Exhibit 13

SITE DEVELOPMENT AND CONCEPTUAL MITIGATION PLAN

THE FARM AT MILL CREEK
MILL CREEK, WASHINGTON

Prepared For:

VINTAGE HOUSING DEVELOPMENT, LLC
Newport Beach, California

Prepared By:

TALASAEA CONSULTANTS, INC.
Woodinville, Washington

March 23, 2018
(Revised January 24, 2019)

Site Development and Conceptual Mitigation Plan

The Farm at Mill Creek
Mill Creek, Washington

Prepared For:

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March 23, 2018
(Revised January 24, 2019)

EXECUTIVE SUMMARY

PROJECT NAME: The Farm at Mill Creek

CLIENT: Vintage Housing Development, LLC, Mr. Ryan Patterson

PROJECT LOCATION: The Farm at Mill Creek is an approximately 17.4-acre assemblage of two parcels located in Mill Creek. It is bound by the north by 132nd Street Southeast (WA-96), to the west and east by undeveloped properties, and to the south by a single-family residential development. The Snohomish County Tax Parcel numbers for the Project Site are 28053300200200 and 28053300200300. The Public Land Survey System location for this assemblage is the NW ¼ of Section 33, Township 28 North, Range 5 East, Willamette Meridian (W.M.).
The Mitigation Site is an assemblage of three parcels totaling approximately 61 acres located between the Project Site and Thomas Lake. The Snohomish County Tax Parcel numbers for the Mitigation Site are included in **Figure 2**. The Public Land Survey System location for this assemblage is the NW ¼ of Section 33, Township 28 North, Range 5 East, Willamette Meridian (W.M.).

PROJECT STAFF: Bill Shiels, Principal; Jennifer Marriott, PWS, Senior Ecologist, and David R. Teesdale, PWS, Senior Wetland Ecologist.

FIELD SURVEY: The Project Site has been investigated and reviewed by Talasaea several times since 2002. The most recent work was started in 2014 and has continued through the beginning of 2018.

PROPOSED PROJECT: The Applicant plans to develop The Farm at Mill Creek as a mixed residential and commercial business. Other Project Site features will include pedestrian walkways, open space, and supporting utilities and stormwater facilities. The on-site amenities will link to off-site trails to connect the Project and Mitigation Sites to allow access to a large pedestrian trail system that will be part of the Mitigation Plan. The proposed stormwater system will consist of an underground detention vault and water quality facility designed to collect, detain, and treat runoff collected on-site. The stormwater facility will be designed to store and release runoff to meet or exceed the requirements of the 2012 Department of Ecology Stormwater Management Manual for Western Washington.

ASSESSMENT OF DEVELOPMENT IMPACTS: No direct impacts to the on-site wetland are proposed with this Project. The applicant is proposing to significantly reduce the wetland buffer beyond the prescriptive allowances that will cause approximately 106,099 square feet (sf) of indirect wetland impacts due to the reduced buffer. Per MCMC §18.06.930(H), non-prescriptive buffer modifications are allowed if both regional benefit and protection of functions and values can be properly demonstrated. These conditions will be addressed through the Mitigation Plan.

PROPOSED MITIGATION: The project proposes a combination of several different mitigation elements intended to compensate for lost buffer functions and values, independent of the wetland rating, including the donation and preservation of a 61-acre property to the City (Mitigation Site – the proposed Penny Creek Natural Area), habitat and vegetative enhancement of the critical area on the Project Site, and the subsequent habitat and vegetative enhancement of select areas of the Mitigation Site. The Mitigation Plan will include elements of environmental education, including the design and installation of interpretative signage and information kiosks, as well as a clearly marked trail system. The proposed mitigation measures will result in a net gain in critical area functions and values compared to existing conditions.

