoration, particularly for water quality (removal of non-functioning or lack of appropriate residential septic system) and impaired buffers (encroachment and invasive species).

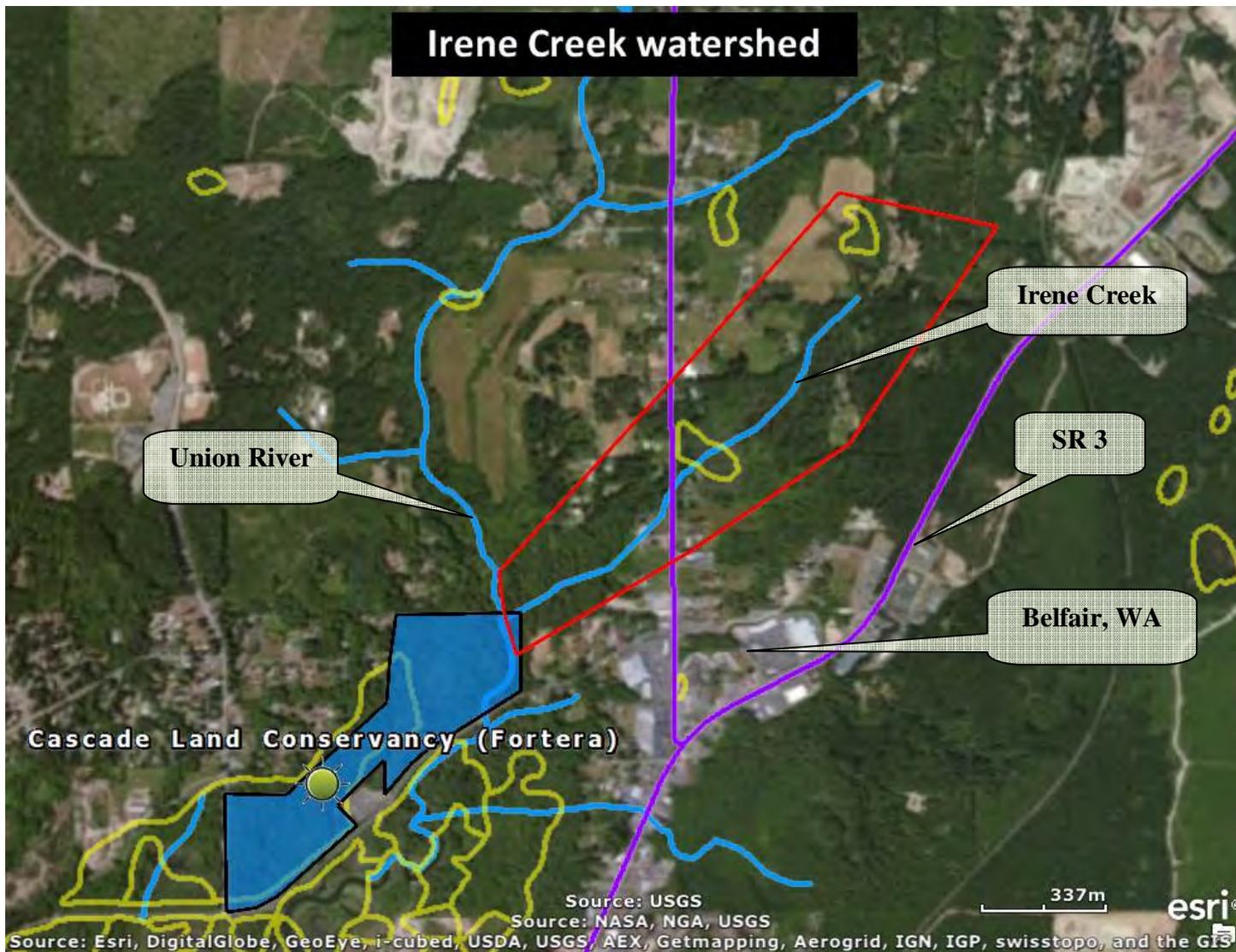


Figure 3. Anticipated wetland mitigation area in the Irene Creek watershed (outlined in red). Yellow polygons indicate NWI mapped wetlands. Blue polygon indicates lands in conservation status.

4. Aquatic Resource Functions unlikely to be mitigated by projects implemented through the In-lieu Fee Program

There are no aquatic resource functions unlikely to be mitigated by project implemented through the In-Lieu-Fee Program.

5. Proposed Use of ILF Credits

Mitigation Requirements and Debits associated with the proposed action were calculated using the *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington* or Ecology Publication #04-06-025, *Washington State Wetland Rating System for Western Washington* (Hruby 2012). Table 12 represents WSDOT’s mitigation proposal for the proposed action intended. ILF credits will be used to offset debits from the proposed action.

Table 12 ILF Credits Proposed for Use by Impact Project

Wetland	Total Wetland Area (acres)	Permanently Impacted Wetland Area (acres) ¹	Ecology Rating	Water Quality Acre-Points	Hydrology Acre-Points	Habitat Acre-Points	Credit Needed (acre pts)	Credit Proposed (acre pts)
C	0.02	0.01	IV	0.21	0.18	0.09	0.48	0.48
E	0.02	0.02	III	0.42	0.42	0.18	1.02	1.02
F	0.01	0.01	III	0.32	0.28	0.12	0.72	0.72
N	Unknwn*	0.04	II	1.12	0.64	1.28	3.04	3.04
TOTAL				2.07	1.52	1.67	5.26	5.26

*Wetland extends a great distance outside project area. Total wetland area is unknown.

6. Credit Purchase or Transfer Timing

The SR 3 BAWSI project is currently obtaining permits with the regulatory agencies. It is anticipated that permits for the project will be obtained in late 2013. The credit sale from the HCCC ILF Program can occur as soon as the regulatory agencies have reviewed and approved the assessment of the project impacts and the needed credits.

References

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- Hruby, T. 2012. Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington, Final Report, March 2012. Washington State Department of Ecology publication #10-06-11. <https://fortress.wa.gov/ecy/publications/summarypages/1006011.html>
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Appendix A — Wetland Rating Forms

Wetland name or number Wetland C _____

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): SR 3 Belfair Area Safety Improvements C _____ Date of site visit: 11/20/07 _____

Rated by: P. Dreisbach _____ Trained by Ecology? Yes No _____

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I _____ II _____ III _____ IV

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

Score for Water Quality Functions	0
Score for Hydrologic Functions	18
Score for Habitat Functions	10
TOTAL Score for Functions	28

Category based on SPECIAL CHARACTERISTICS of Wetland I _____ II _____ Does not apply

Final Category (choose the “highest” category from above”) IV

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	X
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	<input type="checkbox"/>

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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

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

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 freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

	<p>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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">4 structures or morepoints = 4</td> <td style="width: 50%; border: none;">Map of Cowardin vegetation classes</td> </tr> <tr> <td style="border: none;">2 structurespoints = 1</td> <td style="border: none;">3 structurespoints = 2</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">1 structurepoints = 0</td> </tr> </table>	4 structures or morepoints = 4	Map of Cowardin vegetation classes	2 structurespoints = 1	3 structurespoints = 2		1 structurepoints = 0	0										
4 structures or morepoints = 4	Map of Cowardin vegetation classes																	
2 structurespoints = 1	3 structurespoints = 2																	
	1 structurepoints = 0																	
	<p>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).</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input type="checkbox"/> Permanently flooded or inundated</td> <td style="width: 50%; border: none;">4 or more types present points = 3</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td style="border: none;">3 or more types present points = 2</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Occasionally flooded or inundated</td> <td style="border: none;">2 types present points = 1</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Saturated only</td> <td style="border: none;">1 type present points = 0</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Lake-fringe wetland = 2 points</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Freshwater tidal wetland = 2 points</td> <td style="border: none;"></td> </tr> </table> <p style="text-align: right;">Map of hydroperiods</p>	<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 or more types present points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present points = 1	<input checked="" type="checkbox"/> Saturated only	1 type present points = 0	<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland		<input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland		<input type="checkbox"/> Lake-fringe wetland = 2 points		<input type="checkbox"/> Freshwater tidal wetland = 2 points		2
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3																	
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 or more types present points = 2																	
<input type="checkbox"/> Occasionally flooded or inundated	2 types present points = 1																	
<input checked="" type="checkbox"/> Saturated only	1 type present points = 0																	
<input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland																		
<input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland																		
<input type="checkbox"/> Lake-fringe wetland = 2 points																		
<input type="checkbox"/> Freshwater tidal wetland = 2 points																		
	<p>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.</p> <p style="text-align: right;">If you counted: > 19 speciespoints = 2 5 – 19 speciespoints = 1 < 5 speciespoints = 0</p> <p>List species below if you want to: _____ _____ _____</p>	0																
	<p>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.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  None = 0 points </div> <div style="text-align: center;">  Low = 1 point </div> <div style="text-align: center;">  Moderate = 2 points </div> <div style="text-align: center;">  High = 3 points </div> </div> <p style="text-align: center;">[riparian braided channels]</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> 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. </div>	1																
	<p>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.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> 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) <input type="checkbox"/> 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) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants <p><i>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	1																
	<p>H 1 TOTAL Score – potential for providing habitat Add the points in the column above</p>	4																

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)						
	<p>H 2.1 Buffers (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)... points = 5</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK..... points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer..... points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input checked="" type="checkbox"/> Buffer does not meet any of the criteria above..... points = 1</p> <p style="text-align: right;">Aerial photo showing buffers</p>	1						
	<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;">YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;">YES = 2 points (go to H 2.3) NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">• Within 5 mi (8km) of a brackish or salt water estuary OR</td> <td></td> </tr> <tr> <td style="padding: 2px;">• Within 3 miles of a large field or pasture (> 40 acres) OR</td> <td style="text-align: right; padding: 2px;">YES = 1 point</td> </tr> <tr> <td style="padding: 2px;">• Within 1 mile of a lake greater than 20 acres?</td> <td style="text-align: right; padding: 2px;">NO = 0 points</td> </tr> </table>	• 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	• Within 1 mile of a lake greater than 20 acres?	NO = 0 points	1
• 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							
• Within 1 mile of a lake greater than 20 acres?	NO = 0 points							

Comments:

<p>H 2.3</p>	<p>Near or adjacent to other priority habitats listed by WDFW (see p. 82): Which of the following priority habitats are within 330 ft. (100m) of the wetland? <i>NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.</i></p> <p><input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Old-growth 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) > 81cm (32 in) dbh or > 200 years of age.</p> <p><input type="checkbox"/> Mature forests: Stands with average diameters exceeding 53cm (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.</p> <p><input type="checkbox"/> Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).</p> <p>If wetland has 3 or more priority habitats = 4 points If wetland has 1 priority habit... = 1 point If wetland has 2 priority habitats = 3 points 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).</p>	<p>1</p>
<p>H 2.4</p>	<p>Wetland Landscape: <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 development points = 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..... points = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile..... points = 3 • There is at least 1 wetland within 1/2 mile..... points = 2 • There are no wetlands within 1/2 mile points = 0 	<p>3</p>
<p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>		<p>6</p>
<p style="text-align: right;"><i>TOTAL for H-1 from page 8</i></p>		<p>4</p>
<p>◆ Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>		<p>10</p>

Comments:

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	<p>Estuarine wetlands? (see p.86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO</p>
	<p>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? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = go to SC 1.2</p>
	<p>SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If 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 <i>Spartina</i> 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 <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>
SC2	<p>Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>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.)</p> <p><input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> NO</p> <p>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?</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland</p>
SC3	<p>Bogs (see p. 87)</p> <p>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. <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> NO = go to question 2</p> <p>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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> NO = is not a bog for purpose of rating</p> <p>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)?</p> <p><input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> NO = go to question 4</p> <p>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.</p> <p>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)?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating</p>

SC4	<p>Forested Wetlands (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p>	<p>Cat. I <input type="checkbox"/></p>
SC5	<p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p>	<p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p>
SC6	<p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • 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 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input checked="" type="checkbox"/> NO = go to SC 6.2</p> <p>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?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p>
◆	<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	<p>_____</p>

Comments: _____

Wetland name or number Wetland E

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): SR 3 Belfair Area Safety Improvements E Date of site visit: 11/20/07

Rated by: P. Dreisbach Trained by Ecology? Yes X No

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

Score for Water Quality Functions	10
Score for Hydrologic Functions	16
Score for Habitat Functions	8
TOTAL Score for Functions	34

Category based on SPECIAL CHARACTERISTICS of Wetland I II Does not apply **X**

Final Category (choose the “highest” category from above)

III

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	
Natural Heritage Wetland		Riverine	X
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 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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

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

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 freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

	<p>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.</p> <p><input type="checkbox"/> Aquatic Bed <input checked="" type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input type="checkbox"/> Forested (areas where trees have > 30% cover)</p> <p>If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have:</p> <p>4 structures or morepoints = 4 3 structurespoints = 2 2 structurespoints = 1</p> <p style="text-align: right;">Map of Cowardin vegetation classes 3 structurespoints = 2 1 structurepoints = 0</p>	0
	<p>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).</p> <p><input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input checked="" type="checkbox"/> Saturated only <input checked="" type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland= 2 points <input type="checkbox"/> Freshwater tidal wetland.....= 2 points</p> <p style="text-align: right;">Map 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</p>	2
	<p>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.</p> <p style="text-align: right;">If you counted: > 19 speciespoints = 2 5 – 19 speciespoints = 1 < 5 speciespoints = 0</p> <p>List species below if you want to: _____ _____ _____</p>	0
	<p>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.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  None = 0 points </div> <div style="text-align: center;">  Low = 1 point </div> <div style="text-align: center;">  Moderate = 2 points </div> <div style="text-align: center;">  High = 3 points </div> </div> <p style="text-align: right;">Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".</p> <p style="text-align: right;">Use map of Cowardin classes.</p> <p style="text-align: center;">[riparian braided channels]</p>	1
	<p>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.</p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> 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) <input type="checkbox"/> 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) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> 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.</p>	1
	<p>H 1 TOTAL Score – potential for providing habitat</p>	4

	<p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW (see p. 82):</u> Which of the following priority habitats are within 330 ft. (100m) of the wetland? <i>NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.</i></p> <p>___ Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p>___ Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)</p> <p>___ Cliffs: Greater than 7.6m (25 ft) high and occurring below 5000 ft.</p> <p>___ Old-growth 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) > 81cm (32 in) dbh or > 200 years of age.</p> <p>___ Mature forests: Stands with average diameters exceeding 53cm (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.</p> <p>___ Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where greases and/or forbs form the natural climax plant community.</p> <p>___ Talus: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p>___ Caves: A naturally occurring cavity, recess, void, or system of interconnected passages.</p> <p>___ Oregon white Oak: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p>___ Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p>___ Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p>___ Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).</p> <p>If wetland has 3 or more priority habitats = 4 points If wetland has 1 priority habit... = 1 point If wetland has 2 priority habitats = 3 points 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).</p>	0
	<p>H 2.4 <u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 development points = 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 points = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 • There is at least 1 wetland within 1/2 mile points = 2 • There are no wetlands within 1/2 mile points = 0 	3
	<p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>	4
	<p><i>TOTAL for H 1 from page 8</i></p>	4
◆	<p>Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>	8

Comments:

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	<p>Estuarine wetlands? (see p.86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO</p>	
	<p>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? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I <input type="checkbox"/></p>
	<p>SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If 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 <i>Spartina</i> 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 <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> <p>Dual Rating I/II <input type="checkbox"/></p>
SC2	<p>Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>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.)</p> <p><input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> NO</p> <p>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?</p> <p><input type="checkbox"/> YES = Category 1 <input checked="" type="checkbox"/> NO not a Heritage Wetland</p>	<p>Cat I <input type="checkbox"/></p>
SC3	<p>Bogs (see p. 87)</p> <p>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. <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> NO = go to question 2</p> <p>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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> NO = is not a bog for purpose of rating</p> <p>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)?</p> <p><input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> NO = go to question 4</p> <p>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.</p> <p>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)?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating</p>	<p>Cat. I <input type="checkbox"/></p>

SC4	<p>Forested Wetlands (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p>	<p style="text-align: right;">Cat. I <input type="checkbox"/></p>
SC5	<p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p>	<p style="text-align: right;">Cat. I <input type="checkbox"/> Cat. II <input type="checkbox"/></p>
SC6	<p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • 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 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input checked="" type="checkbox"/> NO = go to SC 6.2</p> <p>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?</p> <p><input type="checkbox"/> YES = Category III</p>	<p style="text-align: right;">Cat. II <input type="checkbox"/> Cat. III <input type="checkbox"/></p>
◆	<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	<p style="text-align: right;">_____</p>

Comments: _____

Wetland name or number Wetland F _____

WETLAND RATING FORM – WESTERN WASHINGTON
Version 2 – Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Belfair Area Safety Improvements – F _____ Date of site visit: 6/01/12 _____

Rated by: P. Dreisbach _____ Trained by Ecology? Yes No

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I _____ II _____ III _____ IV _____

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

Score for Water Quality Functions	22
Score for Hydrologic Functions	16
Score for Habitat Functions	8
TOTAL Score for Functions	46

Category based on SPECIAL CHARACTERISTICS of Wetland I _____ II _____ Does not apply _____

Final Category (choose the “highest” category from above”) III

Summary of basic information about the wetland unit.

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

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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> 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. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

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

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

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**

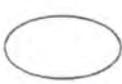
6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time of the year. This means that any outlet, if present is higher than the interior of the wetland.
 NO - go to 7 YES - The wetland class is **Depressional**

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
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Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

HYDROLOGIC FUNCTIONS – Indicators that wetland unit functions to reduce flooding and stream degradation.		(see p.46)
D 3	Does the wetland have the <u>potential</u> to reduce flooding and erosion?	
D 3.1	Characteristics of surface water flows out of the wetland unit <ul style="list-style-type: none"> • 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 ditchpoints = 1 (If ditch is not permanently flowing treat unit as “intermittently flowing”) • Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>).....points = 0 	2
D 3.2	Depth of storage during wet periods. <i>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).</i> <ul style="list-style-type: none"> • Marks of ponding are 3 ft. or more above the surface or bottom of the outletpoints = 7 • The wetland is a “headwater” wetlandpoints = 5 • Marks of ponding between 2 ft. to < 3 ft. from surface or bottom of outletpoints = 5 • 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.....points = 0 	3
D 3.3	Contribution of wetland unit to storage in the watershed: <i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i> <ul style="list-style-type: none"> • 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 unitpoints = 3 • The area of the basin is more than 100 times the area of the unitpoints = 0 • Entire unit is in the FLATS class.....points = 5 	3
Total for D 3		<i>Add the points in the boxes above</i>
		8
D 4	Does the wetland have the <u>opportunity</u> to reduce flooding and erosion?	
Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. <i>Note which of the following indicators of opportunity apply.</i> <ul style="list-style-type: none"> <input type="checkbox"/> Wetland is in a headwater of a river or stream that has flooding problems. <input checked="" type="checkbox"/> Wetland drains to a river or stream that has flooding problems <input type="checkbox"/> Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <input type="checkbox"/> Other _____ 		
YES multiplier is 2 NO multiplier is 1		2
◆ TOTAL – Hydrologic Functions		16
		<i>Multiply the score from D3 by D4; then add score to table on p. 1</i>

<i>These questions apply to wetlands of all HGM classes.</i> HABITAT FUNCTIONS – Indicators that wetland functions to provide important habitat.		Points (only 1 score per box)										
H 1	Does the wetland have the potential to provide habitat for many species?											
H 1.1	<p><u>Vegetation structure</u> (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.</p> <p> <input type="checkbox"/> Aquatic Bed <input type="checkbox"/> Emergent plants <input type="checkbox"/> Scrub/shrub (areas where shrubs have > 30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) If the unit has a forested class check if: <input type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon. Add the number of vegetation types that qualify. If you have: <table style="display: inline-table; vertical-align: middle;"> <tr> <td>4 structures or more</td> <td>points = 4</td> <td>Map of Cowardin vegetation classes</td> <td>3 structures</td> <td>points = 2</td> </tr> <tr> <td>2 structures</td> <td>points = 1</td> <td></td> <td>1 structure</td> <td>points = 0</td> </tr> </table> </p>	4 structures or more	points = 4	Map of Cowardin vegetation classes	3 structures	points = 2	2 structures	points = 1		1 structure	points = 0	0
4 structures or more	points = 4	Map of Cowardin vegetation classes	3 structures	points = 2								
2 structures	points = 1		1 structure	points = 0								
H 1.2	<p><u>Hydroperiods</u> (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).</p> <p> <input type="checkbox"/> Permanently flooded or inundated <input checked="" type="checkbox"/> Seasonally flooded or inundated <input type="checkbox"/> Occasionally flooded or inundated <input type="checkbox"/> Saturated only <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland <input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland..... = 2 points </p> <p style="text-align: right;">Map of hydroperiods</p> <table style="display: inline-table; vertical-align: middle;"> <tr> <td>4 or more types present</td> <td>points = 3</td> </tr> <tr> <td>3 or more types present</td> <td>points = 2</td> </tr> <tr> <td>2 types present</td> <td>points = 1</td> </tr> <tr> <td>1 type present.....</td> <td>points = 0</td> </tr> </table>	4 or more types present	points = 3	3 or more types present	points = 2	2 types present	points = 1	1 type present.....	points = 0	0		
4 or more types present	points = 3											
3 or more types present	points = 2											
2 types present	points = 1											
1 type present.....	points = 0											
H 1.3	<p><u>Richness of Plant Species</u> (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: <table style="display: inline-table; vertical-align: middle;"> <tr> <td>> 19 species</td> <td>points = 2</td> </tr> <tr> <td>5 – 19 species</td> <td>points = 1</td> </tr> <tr> <td>< 5 species.....</td> <td>points = 0</td> </tr> </table> List species below if you want to: _____ _____ _____ </p>	> 19 species	points = 2	5 – 19 species	points = 1	< 5 species.....	points = 0	1				
> 19 species	points = 2											
5 – 19 species	points = 1											
< 5 species.....	points = 0											
H 1.4	<p><u>Interspersion of Habitats</u> (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.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  None = 0 points </div> <div style="text-align: center;">  Low = 1 point </div> <div style="text-align: center;">  Moderate = 2 points </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  High = 3 points </div> <div style="text-align: center;">  [riparian braided channels] </div> </div> <p style="margin-top: 20px;">Note: If you have 4 or more classes or 3 vegetation classes and open water, the rating is always "high".</p> <p style="text-align: right;">Use map of Cowardin classes.</p>	1										
H 1.5	<p><u>Special Habitat Features</u> (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.</p> <p> <input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft. long) <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> 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) <input type="checkbox"/> 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) <input type="checkbox"/> 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) <input checked="" type="checkbox"/> 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. </p>	1										
H 1 TOTAL Score – potential for providing habitat		Add the points in the column above	3									