The Mitigation Plan consists of the following elements:

- Preservation of **61 acres** of high-quality wetland and riparian habitat;
- Creation of approximately **5,500 linear feet (lf) of trails**, including boardwalks and bridges;

- Habitat & Vegetation Enhancement:
    - Project Site -- Habitat & Vegetative Enhancement **138,816 sf (3.1 ac)**
    - Mitigation Site -- Habitat & Vegetative Enhancement **250,600 sf (5.8 ac)**

In addition to the mitigation plan, the preserved 61 acres of wetland will be donated to the City of Mill Creek in fulfillment of the regional benefit requirement for Innovative Development Design.

Critical Area Protection: All post-construction wetland and buffer areas will be permanently protected in Critical Area tracts, and buffer areas will be protected from human and pet intrusion with fencing where appropriate. Critical area signs will be installed at appropriate locations.

Performance Monitoring: All mitigation areas will be monitored and maintained for a minimum of 5 years to ensure goals, objectives, and performance standards are met.

Performance Security: A performance security device shall be secured by the applicant to ensure that all mitigation work is completed according to the approved plans. A separate performance security device shall also be secured to ensure monitoring and maintenance is carried out as specified in the approved mitigation plan for the duration of the monitoring period.

TABLE OF CONTENTS

LIST OF FIGURES

Note: All figures are located at the end of the report before the appendices.

LIST OF TABLES

LIST OF APPENDICES

CHAPTER 1. INTRODUCTION

1.1 Purpose of Report

A critical areas study for The Farm at Mill Creek property (referred to hereinafter as the Project Site) located in Mill Creek, Washington (**Figure 1**) was prepared by Talasaea Consultants, Inc. and summarized in the *Existing Conditions Report* (Talasaea, 2018). The Project Site is the location of a proposed multi-residential and commercial development. The Mitigation Site is the location of the off-site components of the Project's Mitigation Plan, and are addressed within this report below.

The purpose of this report is to: 1) describe potential impacts to critical areas resulting from the proposed development and 2) describe proposed mitigation for impacts to critical areas. The report has been prepared to comply with the requirements of Mill Creek Municipal Code (MCMC) Chapter 18.06 which governs *Environmentally Critical Areas* ("Mill Creek Municipal Code" 2016).

This report will provide and describe the following information:

- General Property Description;
- Proposed Development and Impacts; and
- Conceptual Mitigation Plan

1.2 Statement of Accuracy

The conclusions in this report are based on the results of analyses performed by Talasaea Consultants and represent our best professional judgment. To that extent and within the limitation of project scope and budget, we believe the information provided herein is accurate and true to the best of our knowledge. Talasaea Consultants does not warrant any assumptions or conclusions not expressly made in this report, or based on information or analyses other than what is included herein.

1.3 Qualifications

Field investigations and evaluations were conducted by Talasaea staff, including Bill Shiels, Principal; Jennifer Marriott, PWS, Senior Ecologist; and David R. Teesdale, PWS, Senior Wetland Ecologist. Bill Shiels has a Bachelor's Degree in Biology from Central Washington University and a Master's Degree in Biological Oceanography from the University of Alaska. He has over 40 years of experience in wetland delineation and mitigations. Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from the University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has over 15 years of experience in wetland delineations and environmental permitting. David Teesdale has a Bachelor's Degree in Biology from Grinnell College, Iowa, and a Master's Degree in Ecology from Illinois State University. He has 22 years of experience in wetland delineations and biological evaluations.

CHAPTER 2. GENERAL PROPERTY DESCRIPTION AND LAND USE

2.1 Project Location

The Farm at Mill Creek site is an approximately 17.4-acre assemblage of two parcels (Parcels A and B) located in Mill Creek (**Figure 2**). It is bound by the north by 132nd Street Southeast (SR-96), to the west and east by undeveloped properties, and to the south by single-family residential development. The Snohomish County Tax Parcel numbers for the site are Parcel A (28053300200200) and Parcel B (28053300200300). The Public Land Survey System location for this assemblage is the NW ¼ of Section 33, Township 28 North, Range 5 East, Willamette Meridian (W.M.).

The Mitigation Site is comprised of three parcels totaling approximately 61 acres (**Figure 2**). The Snohomish County Tax Parcel numbers are identified in **Figure 2**[1]. The Public Land Survey System location for this assemblage is the NW ¼ of Section 33, Township 28 North, Range 5 East, Willamette Meridian (W.M.).

CHAPTER 3. PROPOSED DEVELOPMENT AND IMPACTS

3.1 Project Description

The Applicant plans to develop The Farm at Mill Creek with mixed residential-commercial uses (**Appendix B, Sheet W1.2**). Ten buildings, including a parking garage, will be constructed with associated, necessary infrastructure. Proposed commercial tenants include major retailers (grocery stores, fitness, movie theater, clothing retail, etc.), minor retailers (restaurants, cafes, cellular stores, etc.), and other (daycare, medical services, etc.). Other site features will include pedestrian walkways, open space, and supporting utilities and stormwater facilities. Approximately 12.6 acres of the approximately 17.4-acre Site will be developed (72%). The remaining approximately 5 acres (28%) will be retained as a Native Growth Protection Area with amenities for public enjoyment and education.

A trail system is proposed that will extend across portions of the development and will connect the southwestern corner of the Project Site to the Mitigation Site to the south (**Appendix B**). The off-site portion of this trail connecting the Project and Mitigation Sites will be extended through property owned by the City of Mill Creek and the Creekside Estate Homeowners Association. Any boardwalks would be constructed on diamond pier footings (or similar product) that do not require excavation or importation of concrete to anchor the boardwalk piers and, therefore, would not constitute wetland fill that would require Corps permitting and Section 401 review by WDOE.

The stormwater system proposed for The Farm at Mill Creek will consist of an underground detention vault and water quality facility. On-site runoff and runoff generated from the neighboring Vintage at Mill Creek development to the east will be collected and routed through conveyance piping to the detention vault located centrally to The Farm project site. Stormwater will be detained and released at rates modeled to mimic the predeveloped, forested condition, as required by the 2012 Department of

[1] Letter designation “I” was not used for naming the Parcels to avoid confusion with the number “1” when using sans serif fonts.

Ecology Stormwater Management Manual for Western ("2012 Stormwater Management Manual for Western Washington" 2014). Stormwater treatment will be provided by a Modular Wetland unit located downstream of the detention facility and will be designed for Enhanced treatment of stormwater. Stormwater will be discharged through dispersion to the wetland located along the western portion of the property. The discharge will be split between two dispersion systems to more evenly distribute runoff to hydrate all portions of the wetland.

3.2 Non-Prescriptive Buffer Modifications

The proposed site development will avoid all direct wetland impacts. However, it will be necessary to modify the required protective buffer for Wetland A beyond what is normally provided under Mill Creek Code. Non-prescriptive buffer widths are allowed pursuant to MCMC 18.06.930.H, which is discussed in greater detail in **Chapter 6**.

The Applicant is proposing a reduced buffer width that averages approximately 54 feet between the northern and southern property lines along the western end of the development, with the width varying from approximately 108 feet to as little as five feet in select areas. The remaining buffer areas on the Project Site will be protected through fencing, walls, and dense barrier vegetation as described in the proposed critical areas mitigation plan.

Total project impacts include:

- Indirect wetland impacts (wetland as buffer) .....106,099 sf
- Trail/Boardwalk
    - Within wetland (elevated boardwalk) .....377 sf
    - Within buffer (trail) .....564 sf
- Temporary Construction Impacts (to buffer) .....5,606 sf

Conditions H1 and H2 will be addressed through the following Mitigation Plan. Details of the regional benefit and other mitigation elements are outlined below, and Condition 1 is explored in-depth in the following chapter. Condition H3 will occur during the permitting phase of this project. Conditions H1 and H2 will be met through a combination of actions, including:

1) Preservation and dedication of 61 acres of undeveloped land to the City of Mill Creek as a new park;
2) Enhancement and extension of an integrated trail system of more than a mile, comprised of gravel paths, boardwalks, and elevated pathways;
3) The inclusion of environmental education signage and kiosks around the park; and
4) A combination of habitat and vegetative enhancement and restoration on both the Project and Mitigation Sites.