H 2.3	<p><u>Near or adjacent to other priority habitats listed by WDFW (see p. 82):</u> Which of the following priority habitats are within 330 ft. (100m) of the wetland? <i>NOTE: the connections do not have to be relatively undisturbed. These are DFW definitions. Check with your local DFW biologist if there are any questions.</i></p> <p><input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres)</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Old-growth 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) > 81cm (32 in) dbh or > 200 years of age.</p> <p><input type="checkbox"/> Mature forests: Stands with average diameters exceeding 53cm (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.</p> <p><input type="checkbox"/> Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 – 2.0m (0.5 – 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages.</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5 ppt. during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).</p> <p>If wetland has 3 or more priority habitats = 4 points If wetland has 1 priority habit... = 1 point If wetland has 2 priority habitats = 3 points 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).</p>	1
H 2.4	<p><u>Wetland Landscape:</u> <i>Choose the one description of the landscape around the wetland that best fits (see p. 84)</i></p> <ul style="list-style-type: none"> • 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 development points = 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..... points = 3 • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile..... points = 3 • There is at least 1 wetland within 1/2 mile points = 2 • There are no wetlands within 1/2 mile points = 0 	3
<p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>		5
<p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p>		3
<p>◆ Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>		8

Comments:

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	<p>Estuarine wetlands? (see p. 86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO</p>	
	<p>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? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I <input type="checkbox"/></p>
	<p>SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If 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 <i>Spartina</i> 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 <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> <p>Dual Rating I/II <input type="checkbox"/></p>
SC2	<p>Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>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.)</p> <p><input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> NO</p> <p>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?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO not a Heritage Wetland</p>	<p>Cat I <input type="checkbox"/></p>
SC3	<p>Bogs (see p. 87)</p> <p>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. <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p>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?) <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> NO = go to question 2</p> <p>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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> NO = is not a bog for purpose of rating</p> <p>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)?</p> <p><input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> NO = go to question 4</p> <p>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.</p> <p>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)?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating</p>	<p>Cat. I <input type="checkbox"/></p>

SC4	<p>Forested Wetlands (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p>	<p>Cat. I <input type="checkbox"/></p>
SC5	<p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p>	<p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p>
SC6	<p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • 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 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input checked="" type="checkbox"/> NO = go to SC 6.2</p> <p>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?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p>
◆	<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	<p>_____</p>

Comments: _____

Wetland name or number Wetland N _____

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): SR 3 BAWSI – Wetland N

Date of site visit: 5/12/10

Rated by: P. Dreisbach Trained by Ecology? Yes No

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland: I II III IV

Category I = Score > 70	Score for Water Quality Functions	22
Category II = Score 51 - 69	Score for Hydrologic Functions	10
Category III = Score 30 – 50	Score for Habitat Functions	27
Category IV = Score < 30	TOTAL Score for Functions	60

Category based on SPECIAL CHARACTERISTICS of Wetland I II Does not apply

Final Category (choose the “highest” category from above”) **II**

Summary of basic information about the wetland unit.

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine	<input type="checkbox"/>	Depressional	<input type="checkbox"/>
Natural Heritage Wetland	<input type="checkbox"/>	Riverine	<input type="checkbox"/>
Bog	<input type="checkbox"/>	Lake-fringe	<input type="checkbox"/>
Mature Forest	<input type="checkbox"/>	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	<input type="checkbox"/>	Flats	<input type="checkbox"/>
Coastal Lagoon	<input type="checkbox"/>	Freshwater Tidal	<input type="checkbox"/>
Interdunal	<input type="checkbox"/>		<input type="checkbox"/>
None of the above	<input checked="" type="checkbox"/>	Check if unit has multiple HGM classes present	<input type="checkbox"/>

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. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state or federal database.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, “documented” means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> 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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

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 freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

Wetland name or number Wetland N _____

S Slope Wetlands		Points
WATER QUALITY FUNCTIONS – Indicators that wetland functions to improve water quality.		(only 1 score per box) (see p.64)
S 1	Does the wetland have the potential to improve water quality?	
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 <input type="checkbox"/> • Slope is 1% - 2% points = 2 <input checked="" type="checkbox"/> • Slope is 2% - 5% points = 1 <input type="checkbox"/> • Slope is greater than 5% points = 0 <input type="checkbox"/>	2
S 1.2	The soil 2 inches below the surface (or duff layer) is clay, organic (Use NRCS definitions). <input checked="" type="checkbox"/> YES = 3 points <input type="checkbox"/> NO = 0 points	3
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 points = 6 <input checked="" type="checkbox"/> • Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 <input type="checkbox"/> • Dense, woody, vegetation > 1/2 of area points = 2 <input type="checkbox"/> • Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 <input type="checkbox"/> • Does not meet any of the criteria above for vegetation points = 0 <input type="checkbox"/> Aerial photo or map with vegetation polygons	Figure <input type="checkbox"/> 6
Total for S 1		Add the points in the boxes above 11
S 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. <input type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields, logging, or orchards within 150 ft. of wetland <input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft. upslope of wetland <input checked="" type="checkbox"/> Other construction activity upgradient <input checked="" type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	(see p. 67) Multiplier 2
♦ TOTAL – Water Quality Functions Multiply the score from S1 by S2; then add score to table on p. 1		22
HYDROLOGIC FUNCTIONS – Indicators that wetland functions to reduce flooding and stream erosion.		
S 3	Does the wetland have the potential 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 <input type="checkbox"/> • Dense, uncut, rigid vegetation > 1/2 area of wetland points = 3 <input checked="" type="checkbox"/> • Dense, uncut, rigid vegetation > 1/4 area points = 1 <input type="checkbox"/> • More than 1/4 of area is grazed, mowed, tilled, or vegetation is not rigid points = 0 <input type="checkbox"/>	3
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. <input checked="" type="checkbox"/> YES = 2 points <input type="checkbox"/> NO = 0 points	2
Add the points in the boxes above		5
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. <input checked="" type="checkbox"/> Wetland has surface runoff that drains to a river or stream that has flooding problems <input type="checkbox"/> 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) <input type="checkbox"/> YES multiplier is 2 <input type="checkbox"/> NO multiplier is 1	(see p. 70) Multiplier 2
♦ TOTAL – Hydrologic Functions Multiply the score from S3 by S4; then add score to table on p. 1		10

Comments: _____

H 2	Does the wetland have the <u>opportunity</u> to provide habitat for many species?	(only 1 score per box)
	<p>H 2.1 <u>Buffers</u> (see P. 80): <i>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".</i></p> <p><input type="checkbox"/> 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)... points = 5</p> <p><input checked="" type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference..... points = 4</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 95% circumference points = 4</p> <p><input type="checkbox"/> 100m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference..... points = 3</p> <p><input type="checkbox"/> 50m (170 ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference points = 3</p> <p>If buffer does not meet any of the criteria above:</p> <p><input type="checkbox"/> No paved areas (except paved trails) or buildings within 25m (80 ft) of wetland > 95% circumference. Light to moderate grazing or lawns are OK points = 2</p> <p><input type="checkbox"/> No paved areas of buildings within 50m of wetland for > 50% circumference. Light to moderate grazing or lawns are OK..... points = 2</p> <p><input type="checkbox"/> Heavy grazing in buffer..... points = 1</p> <p><input type="checkbox"/> Vegetated buffers are < 2m wide (6.6 ft) for more than 95% circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) points = 0</p> <p><input type="checkbox"/> Buffer does not meet any of the criteria above..... points = 1</p> <p style="text-align: right;">Aerial photo showing buffers</p>	<p>Figure <input type="checkbox"/></p> <p style="text-align: center;">4</p>
	<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>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? (<i>Dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.</i>)</p> <p style="text-align: center;"><input checked="" type="checkbox"/> YES = 4 points (go to H 2.3) <input type="checkbox"/> NO = go to H 2.2.2</p> <p>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 Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?</p> <p style="text-align: center;"><input type="checkbox"/> YES = 2 points (go to H 2.3) <input type="checkbox"/> NO = go to H 2.2.3</p> <p>H. 2.2.3 Is the wetland:</p> <ul style="list-style-type: none"> • 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? <p style="text-align: right;"><input type="checkbox"/> YES = 1 point <input type="checkbox"/> NO = 0 points</p>	<p style="text-align: center;">4</p>

Comments: _____

H 2.3	<p><u>Near or adjacent to other priority habitats listed by WDFW</u> (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)</p> <p>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></p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p> <p style="text-align: right;">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</p>	3
<p>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)</p>		
H 2.4	<p><u>Wetland Landscape:</u> Choose the one description of the landscape around the wetland that best fits (see p. 84)</p> <ul style="list-style-type: none"> • 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 development points = 5 <input checked="" type="checkbox"/> • 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 <input type="checkbox"/> • There are at least 3 other wetlands within 1/2 mile, BUT the connections between them are disturbed points = 3 <input type="checkbox"/> • The wetland fringe on a lake with disturbance and there are 3 other lake-fringe wetlands within 1/2 mile points = 3 <input type="checkbox"/> • There is at least 1 wetland within 1/2 mile points = 2 <input type="checkbox"/> • There are no wetlands within 1/2 mile points = 0 <input type="checkbox"/> 	5
<p>H 2 TOTAL Score – opportunity for providing habitat <i>Add the scores from H2.1, H2.2, H2.3, H2.4</i></p>		16
<p style="text-align: right;"><i>TOTAL for H 1 from page 8</i></p>		11
<p>◆ Total Score for Habitat Functions <i>Add the points for H 1 and H 2; then record the result on p. 1</i></p>		27
<p>Comments: _____</p>		

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	<p>Estuarine wetlands? (see p.86)</p> <p>Does the wetland unit meet the following criteria for Estuarine wetlands?</p> <p><input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt.</p> <p><input type="checkbox"/> YES = Go to SC 1.1 <input checked="" type="checkbox"/> NO</p>	
	<p>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? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = go to SC 1.2</p>	<p>Cat. I <input type="checkbox"/></p>
	<p>SC 1.2 Is the wetland at least 1 acre in size and meets at least two of the following conditions?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If 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 <i>Spartina</i> 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 <i>Spartina</i> in determining the size threshold of 1 acre.</p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.</p>	<p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p> <p>Dual Rating I/II <input type="checkbox"/></p>
SC2	<p>Natural Heritage Wetlands (see p. 87)</p> <p>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.</p> <p>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.)</p> <p><input type="checkbox"/> S/T/R information from Appendix D <input type="checkbox"/> or accessed from WNHP/DNR web site</p> <p><input type="checkbox"/> YES Contact WNHP/DNR (see p. 79) and go to SC 2.2 <input checked="" type="checkbox"/> NO</p> <p>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?</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO not a Heritage Wetland</p>	<p>Cat I <input type="checkbox"/></p>
SC3	<p>Bogs (see p. 87)</p> <p>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. <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <ol style="list-style-type: none"> 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)? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES = go to question 3 <input checked="" type="checkbox"/> 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)? <input type="checkbox"/> YES = Is a bog for purpose of rating <input checked="" type="checkbox"/> NO = go to question 4 <p>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.</p> <ol style="list-style-type: none"> 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)? <input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Is not a bog for purpose of rating 	<p>Cat. I <input type="checkbox"/></p>

SC4	<p>Forested Wetlands (see p. 90)</p> <p>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? <i>If you answer yes you will still need to rate the wetland based on its function.</i></p> <p><input type="checkbox"/> 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).</p> <p>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.</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = not a forested wetland with special characteristics</p>	<p>Cat. I <input type="checkbox"/></p>
SC5	<p>Wetlands in Coastal Lagoons (see p. 91)</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks.</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom.</i>)</p> <p><input type="checkbox"/> YES = Go to SC 5.1 <input checked="" type="checkbox"/> NO not a wetland in a coastal lagoon</p> <p>SC 5.1 Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> 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).</p> <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 acre (4350 square ft.)</p> <p><input type="checkbox"/> YES = Category I <input checked="" type="checkbox"/> NO = Category II</p>	<p style="background-color: #ADD8E6;"> </p> <p>Cat. I <input type="checkbox"/></p> <p>Cat. II <input type="checkbox"/></p>
SC6	<p>Interdunal Wetlands (see p. 93)</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)?</p> <p><input type="checkbox"/> YES = Go to SC 6.1 <input checked="" type="checkbox"/> NO not an interdunal wetland for rating</p> <p><i>If you answer yes you will still need to rate the wetland based on its functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <ul style="list-style-type: none"> • 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 <p>SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is one acre or larger?</p> <p><input type="checkbox"/> YES = Category II <input checked="" type="checkbox"/> NO = go to SC 6.2</p> <p>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?</p> <p><input type="checkbox"/> YES = Category III</p>	<p>Cat. II <input type="checkbox"/></p> <p>Cat. III <input type="checkbox"/></p>
◆	<p>Category of wetland based on Special Characteristics</p> <p>Choose the "highest" rating if wetland falls into several categories, and record on p. 1.</p> <p>If you answered NO for all types enter "Not Applicable" on p. 1</p>	<p>_____</p>

Comments: _____

Appendix B — Credit-Debit Forms

"DEBIT" WORKSHEET

Wetland unit to be altered: WETLAND C Date 2-6-12

Use the following tables to calculate the Debits for the impact site. Use a separate worksheet for each wetland unit being altered. In addition, you will need to calculate the debits separately for forested areas and for emergent/shrub areas. Use the map of Cowardin plant types from question H 1.1 on the Scoring Form to determine the boundaries between forested areas and non-forested areas.

FUNCTION From Scoring Form	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	L	M	L
Rating of Landscape Potential	H	M	L
Rating of Value	H	M	L
Score for Wetland	7	6	3

CALCULATIONS emergent or shrub areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)	7	6	3
Impact - Acres of non-forested areas (same for all functions)	0.01		
Basic mitigation requirement (BMR) = Score for function x acres impacted	0.07	0.06	0.03
Temporal loss factor (TLF) (See table below)	3	3	3
Mitigation required DEBITS = BMR x TLF	.21	.18	.09
CALCULATIONS forested areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)			
Impact - Acres of forest (Create a separate column for each type of forest) Deciduous (D), Evergreen (E), Cat. 1 deciduous (>50%cover) (CD) Cat. 1 evergreen (>50% cover)(CE)	D E CD CE	D E CD CE	D E CD CE
Basic mitigation requirement (BMR) = Score x acres impacted			
Temporal loss factor (TLF) (See table below)			
Mitigation required DEBITS = BMR x TLF			
TOTAL for forested areas (D+E+CD+CE)			

0.48

Temporal Loss Factors:

Timing of Mitigation	Temporal Loss Factor
Advance – At least two years has passed since plantings were completed or one year since “as-built” plans were submitted to regulatory agencies	1.25
Concurrent – Physical alterations at mitigation site are completed within a year of the impacts, but planting may be delayed by up to 2 years if needed to optimize conditions for success.	
For impacts to an emergent or shrub community	1.5
For impacts to a deciduous forested wetland community	2.0
For impacts to an evergreen forested wetland community	2.5
For impacts to a deciduous Category I forested wetland community	3
For impacts to an evergreen Category I forested wetland community	3.5
Delayed - Construction is not completed within one year of impact, but is completed (including plantings if required) within 5 growing seasons of impact.	
For impacts to an emergent or shrub community	3
For impacts to a deciduous forested wetland community	4
For impacts to an evergreen forested wetland community	5
For impacts to a deciduous Category I forested wetland community	6
For impacts to an evergreen Category I forested wetland community	7

NOTE: The ratings, scoring and calculations are valid for only five years because wetlands and their functions will change with time. If delays in the construction of the site are more than 5 years, the mitigation plan will probably have to be re-negotiated and the calculation re-done. This time limit was chosen to be consistent with the validity of wetland delineations as established by the U.S. Army Corps of Engineers.

TOTALS

	Improving Water Quality	Hydrologic	Habitat
DEBITS - Emergent or shrub areas	0.21 Acre-points	0.18 Acre-points	0.09 Acre-points
DEBITS - Forested areas	Acre-points	Acre-points	Acre-points
TOTAL	0.21 Acre-points	0.18 Acre-points	0.09 Acre-points

Wetland name or number C

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): WETLAND C Date of site visit: 8-6-12

Scored by P. DREISBACH
 SEC: ___ TWNSHP: ___ RNGE: ___ Estimated size: 0.02 Aerial photo included? _____

- These scores are for:
- Wetland being altered
 - Mitigation site before mitigation takes place
 - Mitigation site after goals and objectives are met

SUMMARY OF SCORING

FUNCTION	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	L	M	L
Rating of Landscape Potential	H	M	L
Rating of Value	H	M	L
Score Based on Ratings (see table below)	7	6	3

Wetland HGM Class Used for Rating	
Depressional	
Riverine	<input checked="" type="checkbox"/>
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	<input type="checkbox"/>

Scores
 (Order of ratings is not important)

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

NOTE: Form is not complete without the figures requested.
 Put only the highest score for a question in each box of the form, even if more than one indicator applies to the unit. Do NOT add the scores within a question.

Wetland name or number C

HGM Classification of Wetlands in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e., except during floods)?

NO - go to 2

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

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

YES - **Freshwater Tidal Fringe** NO - **Saltwater Tidal Fringe (Estuarine)**

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

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

NO - go to 3

YES - The wetland class is **Flats**

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

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

___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface) at least 20 acres (8 ha) in size;

___ At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO - go to 4

YES - The wetland class is **Lake-fringe** (Lacustrine Fringe)

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

___ 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 type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

NO - go to 5

YES - The wetland class is **Slope**

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

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

The overbank flooding occurs at least once every two years.

Wetland name or number C

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

NO - go to 6

YES - The wetland class is Riverine

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

NO - go to 7

YES - The wetland class is Depressional

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

NO - go to 8

YES - The wetland class is Depressional

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

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

HGM Classes Within the Wetland Unit Being Rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number C

R 3.0 Is the water quality improvement provided by the site valuable to society?	
R 3.1 Is the unit along a stream or river that is on the 303(d) list or on a tributary that drains to one? <i>fecal coliform</i> Yes = 1 No = 0	1
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	1
R 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which unit is found) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	4
Rating of Value: If score is 2 - 4 = H 1 = M 0 = L	H

Record the rating on the first page

Riverine and Freshwater Tidal Fringe Wetlands	
HYDROLOGIC FUNCTIONS - Indicators that site functions to reduce flooding and stream erosion	
Questions R 4.1 and R 4.2 are from Wetland Rating System (Hruby 2004b).	
R 4.0 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	
R 4.1 Characteristics of the overbank storage the unit provides: <i>Provide aerial photo showing average widths</i> Estimate the average width of the wetland unit 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 points = 6 If the ratio is between 5 - <10 points = 4 If the ratio is between 1 - <5 points = 2 If the ratio is < 1 points = 1	Figure __ 2
R 4.2 Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description</i> (polygons need to have >90% cover at person height NOT Cowardin classes): <i>Provide photo or map showing polygons of different plants types</i> Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 Plants do not meet above criteria points = 0	Figure __ 7
Total for R 4 Add the points in the boxes above	9
Rating of Site Potential: If score is 12 - 16 = H 6 - 11 = M 0 - 5 = L	M