The foundation of the Mitigation Plan is the acquisition and donation of 61 acres of undeveloped land to the City of Mill Creek. This 61-acre area has been labeled as the "Mitigation Site" on all graphics, plan sheets, and figures associated with this report. More details on the existing conditions of the Mitigation Site and the proposed

enhancements are provided below. It is important to note that the Mitigation Site is intended to provide the foundation of the development's Mitigation Plan, regardless of ratings of associated wetlands. It is intended that a clear value is associated with the land acquisition and donation that establishes the regional benefit to the City of Mill Creek, both in terms of the value of the habitat and the value of the land to the City. The dedication of a new park to the City will provide additional open space, thus providing more trails for local residents, additional areas of land where stormwater and floodwater management can occur, and the protection, restoration, and enhancement of a high-quality wetland currently degraded due to past land use practices (*i.e*., peat mining). Large open space areas are generally lacking in this area due to the required infill and encouraged high-density development based on the local comprehensive plan. This land preservation, enhancement, and dedication will help to fill a need for more passive recreational areas for local residents.

The Conceptual Mitigation Plan seeks to provide an over-arching design that interconnects trail segments with educational elements. Permissions over the in-between lands will be obtained in order to connect existing paths between the Project and Mitigation Sites and design a trail system that would be accessible to the general public.

While only a portion of the mitigation will occur adjacent to the wetland with the buffer being reduced, the greater mitigation plan will ensure increased protections over the greater wetland complex, of which Wetland A is a part. The dedication of a new park will assure regional benefit to both Wetland A and its associated wetland complex, as well as to the City. **Chapter 4** below assesses the proposed impacts to the Wetland A buffer as well as the proposed compensatory mitigation. Ultimately, the proposed mitigation exceeds the typical requirements for compensatory mitigation by virtue of the large area of preservation, dedication, and subsequent enhancement outlined within this mitigation plan.

3.3 Mitigation Sequencing

The design of the proposed project employs mitigation sequencing as required by MCMC §18.06.610. The requirements of this chapter state the following:

A. "When an alteration to a critical area is proposed, the applicant shall first demonstrate that all reasonable efforts have been taken to avoid or minimize impacts in that order (consistent with MCMC 18.06.210).
B. Unless otherwise provided in this chapter, compensatory mitigation shall be provided for all unavoidable alterations of a critical area or buffer in accordance with an approved critical area report and mitigation plan, and consistent with best available science, to ensure no net loss of critical area functions and values. Mitigation shall not be implemented until final city approval of the critical area report and a mitigation plan prepared in accordance with MCMC 18.06.530 and 18.06.620 is granted.
C. Mitigation shall be in-kind and on-site whenever possible. The director may approve exceptions to this requirement for proposals prepared in accordance with the innovative mitigation standards in MCMC 18.06.640.
D. All areas at which mitigation is performed shall be permanently protected and managed to avoid degradation and ensure protection of critical area functions and values into

perpetuity. Permanent protection shall be achieved through deed restriction or other protective covenant in accordance with MCMC 18.06.820. Management shall be specified in a manner acceptable to the director. (Ord. 2004-603 § 2)"

3.3.1 Avoidance and Minimization of Critical Areas Impacts

Per MCMC §18.06.150.A and 18.06.530.B.6, avoidance and minimization efforts must be demonstrated for any project that will impact critical areas. While no direct impacts to Wetland A will occur, the project is proposing to reduce the buffer for Wetland A below prescriptive widths. This is permitted under §18.06.930.H Performance standards – Wetland buffer widths.

The Site is currently zoned as East Gateway Urban Village, which specifies a developmental mixture of marketable residential, commercial, institutional, and public uses. Incumbent in this designation is the ability to create an urban village that meets the design criteria of MCMC §17.19 that is also economically viable. To that end, it was determined that an economically viable development must occupy a minimum footprint, below which the project would not be successful. Unfortunately, this minimum development footprint necessitates the reduction of the buffer for Wetland A below prescriptive widths. Therefore, avoiding impacts to critical areas (of which buffers are one) will not be possible.