Wetland name or number C

R 5.0 Does the landscape have the potential to support the hydrologic functions at the site?		
R 5.1 Is the stream/river adjacent to the unit downcut?	Yes = 0 No = 1	0
R 5.2 Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3 Is the upgradient stream or river controlled by dams?	Yes = 0 No = 1	1
Total for R 5	Add the points in the boxes above	2

Rating of Landscape Potential: If score is
 3 = H
 1 or 2 = M
 0 = L

M

Record the rating on the first page

R 6.0 Are the hydrologic functions provided by the site valuable to society?		
R 6.1 Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of site has surface flooding problems that results in \$\$ loss or loss of natural resources.	points = 2	1
Surface flooding problems are in a sub-basin further down-gradient.	points = 1	
No flooding problems anywhere downstream.	points = 0	
R 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for R 6	Add the points in the boxes above	1

Rating of Value:
 If score is 2 - 4 = H
 1 = M
 0 = L

M

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number C

<p>H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion between Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <p><i>Provide map of Cowardin plant classes (same as H1.1)</i></p> <p>None = 0 points Low = 1 point Moderate = 2 points</p> <p>High = 3 points</p> <p>[riparian braided channels with 2 classes]</p> <p>NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."</p>	<p>Figure_</p> <p>1</p>
<p>H 1.5. Special Habitat Features: Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input type="checkbox"/> Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) within the unit</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging plants extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<p>1</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H 1.1, H 1.2, H 1.3, H 1.4, and H 1.5</p>	<p>4</p>

Rating of Site Potential: If score is

15 - 18 = H
7 - 14 = M
0 - 6 = L

L

Record the rating on the first page

Wetland name or number C

H 2.0 Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 10 % undisturbed habitat + [(% moderate and low intensity land uses)/2] = <u>5%</u> <i>Provide map of land use within 1 km of unit edge</i> If total accessible habitat is:		Figure_
> 1/3 (33.3%) of 1 km circle (~100 hectares or 250 acres)	points = 3	Ø
20 - 33% of 1 km circle	points = 2	
10 - 19% of 1 km circle	points = 1	
<10% of 1 km circle	points = 0	
H 2.2 Undisturbed habitat in 1 km circle around unit. If:		
Undisturbed habitat > 50% of circle	points = 3	Ø
Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	
Undisturbed habitat 10 - 50% and > 3 patches	points = 1	
Undisturbed habitat < 10% of circle	points = 0	
H 2.3 Land use intensity in 1 km circle. If:		
> 50% of circle is high intensity land use	points = (- 2)	- 2
Does not meet criterion above	points = 0	
Total for H 2	Add the points in the boxes above	- 2
Rating of Landscape Potential: If score is 4- 6 = H 1-3 = M < 1 = L		L

Record the rating on the first page

H 3.0 Is the Habitat provided by the site valuable to society?		
H3.1 Does the site provides habitat for species valued in laws, regulations or policies? <i>(choose only the highest score)</i> Site meets ANY of the following criteria:		
<ul style="list-style-type: none"> — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is a "priority area" for an individual WDFW species — It is a Natural Heritage Site as determined by the Department of Natural Resources — It scores 4 on question H2.3 of the wetland rating system — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan 	points = 2	Ø
Site scores 1-3 on question H2.3 of the wetland rating system	points = 1	
Site does not meet any of the criteria above	points = 0	
Rating of Value: If score is 2 = H 1 = M 0 = L		L

Record the rating on the first page

Listing ID:	6963	
Water Body Name:	BELFAIR CREEK	
Water Body Type:	River/Stream	
Parameter:	Fecal Coliform	2008 CATEGORY: 4A
Sample Medium:	Water	2004 Category: 4A
WRIA:	15 - Kitsap	1998 303(d) List?: N
		1996 303(d) List?: N
County:	Mason	
Puget Sound Action Area:	Hood Canal	
Township Range Section:	23.0N - 01.0W - 29	
LLID:	1228326474519	
Lower Rte:	0.000	Upper Rte: 1.021
WASWIS:	GE71NZ	
Lower Rte:	0.000	Upper Rte: 0.978

2008 Basis

*** 2008 Basis Statement (carried forward from 2004) ***

Ward et al. (2001) station UR6BFAIR (LOWER BELFAIR CREEK NEAR BELFAIR) shows the geometric mean of 844.7 exceeds the criterion and that 100% of the samples exceeds the percentile criterion from 6 samples collected during 1999.

Mason County unpublished data (submitted by Wayne Clifford on 8/91) show excursions beyond the criterion for both the geometric mean and the percentile criterion at station S13 between 8/1/90 and 8/1/91.

Remarks

Belfair Creek is a tributary to the Union River and is part of the Union River TMDL. Approved 8/2/02.

"DEBIT" WORKSHEET

Wetland unit to be altered: WETLAND E Date 8-6-12

Use the following tables to calculate the Debits for the impact site. Use a separate worksheet for each wetland unit being altered. In addition, you will need to calculate the debits separately for forested areas and for emergent/shrub areas. Use the map of Cowardin plant types from question H 1.1 on the Scoring Form to determine the boundaries between forested areas and non-forested areas.

FUNCTION From Scoring Form	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	L	M	L
Rating of Landscape Potential	H	H	L
Rating of Value	H	M	L
Score for Wetland	7	7	3

CALCULATIONS emergent or shrub areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)	7	7	3
Impact - Acres of non-forested areas (same for all functions)	0.02		
Basic mitigation requirement (BMR) = Score for function x acres impacted	0.14	0.14	0.06
Temporal loss factor (TLF) (See table below)	3	3	3
Mitigation required DEBITS = BMR x TLF	0.42	0.42	0.18
CALCULATIONS forested areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)			
Impact - Acres of forest (Create a separate column for each type of forest) Deciduous (D), Evergreen (E), Cat. 1 deciduous (>50%cover) (CD) Cat. 1 evergreen (>50% cover)(CE)	D E CD CE	D E CD CE	D E CD CE
Basic mitigation requirement (BMR) = Score x acres impacted			
Temporal loss factor (TLF) (See table below)			
Mitigation required DEBITS = BMR x TLF			
TOTAL for forested areas (D+E+CD+CE)			

1.02

Temporal Loss Factors:

Timing of Mitigation	Temporal Loss Factor
Advance – At least two years has passed since plantings were completed or one year since “as-built” plans were submitted to regulatory agencies	1.25
Concurrent – Physical alterations at mitigation site are completed within a year of the impacts, but planting may be delayed by up to 2 years if needed to optimize conditions for success.	
For impacts to an emergent or shrub community	1.5
For impacts to a deciduous forested wetland community	2.0
For impacts to an evergreen forested wetland community	2.5
For impacts to a deciduous Category I forested wetland community	3
For impacts to an evergreen Category I forested wetland community	3.5
Delayed - Construction is not completed within one year of impact, but is completed (including plantings if required) within 5 growing seasons of impact.	
For impacts to an emergent or shrub community	3
For impacts to a deciduous forested wetland community	4
For impacts to an evergreen forested wetland community	5
For impacts to a deciduous Category I forested wetland community	6
For impacts to an evergreen Category I forested wetland community	7

NOTE: The ratings, scoring and calculations are valid for only five years because wetlands and their functions will change with time. If delays in the construction of the site are more than 5 years, the mitigation plan will probably have to be re-negotiated and the calculation re-done. This time limit was chosen to be consistent with the validity of wetland delineations as established by the U.S. Army Corps of Engineers.

TOTALS

	Improving Water Quality	Hydrologic	Habitat
DEBITS - Emergent or shrub areas	0.42 Acre-points	0.42 Acre-points	0.18 Acre-points
DEBITS - Forested areas	Acre-points	Acre-points	Acre-points
TOTAL	0.42 Acre-points	0.42 Acre-points	0.18 Acre-points

Wetland name or number E

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): WETLAND E Date of site visit: 8/6/12

Scored by P. DREISBACH

SEC: ___ TWNSHP: ___ RNGE: ___ Estimated size: 0.02 Aerial photo included? ___

These scores are for:

- Wetland being altered
 Mitigation site before mitigation takes place
 Mitigation site after goals and objectives are met

SUMMARY OF SCORING

FUNCTION	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	L	M	L
Rating of Landscape Potential	H	H	L
Rating of Value	H	M	L
Score Based on Ratings (see table below)	7	7	3

Wetland HGM Class Used for Rating	
Depressional	
Riverine	<input checked="" type="checkbox"/>
Lake-fringe	
Slope	
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	<input type="checkbox"/>

Scores
(Order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

NOTE: Form is not complete without the figures requested.

Put only the highest score for a question in each box of the form, even if more than one indicator applies to the unit. Do NOT add the scores within a question.

Wetland name or number E

HGM Classification of Wetlands in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e., except during floods)?

NO - go to 2

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

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

YES - **Freshwater Tidal Fringe** **NO** - **Saltwater Tidal Fringe (Estuarine)**

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

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

NO - go to 3

YES - The wetland class is **Flats**

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface) at least 20 acres (8 ha) in size;

~~At least 30%~~ At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO - go to 4

YES - The wetland class is **Lake-fringe** (Lacustrine Fringe)

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

The wetland is on a slope (*slope can be very gradual*),

The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

The water leaves the wetland **without being impounded**?

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

NO - go to 5

YES - The wetland class is **Slope**

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

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

The overbank flooding occurs at least once every two years.

Wetland name or number E

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

NO - go to 6

YES - The wetland class is Riverine

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

NO - go to 7

YES - The wetland class is Depressional

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

NO - go to 8

YES - The wetland class is Depressional

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

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

HGM Classes Within the Wetland Unit Being Rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number E

Riverine and Freshwater Tidal Fringe Wetlands
WATER QUALITY FUNCTIONS - Indicators that site functions to improve water quality
 Questions R 1.1 – R 1.2 are from the Wetland Rating System (Hruby 2004b).

R 1. Does the wetland unit have the <u>potential</u> to improve water quality?	
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: <i>If depressions > 1/2 of area of unit draw polygons on aerial photo or map</i> Depressions cover > 3/4 area of wetland points = 8 Depressions cover > 1/2 area of wetland points = 4 Depressions present but cover < 1/2 area of wetland points = 2 No depressions present points = 0	Figure __ 2
R 1.2 Characteristics of the plants in the unit (areas with >90% cover at person height): <i>Include photo or map showing polygons of different plants types</i> Trees or shrubs > 2/3 area of the unit points = 8 Trees or shrubs > 1/3 area of the unit points = 6 Herbaceous plants (> 6" high) > 2/3 area of unit points = 6 Herbaceous plants (> 6" high) > 1/3 area of unit points = 3 Trees, shrubs, and ungrazed herbaceous < 1/3 area of unit points = 0	Figure __ 3
Total for R 1	Add the points in the boxes above

5
L

Rating of Site Potential: If score is
 12 - 16 = H
 6 - 11 = M
 0 - 5 = L

Record the rating on the first page

R 2.0 Does the landscape have the potential to support the water quality function at the site?	
R 2.1 Is the unit within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.2 Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	0
R 2.4 Is more than 10% of the area within 150 ft of the wetland unit in agricultural, pasture, golf courses, residential, commercial, or urban? Yes = 1 No = 0	1
Total for R 2	Add the points in the boxes above

Rating of Landscape Potential: If score is
 3 - 5 = H
 1 or 2 = M
 0 = L

4
H

Record the rating on the first page

Wetland name or number E

R 3.0 Is the water quality improvement provided by the site valuable to society?	
R 3.1 Is the unit along a stream or river that is on the 303(d) list or on a tributary that drains to one? <i>Lynch Cove, Belfair Ck.</i> Yes = 1 No = 0	1
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	1
R 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which unit is found). Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	4

Rating of Value: If score is 2 - 4 = H
1 = M
0 = L

H

Record the rating on the first page

Riverine and Freshwater Tidal Fringe Wetlands
HYDROLOGIC FUNCTIONS - Indicators that site functions to reduce flooding and stream erosion
 Questions R 4.1 and R 4.2 are from Wetland Rating System (Hruby 2004b).

R 4.0 Does the wetland unit have the potential to reduce flooding and erosion?	
R 4.1 Characteristics of the overbank storage the unit provides: <i>Provide aerial photo showing average widths</i> Estimate the average width of the wetland unit 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 points = 6 If the ratio is between 5 - <10 points = 4 If the ratio is between 1 - <5 points = 2 If the ratio is < 1 points = 1	Figure __ 4
R 4.2 Characteristics of plants that slow down water velocities during floods: <i>Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description</i> (polygons need to have >90% cover at person height NOT Cowardin classes): <i>Provide photo or map showing polygons of different plants types</i> Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area points = 7 Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area points = 4 Plants do not meet above criteria points = 0	Figure __ 4
Total for R 4 Add the points in the boxes above	8

Rating of Site Potential: If score is 12 - 16 = H
6 - 11 = M
0 - 5 = L

M

Wetland name or number E

R 5.0 Does the landscape have the potential to support the hydrologic functions at the site?		
R5.1 Is the stream/river adjacent to the unit downcut?	Yes = 0 No = 1	/
R 5.2 Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	/
R 5.3 Is the upgradient stream or river controlled by dams?	Yes = 0 No = 1	/
Total for R 5	Add the points in the boxes above	3

Rating of Landscape Potential: If score is
 3 = H
 1 or 2 = M
 0 = L

H

Record the rating on the first page

R 6.0 Are the hydrologic functions provided by the site valuable to society?		
R 6.1 Distance to the nearest areas downstream that have flooding problems? <i>Choose the description that best fits the site.</i>		
The sub-basin immediately down-gradient of site has surface flooding problems that results in \$\$ loss or loss of natural resources. points = 2		/
Surface flooding problems are in a sub-basin further down-gradient. points = 1		
No flooding problems anywhere downstream. points = 0		
R 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	Ø
Total for R 6	Add the points in the boxes above	1

Rating of Value:
 If score is 2 - 4 = H
 1 = M
 0 = L

H

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number E

<p>H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion between Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none. <i>Provide map of Cowardin plant classes (same as H1.1)</i></p> <p>None = 0 points Low = 1 point Moderate = 2 points</p> <p>High = 3 points [riparian braided channels with 2 classes]</p> <p>NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."</p>	<p>Figure_</p> <p>1</p>
<p>H 1.5. Special Habitat Features: Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input type="checkbox"/> Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) within the unit</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging plants extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<p>1</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H 1.1, H 1.2, H 1.3, H 1.4, and H 1.5</p>	<p>4</p>
<p>Rating of Site Potential: If score is</p> <p>15 - 18 = H</p> <p>7 - 14 = M</p> <p>0 - 6 = L</p>	<p>L</p>

Record the rating on the first page

Wetland name or number E

H 2.0 Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 0 % undisturbed habitat + [(% moderate and low intensity land uses)/2] = <u>0</u> <i>Provide map of land use within 1 km of unit edge</i> If total accessible habitat is: > 1/3 (33.3%) of 1 km circle (~100 hectares or 250 acres) points = 3 20 - 33% of 1 km circle points = 2 10 - 19% of 1 km circle points = 1 <10% of 1 km circle points = 0		Figure_ <u> </u> <u>0</u>
H 2.2 Undisturbed habitat in 1 km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of circle points = 0		<u>0</u>
H 2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) Does not meet criterion above points = 0		<u>- 2</u>
Total for H 2 Add the points in the boxes above		<u>- 2</u>

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

L

Record the rating on the first page

H 3.0 Is the Habitat provided by the site valuable to society?		
H3.1 Does the site provides habitat for species valued in laws, regulations or policies? (choose only the highest score) Site meets ANY of the following criteria: points = 2 — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is a "priority area" for an individual WDFW species — It is a Natural Heritage Site as determined by the Department of Natural Resources — It scores 4 on question H2.3 of the wetland rating system — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site scores 1-3 on question H2.3 of the wetland rating system points = 1 Site does not meet any of the criteria above points = 0		<u>0</u>

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

L

Record the rating on the first page

Listing ID:	6937
Water Body Name:	GREAT BEND/LYNCH COVE
Water Body Type:	Marine
Parameter:	Fecal Coliform 2008 CATEGORY: 5
Sample Medium:	Water 2004 Category: 5
WRIA:	15 - Kitsap 1998 303(d) List?: Y 1996 303(d) List?: Y
County:	Mason
Puget Sound Action Area:	Hood Canal
Grid Cell:	47122E8E4
Latitude:	47.445 Longitude: 122.845
LLID:	1224199478564
WASWIS:	390KRD
WBID:	WA-15-0260

2008 Basis

*** 2008 Basis Statement (carried forward from 2004) ***

Mason County unpublished data (submitted by Wayne Clifford on 8/91) show excursions beyond the criterion for both the geometric mean and the percentile criterion at station M1 between 8/1/90 and 8/1/91.

Mason County unpublished data (submitted by Wayne Clifford on 8/91) show excursions beyond the criterion for both the geometric mean and the percentile criterion at station M2 between 8/1/90 and 8/1/91.

"DEBIT" WORKSHEET

Wetland unit to be altered: WETLAND F Date 8/6/12

Use the following tables to calculate the Debits for the impact site. Use a separate worksheet for each wetland unit being altered. In addition, you will need to calculate the debits separately for forested areas and for emergent/shrub areas. Use the map of Cowardin plant types from question H 1.1 on the Scoring Form to determine the boundaries between forested areas and non-forested areas.

FUNCTION From Scoring Form	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	M	M	L
Rating of Landscape Potential	H	H	L
Rating of Value	H	M	L
Score for Wetland	8	7	3

CALCULATIONS emergent or shrub areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)			
Impact - Acres of non-forested areas (same for all functions)			
Basic mitigation requirement (BMR) = Score for function x acres impacted			
Temporal loss factor (TLF) (See table below)			
Mitigation required DEBITS = BMR x TLF			
CALCULATIONS forested areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)	8	7	3
Impact - Acres of forest (Create a separate column for each type of forest) Deciduous (D), Evergreen (E), Cat. 1 deciduous (>50% cover) (CD) Cat. 1 evergreen (>50% cover)(CE)	(D) E CD CE	(D) E CD CE	(D) E CD CE
Basic mitigation requirement (BMR) = Score x acres impacted	0.08	0.07	0.03
Temporal loss factor (TLF) (See table below)		4.0	
Mitigation required DEBITS = BMR x TLF	0.32	0.28	0.12
TOTAL for forested areas (D+E+CD+CE)	0.32	0.28	0.12

0.72

Temporal Loss Factors:

Timing of Mitigation	Temporal Loss Factor
Advance – At least two years has passed since plantings were completed or one year since “as-built” plans were submitted to regulatory agencies	1.25
Concurrent – Physical alterations at mitigation site are completed within a year of the impacts, but planting may be delayed by up to 2 years if needed to optimize conditions for success.	
For impacts to an emergent or shrub community	1.5
For impacts to a deciduous forested wetland community	2.0
For impacts to an evergreen forested wetland community	2.5
For impacts to a deciduous Category I forested wetland community	3
For impacts to an evergreen Category I forested wetland community	3.5
Delayed - Construction is not completed within one year of impact, but is completed (including plantings if required) within 5 growing seasons of impact.	
For impacts to an emergent or shrub community	3
For impacts to a deciduous forested wetland community	4
For impacts to an evergreen forested wetland community	5
For impacts to a deciduous Category I forested wetland community	6
For impacts to an evergreen Category I forested wetland community	7

NOTE: The ratings, scoring and calculations are valid for only five years because wetlands and their functions will change with time. If delays in the construction of the site are more than 5 years, the mitigation plan will probably have to be re-negotiated and the calculation re-done. This time limit was chosen to be consistent with the validity of wetland delineations as established by the U.S. Army Corps of Engineers.

TOTALS

	Improving Water Quality	Hydrologic	Habitat
DEBITS - Emergent or shrub areas	Acre-points	Acre-points	Acre-points
DEBITS - Forested areas	0.32 Acre-points	0.28 Acre-points	0.12 Acre-points
TOTAL	0.32 Acre-points	0.28 Acre-points	0.12 Acre-points

Wetland name or number F

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): WETLAND F Date of site visit: 8-6-12

Scored by P. DREISBACH

SEC: TOWNSHIP: RANGE: Estimated size: 0.01 Aerial photo included?

- These scores are for:
- Wetland being altered
 - Mitigation site before mitigation takes place
 - Mitigation site after goals and objectives are met

SUMMARY OF SCORING

FUNCTION	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	M	M	L
Rating of Landscape Potential	H	H	L
Rating of Value	H	M	L
Score Based on Ratings (see table below)	8	7	3

Wetland HGM Class Used for Rating	
Depressional	<input checked="" type="checkbox"/>
Riverine	<input type="checkbox"/>
Lake-fringe	<input type="checkbox"/>
Slope	<input type="checkbox"/>
Flats	<input type="checkbox"/>
Freshwater Tidal	<input type="checkbox"/>
	<input type="checkbox"/>
Check if unit has multiple HGM classes present	<input type="checkbox"/>

Scores
(Order of ratings is not important)

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

NOTE: Form is not complete without the figures requested.
 Put only the highest score for a question in each box of the form, even if more than one indicator applies to the unit. Do NOT add the scores within a question.

Wetland name or number F

HGM Classification of Wetlands in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e., except during floods)?