Minimization of impacts was addressed through different site plan iterations and applying the best available science to determine which site plan best met the needs of the project while minimizing impacts to Wetland A. Compensatory mitigation for those unavoidable impacts to the Wetland A buffer will be provided through the enhancement of onsite portions of Wetland A and its remaining buffer and the purchase of approximately 61 acres of high-quality wetland and upland for future use as a City-owned nature park (the proposed Penny Creek Natural Area). The water quality and hydrology functions that the prescriptive buffer would provide are being replicated by the project's proposed stormwater system. Water quality will be maintained through the use of enhanced stormwater treatment technologies and will meet or exceed the water quality guidelines per the Washington Department of Ecology's 2012 Stormwater Manual, as amended in 2014, as required under MCMC §15.14.060. Hydrology will be maintained through the controlled release of treated stormwater to Wetland A. Finally, habitat functions of the buffer will be offset through enhancements of portions of the onsite area of Wetland A and the preservation of the 61-acre Mitigation Site (the proposed Penny Creek Natural Area). The habitat functions provided by the offsite area and proposed enhancement of Wetland A greatly exceed the habitat functions of the buffer under existing conditions. Analysis of the impacts to and mitigation for Wetland A are discussed in **Chapter 4**, below.

3.3.2 Mitigation Ratios to offset Critical Areas Impacts

The impacts and mitigation were evaluated in light of MCMC 18.06.980 to determine whether the usage of mitigation ratios was appropriate for this project. Required mitigation ratios for a Category II wetland are 3:1 or 12:1 for wetland creation and enhancement, respectively. Wetland creation is not realistic as there are no suitable areas to create new wetlands on the Project or Mitigation Sites that would not reduce the amount of intact mature upland buffer. This wetland complex needs to retain the

existing mature buffers where possible more than more wetlands are needed. Wetland enhancement would require almost 30 acres to offset indirect wetland impacts and was determined to be difficult to accomplish with the active beaver presence in this wetland complex.

Preservation was determined to be a better fit for this area given the habitats present on the Project and Mitigation Sites. MCMC 18.06.980.C outlines the parameters under which preservation can be used with ratios ranging from 10:1 to 20:1. The 61-acre Mitigation Site, including both wetlands and uplands, provides a preservation ratio of approximately 25:1. The approximately 41 acres of wetland within the Mitigation Site to be preserved provides a preservation ratio of almost 17:1.

Six criteria are outlined and explored in more detail below.

> *1. Preservation as mitigation is acceptable when done in combination with restoration, creation, or enhancement; provided, that a minimum of one-to-one acreage replacement is provided by restoration or creation.*
>
> No permanent wetland loss will occur as a result of the proposed project, and therefore, there is no direct wetland impact area to be replaced.
>
> *2. Preservation of at-risk, high-quality wetlands may be used as the sole means of mitigation for wetland impacts to Category III or IV wetlands when the impact area is less than one-half acre and the preservation occurs in the same drainage basin as the wetland impact.*
>
> Indirect impacts are proposed to 2.44 acres of a Category II wetland, though no permanent wetland loss will occur. The preservation is proposed within the same drainage basin as the indirect wetland impacts.
>
> *3. Preservation sites may include buffer areas adequate to protect the habitat and its functions from encroachment and degradation.*
>
> The preservation site will include as much buffer as occurs presently within the 61-acre Site. Many of the areas beyond the Mitigation Site are already built up or are not under common ownership.
>
> *4. Wetland creation, restoration, and enhancement opportunities shall have been considered, and preservation is the best mitigation option.*
>
> As stated above, preservation was determined to be the best mitigation option.
>
> *5. The preservation site has the potential to experience a high rate of undesirable ecological change due to on- or off-site activities.*
>
> The preservation site does have the potential to experience undesirable ecological change for a variety of reasons, including development pressure along the eastern edges. The condition of the Site currently is degraded and has opportunity for enhanced ecological function.