NO - go to 2

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

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

YES - **Freshwater Tidal Fringe** **NO** - **Saltwater Tidal Fringe (Estuarine)**

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

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

NO - go to 3

YES - The wetland class is **Flats**

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface) at least 20 acres (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO - go to 4

YES - The wetland class is **Lake-fringe** (Lacustrine Fringe)

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

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 type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

NO - go to 5

YES - The wetland class is **Slope**

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

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

The overbank flooding occurs at least once every two years.

Wetland name or number F

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

NO - go to 6

YES - The wetland class is **Riverine**

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

NO - go to 7

YES - The wetland class is **Depressional**

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

NO - go to 8

YES - The wetland class is **Depressional**

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

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

HGM Classes Within the Wetland Unit Being Rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

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

Wetland name or number F

D 2.0 Does the landscape have the potential to support the water quality function at the site?		
D 2.1 Does the Wetland unit receive stormwater discharges? 0	Yes = 1 No = 0	1
D 2.2 Is more than 10% of the area within 150 ft of wetland unit in agricultural, pasture, residential, commercial, or urban? = 1 No = 0	Yes	1
D 2.3 Are there septic systems within 250 ft of the wetland unit? 0	Yes = 1 No = 0	1
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3? Source <u>potentially, in developed area</u> No = 0	Yes = 1	1
Total for D 2	Add the points in the boxes above	4

Rating of Landscape Potential: If score is 3 or 4 = H

1 or 2 = M

0 = L

H

Record the rating on the first page

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D 3.1 Does the unit discharge directly to a stream, river, or lake that is on the 303d list? 0	Yes = 1 No = 0	1
D 3.2 Is the unit in a basin or sub-basin where an aquatic resource is on the 303(d) list? <u>Fecal coliform (Belfair Ck, Lynch Cove)</u>	Yes = 1 No = 0	1
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the basin in which unit is found) = 0	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	4

Rating of Value:

If score is 2-4 = H

1 = M

0 = L

H

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number F

D 5.0 Does the landscape have the potential to support hydrologic functions at the site?		
D 5.1 Does the unit receive any stormwater discharges?	Yes = 1 No = 0	1
D5.2 Is >10% of the land use within 150 ft of the wetland unit agriculture, pasture, residential, urban, or commercial?	Yes = 1 No = 0	1
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses (residential at >1 residence/1 acre, urban, commercial, agriculture, etc.)?	Yes = 1 No = 0	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential: If score is
 3 = H
 1,2 = M
 0 = L

4

Record the rating on the first page

D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
<input type="checkbox"/> The site has been identified as important for flood storage or flood conveyance in a regional flood control plan.	points = 2	1
<input type="checkbox"/> The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., salmon redds), AND		
o Damage occurs in sub-basin that is immediately down-gradient of unit.	points = 2	
o Damage occurs in a sub-basin further down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. <i>Explain why</i> _____	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the unit.	points = 0	

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

M

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number F

<p>H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion between Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <p><i>Provide map of Cowardin plant classes (same as H1.1)</i></p> <p>None = 0 points Low = 1 point Moderate = 2 points</p> <p>High = 3 points [riparian braided channels with 2 classes]</p> <p>NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."</p>	<p>Figure_</p> <p style="text-align: right;">1</p>
<p>H 1.5. Special Habitat Features: Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <p><input type="checkbox"/> Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) within the unit</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging plants extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>	<p style="text-align: right;">1</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H 1.1, H 1.2, H 1.3, H 1.4, and H 1.5</p>	<p style="text-align: right;">3</p>

Rating of Site Potential: If score is

15 - 18 = H
7 - 14 = M
0 - 6 = L

L

Record the rating on the first page

"DEBIT" WORKSHEET

Wetland unit to be altered: WETLAND N Date 5/20/13 revised 9/11/13

Use the following tables to calculate the Debits for the impact site. Use a separate worksheet for each wetland unit being altered. In addition, you will need to calculate the debits separately for forested areas and for emergent/shrub areas. Use the map of Cowardin plant types from question H 1.1 on the Scoring Form to determine the boundaries between forested areas and non-forested areas.

FUNCTION From Scoring Form	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	M	L	M
Rating of Landscape Potential	M	M	H
Rating of Value	H	L	H
Score for Wetland	7	4	8

CALCULATIONS emergent or shrub areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)			
Impact - Acres of non-forested areas (same for all functions)			
Basic mitigation requirement (BMR) = Score for function x acres impacted			
Temporal loss factor (TLF) (See table below)			
Mitigation required DEBITS = BMR x TLF			
CALCULATIONS forested areas	Improving Water Quality	Hydrologic	Habitat
Score for wetland unit (see above)	7	4	8
Impact - Acres of forest (Create a separate column for each type of forest) Deciduous (D), Evergreen (E), Cat. 1 deciduous (>50%cover) (CD) Cat. 1 evergreen (>50% cover)(CE)	(D) E CD CE	(D) E CD CE	(D) E CD CE
		0.04	
Basic mitigation requirement (BMR) = Score x acres impacted	.28	.16	.32
Temporal loss factor (TLF) (See table below)		4	
Mitigation required DEBITS = BMR x TLF	1.12	.64	1.28
TOTAL for forested areas (D+E+CD+CE)	1.12	.64	1.28

3.04

Temporal Loss Factors:

Timing of Mitigation	Temporal Loss Factor
Advance – At least two years has passed since plantings were completed or one year since “as-built” plans were submitted to regulatory agencies	1.25
Concurrent – Physical alterations at mitigation site are completed within a year of the impacts, but planting may be delayed by up to 2 years if needed to optimize conditions for success.	
For impacts to an emergent or shrub community	1.5
For impacts to a deciduous forested wetland community	2.0
For impacts to an evergreen forested wetland community	2.5
For impacts to a deciduous Category I forested wetland community	3
For impacts to an evergreen Category I forested wetland community	3.5
Delayed - Construction is not completed within one year of impact, but is completed (including plantings if required) within 5 growing seasons of impact.	
For impacts to an emergent or shrub community	3
For impacts to a deciduous forested wetland community	4
For impacts to an evergreen forested wetland community	5
For impacts to a deciduous Category I forested wetland community	6
For impacts to an evergreen Category I forested wetland community	7

NOTE: The ratings, scoring and calculations are valid for only five years because wetlands and their functions will change with time. If delays in the construction of the site are more than 5 years, the mitigation plan will probably have to be re-negotiated and the calculation re-done. This time limit was chosen to be consistent with the validity of wetland delineations as established by the U.S. Army Corps of Engineers.

TOTALS

	Improving Water Quality	Hydrologic	Habitat
DEBITS - Emergent or shrub areas	Acre-points	Acre-points	Acre-points
DEBITS - Forested areas	1.12 Acre-points	.64 Acre-points	1.28 Acre-points
TOTAL	1.12 Acre-points	.64 Acre-points	1.28 Acre-points

Wetland name or number N

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): WETLAND N Date of site visit: 5/20/13

Scored by P. DREISBACH

SEC: TWSHP: RNGE: Estimated size: Aerial photo included?

These scores are for:

- Wetland being altered
 Mitigation site before mitigation takes place
 Mitigation site after goals and objectives are met

SUMMARY OF SCORING

FUNCTION	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential	<i>M</i>	<i>L</i>	<i>M</i>
Rating of Landscape Potential	<i>M</i>	<i>M</i>	<i>H</i>
Rating of Value	<i>H</i>	<i>L</i>	<i>H</i>
Score Based on Ratings (see table below)	<i>7</i>	<i>4</i>	<i>8</i>

Wetland HGM Class Used for Rating	
Depressional	
Riverine	
Lake-fringe	
Slope	<input checked="" type="checkbox"/>
Flats	
Freshwater Tidal	
Check if unit has multiple HGM classes present	<input type="checkbox"/>

Scores
(Order of ratings is not important)
9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

NOTE: Form is not complete without the figures requested.

Put only the highest score for a question in each box of the form, even if more than one indicator applies to the unit. Do NOT add the scores within a question.

Wetland name or number N

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides (i.e., except during floods)?

NO - go to 2

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

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

YES - **Freshwater Tidal Fringe** NO - **Saltwater Tidal Fringe (Estuarine)**

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

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

NO - go to 3

YES - The wetland class is **Flats**

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

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

The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface) at least 20 acres (8 ha) in size;

At least 30% of the open water area is deeper than 6.6 ft (2 m)?

NO - go to 4

YES - The wetland class is **Lake-fringe** (Lacustrine Fringe)

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

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 type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

NO - go to 5

YES - The wetland class is **Slope**

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

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

The overbank flooding occurs at least once every two years.

Wetland name or number N

S 3.0 Is the water quality improvement provided by the site valuable to society?	
S 3.1 Does the unit discharge directly to a stream, river, or lake that is on the 303(d) list? Yes = 1 No = 0	1
S 3.2 Is the unit in a sub-basin where water quality is an issue? (at least one aquatic resource in the basin is on the 303(d) list) Yes = 1 No = 0	1
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	4
Rating of Value: If score is 2 - 4 = H 1 = M 0 = L	H

Record the rating on the first page

Slope Wetlands	
HYDROLOGIC FUNCTIONS - Indicators that the site functions to reduce flooding and stream erosion	
Questions S 4.1 - S 4.2 are from Wetland Rating System (Hruby 2004b).	
S 4.0 Does the wetland unit have the <u>potential</u> to reduce flooding and stream erosion?	
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows) Dense, uncut, rigid plants covers > 90% of the area of the wetland. YES = 1 All other conditions = 0	0

Rating of Site Potential: If score is
1 = M
0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number N

S 5.0 Does the landscape have the potential to support the hydrologic functions at the site?	
S 5.1 Is more than 25% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	1

**Rating of Landscape Potential: If score is 1 = M
0 = L**

M

Record the rating on the first page

S 6.0 Are the hydrologic functions provided by the site valuable to society?	
S 6.1 Distance to the nearest areas downstream that have flooding problems? Immediate sub-basin down-gradient of site has surface flooding problems that results in \$\$ loss or loss of natural resources points = 2 Surface flooding problems are in a sub-basin further down-gradient points = 1 No flooding problems anywhere downstream points = 0	0
S 6.2 Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6 Add the points in the boxes above	0

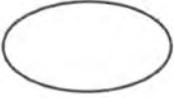
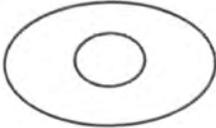
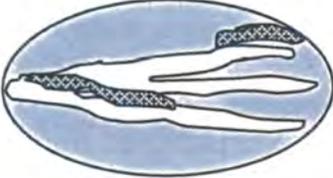
**Rating of Value: If score is 2 - 4 = H
1 = M
0 = L**

L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number ^N

<p>H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion between Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <p style="text-align: center;"><i>Provide map of Cowardin plant classes (same as H1.1)</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>[riparian braided channels with 2 classes]</p> </div> </div> <p style="text-align: center;">High = 3 points</p> <p>NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."</p>	<p>Figure_</p> <p style="text-align: center; font-size: 2em;">2</p>
<p>H 1.5. Special Habitat Features: Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) within the unit <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging plants extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) <input checked="" type="checkbox"/> At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated. (<i>structures for egg-laying by amphibians</i>) <input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>) 	<p style="font-size: 2em;">4</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H 1.1, H 1.2, H 1.3, H 1.4, and H 1.5</p>	<p style="font-size: 2em;">11</p>

Rating of Site Potential: If score is

15 - 18 = H
7 - 14 = M
0 - 6 = L

Record the rating on the first page

Wetland name or number N

H 2.0 Does the landscape have the potential to support habitat at the site?											
<p>H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____</p> <p style="text-align: center;"><i>Provide map of land use within 1 km of unit edge</i></p> <p>If total accessible habitat is:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">> 1/3 (33.3%) of 1 km circle (~100 hectares or 250 acres)</td> <td style="width: 20%;">points = 3</td> <td rowspan="4" style="width: 20%; text-align: center; vertical-align: middle;">3</td> </tr> <tr> <td>20 - 33% of 1 km circle</td> <td>points = 2</td> </tr> <tr> <td>10 - 19% of 1 km circle</td> <td>points = 1</td> </tr> <tr> <td><10% of 1 km circle</td> <td>points = 0</td> </tr> </table>		> 1/3 (33.3%) of 1 km circle (~100 hectares or 250 acres)	points = 3	3	20 - 33% of 1 km circle	points = 2	10 - 19% of 1 km circle	points = 1	<10% of 1 km circle	points = 0	Figure_
> 1/3 (33.3%) of 1 km circle (~100 hectares or 250 acres)	points = 3	3									
20 - 33% of 1 km circle	points = 2										
10 - 19% of 1 km circle	points = 1										
<10% of 1 km circle	points = 0										
<p>H 2.2 Undisturbed habitat in 1 km circle around unit. If:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Undisturbed habitat > 50% of circle</td> <td style="width: 20%;">points = 3</td> <td rowspan="4" style="width: 20%; text-align: center; vertical-align: middle;">2</td> </tr> <tr> <td>Undisturbed habitat 10 - 50% and in 1-3 patches</td> <td>points = 2</td> </tr> <tr> <td>Undisturbed habitat 10 - 50% and > 3 patches</td> <td>points = 1</td> </tr> <tr> <td>Undisturbed habitat < 10% of circle</td> <td>points = 0</td> </tr> </table>		Undisturbed habitat > 50% of circle	points = 3	2	Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	Undisturbed habitat 10 - 50% and > 3 patches	points = 1	Undisturbed habitat < 10% of circle	points = 0	
Undisturbed habitat > 50% of circle	points = 3	2									
Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2										
Undisturbed habitat 10 - 50% and > 3 patches	points = 1										
Undisturbed habitat < 10% of circle	points = 0										
<p>H 2.3 Land use intensity in 1 km circle. If:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">> 50% of circle is high intensity land use</td> <td style="width: 20%;">points = (- 2)</td> <td rowspan="2" style="width: 20%; text-align: center; vertical-align: middle;">∅</td> </tr> <tr> <td>Does not meet criterion above</td> <td>points = 0</td> </tr> </table>		> 50% of circle is high intensity land use	points = (- 2)	∅	Does not meet criterion above	points = 0					
> 50% of circle is high intensity land use	points = (- 2)	∅									
Does not meet criterion above	points = 0										
<p>Total for H 2 Add the points in the boxes above</p>		5									

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

H

Record the rating on the first page

H 3.0 Is the Habitat provided by the site valuable to society?							
<p>H3.1 Does the site provides habitat for species valued in laws, regulations or policies? <i>(choose only the highest score)</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <ul style="list-style-type: none"> — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is a "priority area" for an individual WDFW species — It is a Natural Heritage Site as determined by the Department of Natural Resources <input checked="" type="checkbox"/> It scores 4 on question H2.3 of the wetland rating system — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;">Site scores 1-3 on question H2.3 of the wetland rating system</td> <td style="width: 20%;">points = 1</td> <td rowspan="2" style="width: 20%; text-align: center; vertical-align: middle;">2</td> </tr> <tr> <td>Site does not meet any of the criteria above</td> <td>points = 0</td> </tr> </table>		Site scores 1-3 on question H2.3 of the wetland rating system	points = 1	2	Site does not meet any of the criteria above	points = 0	
Site scores 1-3 on question H2.3 of the wetland rating system	points = 1	2					
Site does not meet any of the criteria above	points = 0						

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

H

Record the rating on the first page

Appendix C — Functions Characterization Tool Summary Sheets

Wetland ID: C___ Project: SR 3 BAWSI

Assessed By: Paul Dreisbach

Date: 11/14/07

Cowardin Class: PEMEcology Category: IV

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration		X			The wetland is ditched and does not function to retain much water.
Sediment removal		X	3		The wetland lacks opportunity, is ditched, and has no depressions that can trap sediment.
Nutrient and toxic removal	X		1,4		Although the wetland is ditched, it has emergent vegetation that can trap some toxicants from the highway.
Erosion control & shoreline stabilization		X			The area has been channelized with the effect of increasing the likelihood of downstream erosion.
Production of organic matter and its export	X		6		Some organic material is likely flushed to downstream resources.
General habitat suitability		X	3		This ditched and mowed wetland does not have habitat characteristics.
Habitat for aquatic invertebrates		X	1,6		This area is ditched, mowed, lacks inundation, and lacks cover, and thus does not provide significant invertebrate habitat.
Habitat for amphibians		X	6		The wetland lacks sufficient inundation, buffers, and cover to provide amphibian habitat.
Habitat for wetland-associated mammals		X			Wetland lacks watercourse and habitat characteristics.
Habitat for wetland-associated birds		X	2		Wetland does not provide habitat for target bird groups (waterfowl, shorebirds, herons).
General fish habitat		X	2		Wetland does not likely have significant fish usage due to downstream barriers.
Native plant richness		X			Dominant species include non-native species.
Educational or scientific use		X			NA
Uniqueness & heritage		X			NA

Wetland ID: E____ Project: SR 3 BASWI_____

Assessed By: Paul Dreisbach

Date: 11/14/07

Cowardin Class: PEM

Ecology Category: III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X				Somewhat likely since wetland provides a minimal amount of water storage.
Sediment removal		X	3		There is no apparent opportunity to trap sediment.
Nutrient and toxic removal	X		1,4		This wetland may perform a minimum level of this function in the ditch portion of the wetland.
Erosion control & shoreline stabilization		X	2		Other than the roadside ditch, this wetland has no associated watercourse.
Production of organic matter and its export		X	3,6		Because of its small size and lack of vegetative structure, this wetland does not likely perform a significant level of this function.
General habitat suitability		X			This wetland does not provide desirable habitat characteristics.
Habitat for aquatic invertebrates		X	4,6		Wetland lacks habitat characteristics to provide significant levels of this function.
Habitat for amphibians		X	6		Lacks habitat characteristics to support this function.
Habitat for wetland-associated mammals		X			Lacks habitat characteristics to support this function.
Habitat for wetland-associated birds		X	2		Lacks habitat characteristics to support this function.
General fish habitat		X			No associated fish bearing water.
Native plant richness		X			Wetland lacks diversity and structure and not all dominant plants are native.
Educational or scientific use		X			NA
Uniqueness & heritage		X			NA

Wetland ID: Wetland F Project: SR 3 BAWSI Assessed By: Paul Dreisbach Date: 6/1/2012

Cowardin Class: PFO Ecology Category: III

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration		X	2,5,7		Wetland is small and stores a negligible amount of water.
Sediment removal		X	-		Wetland does not function to trap much sediment.
Nutrient and toxic removal	X		1,3		May trap some toxicants entering from the adjacent road and parking lot
Erosion control & shoreline stabilization		X	-		No associated watercourse.
Production of organic matter and its export		X	2,5		Most of the organic matter produced in this wetland appears to remain in place.
General habitat suitability		X	-		Wetland lacks characteristics to support wildlife and is next to the highway.
Habitat for aquatic invertebrates		X	6		Wetland lacks characteristics to support this function.
Habitat for amphibians		X	4,6		Lacks sufficient inundation and other characteristics.
Habitat for wetland-associated mammals		X	-		Lacks characteristics including permanent water.
Habitat for wetland-associated birds		X	3,8		Wetland does not support target bird groups (herons, shorebirds, waterfowl).
General fish habitat		X	-		There is no associated fish-bearing watercourse.
Native plant richness		X	-		Not all the natives are
Educational or scientific use		X	3		Although the dominants are native, the wetland is small and lacks diversity and complexity.
Uniqueness & heritage		X	-		Not Applicable

Wetland ID: N___ Project: SR 3 BAWSI_____ Assessed By: P.D. Date: 4/14/10

Cowardin Class: PFO Ecology Category: II

Function/Value	Occurrence		Rationale (qualifiers and attributes present)	Principal Function	Comments
	Y	N			
Flood flow alteration	X		2,5,6	X	Wetland retains water that may otherwise impact downstream property and natural resources.
Sediment removal	X		1,3,5,6	X	There is a stream adjacent and a construction site directly upgradient from this wetland.
Nutrient and toxic removal	X		1,4	X	This wetland likely traps nutrients & toxicants entering from upgradient sources.
Erosion control & shoreline stabilization	X		-		Appears to be connected with Mindy Creek but not a principal function.
Production of organic matter and its export	X		1,2,3,6	X	Organic matter produced appears to be transported to down-gradient habitats.
General habitat suitability	X		1,4	X	Wetland has characteristics including connectivity with other habitat types (streams, estuary) to support wildlife.
Habitat for aquatic invertebrates	X			X	Wetland has characteristics to support invertebrate habitat.
Habitat for amphibians	X			X	Wetland has areas that are suitable for amphibian breeding
Habitat for wetland-associated mammals	X				Wetland appears to have some characteristics to support wetland-associated mammals.
Habitat for wetland-associated birds		X			Does not likely provided habitat for target bird groups (herons, shorebirds, waterfowl).
General fish habitat	X				Wetland appears to have an offsite connection with Mindy Creek which supports salmonids
Native plant richness	X			X	Plant species identified in the wetland are native.
Educational or scientific use		X			NA
Uniqueness & heritage		X			NA