6. The area proposed for preservation is critical for the health of the watershed or basin.

The preservation area (Mitigation Site) is part of a large wetland/stream complex around Penny Creek and is a large part of the contributing basin for North Creek. This Site has very high potential to protect the health of this watershed as well as downstream waters.

CHAPTER 4. WETLAND IMPACT ANALYSIS

The Farm at Mill Creek project is proposing to use the provisions of innovative mitigation to address the indirect impacts to Wetland A. No part of Wetland A will be filled, or otherwise directly or permanently impacted as a result of the proposed site development. However, buffers will be reduced below the prescriptive allowable dimensions as defined in MCMC §18.06.930(H), and outlined above.

The proposed development will significantly reduce the width of the buffer for Wetland A over its entire length adjacent to the development. As was previously stated, there will be no direct permanent impacts to Wetland A. The water quality and hydrology functions that would have been provided by the standard buffer will now be provided by the development's stormwater management system. Therefore, the only long-term indirect impact to the wetland would be the loss of habitat that would be provided by the standard buffer width.

The mitigation plan has been designed to offset the loss of buffer functions through significant enhancement of portions of Wetland A on the Site. Enhancement of the wetland includes removal of non-native, invasive species, planting a variety of native wetland-adapted trees, shrubs, and emergent vegetation, and installation of habitat features, such as large woody debris, bird nesting boxes, and bat roosting boxes.

Preservation of this 61-acre site, with upland, wetland, and riparian habitat enhancements, allows expansion of the Thomas Lake ecosystem and creation of a high-value wildlife park that may be enjoyed by the local residents and the general public as a whole. Preservation of wetland and upland areas in this 61-acre site can serve as a component of mitigation credit when analyzed using the Washington State Department of Ecology's Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington" (T. Hruby 2012). We are providing this analysis below (**Appendix A**).

It should be noted that our analysis of credits and debits focuses solely on habitat functions. Since no wetland area is actually being lost, there are no losses of water quality or hydrology functions (the credit-debit system does not factor in buffer functions, only wetland functions).

The analysis of credits and debits (referred to as C/D, hereinafter) is similar to the current 2014 wetland rating system in that it develops a score of functions based on the ability of a wetland to provide the function in relation to the wetland's size. In other

words, impacts to a two-acre wetland that has a habitat score of 5 would require 10 acre-points of mitigation.

The first step is to provide a baseline existing conditions score for the wetland being impacted and also for the proposed mitigation area. The score for habitat functions using the C/D methodology may not be the same as the score for hydrology functions using the 2014 wetland rating system. The wetland rating system further assesses hydrology function by asking if the site has been identified as important for flood storage or flood conveyance in a regional flood control plan. The C/D hydrology assessment does not use this distinction. The baseline scores for Wetland A and for the offsite wetland mitigation area are provided below in **Table 1**.

Table 1. Baseline Scores for Wetland Functions.

	Wetland A			Offsite Wetland Mitigation Area		
FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	**Improving Water Quality**	**Hydrologic**	**Habitat**
Rating of Site Potential	M	L	H	M	L	H
Rating of Landscape Potential	M	H	L	M	H	L
Rating of Value	H	H	H	H	H	H
Score Based on Ratings	**7**	**7**	**7**	**7**	**7**	**7**

The next step in the analysis of C/D is to determine the relative value of the wetland being impacted. We reiterate that the actual reduction of functional value to Wetland A is restricted to habitat since no actual loss of wetland will occur. The impact area used for this calculation is the amount of "wetland as buffer" required to offset the lost wetland buffer (see **Appendix B**). The calculation of debits is contained in **Table 2**.

Table 2. Calculations of Debits.

Calculations	**Improving Water Quality**	**Hydrologic**	**Habitat**
Score for Wetland Unit	7	7	7
Impact (area in acres)	0*	0*	2.44
Basic Mitigation Requirements	0	0	17.08
Temporal Loss Factor[2]	1.5		
Mitigation Required (acre-points)	**0**	**0**	**25.62**

[2] Temporal loss factor is based on the type of wetland community being affected and the timing of mitigation. Mitigation will be concurrent with the development of the site and the community impacted is mostly emergent. Therefore, the temporal loss factor is 1.5, per the table provided on the Debits worksheet.

* Since no actual impacts to Wetland A will occur resulting from the project, there will be no loss of improving water quality and hydrologic functions. However, the "conversion" of wetland into buffer will likely cause some loss of habitat function in Wetland A.

The mitigation required (acre-points) represents the relative value of the functions being impacted, based on the wetland rating, and the size of the impact. In other words, any proposed mitigation must provide sufficient acre-points to fully offset the calculated debits on **Table 2**. The anticipated impacts to the habitat functions of Wetland A (a Category II wetland) would require, at a minimum, 25.62 acres of mitigation if the resultant mitigation area were also scored as a Category II wetland.

The next step is to calculate credits for the proposed wetland mitigation. The Project is proposing three types of mitigation to offset estimated reductions of functional value resulting from converting a wetland to buffer. These are: 1) Enhancement of Wetland A on the Site; 2) Enhancement of portions of the offsite wetland; and 3) Preservation of offsite wetland and upland areas (Mitigation Site). Our analysis of credits only considers the preservation of the offsite wetland and upland area to compensate for the anticipated indirect wetland impacts.

Calculating mitigation credits is similar to calculating the impact debits in that it involves estimating a future score for the mitigated wetland and the relative values of areas being preserved. These scores are then modified to determine their acre-point values; the area of wetland enhancement is multiplied by the estimated score for functions to determine the base mitigation acre-points, and the score of the offsite wetland is multiplied by its area to determine the base preservation acre-points. The base mitigation score is then multiplied by a Risk Factor to determine the final total credits available[3].

Since Wetland A is rated as a Category II, there is little that can be done to improve water quality, hydrology, or habitat in any measurable way within the context of the Credit-Debit methodology. However, the mitigation plan will still enhance some of the remaining portions of Wetland A onsite to ensure the remainder of Wetland A is not impacted by the proposed development. The Credit-Debit methodology may not be robust enough to measure an actual bump in habitat functions through enhancing a degraded Category II wetland. However, it does not follow that the actual habitat function of the wetland cannot be improved through the removal of non-native, invasive plant species and increasing its structural and native species diversity. Therefore, while vegetative enhancement activities are proposed within the onsite portions of Wetland A, those enhancements are offered as non-compensatory mitigation that is not accounted for in this Credit-Debit analysis and are provided as additional assurance that the wetland-as-buffer will function better than its existing condition.

[3] The risk factor is based on two main criteria: whether the mitigation occurs in advance of the construction or not (i.e., is there a temporary loss factor?), and if it follows the general guidelines for determining mitigation suitability per Washington Department of Ecology's Selecting Wetland Mitigation Sites using a Watershed Approach (Thomas Hruby, Harper, and Stanley 2009). A further criterion is also considered depending on the type of mitigation performed.

Determining the relative value of wetland and upland preservation required an estimate of each habitat contained within the offsite mitigation area. We determined that approximately 41 acres of the offsite area are wetland and that the remainder (approximately 20 acres) is upland. The calculation of the basic score for preservation credits is the same for determining the base score for both debits and mitigation credits. However, the preservation base score credit number for wetland preservation is further modified by three parameters. These are the wetland category, location in the landscape, that the level to which the area being preserved is threatened by potential development impacts. The scaling factors for upland preservation substitute connectivity to other habitats in place of wetland category. These scaling factors are further subdivided into two groups, "factor if area is replaced" and "factor if area is not replaced." General guidance states that "factor if area is replaced" is appropriate to use if the mitigation at a minimum replaces the area of wetland lost, where "factor if area is not replaced" is appropriate where the wetland area lost is not completely replaced. Since no (direct) wetland loss has occurred that would need replacement, we assumed the former category of "factor if area is replaced" as no net loss (of wetland area) is the baseline condition outlined. The calculations for the preservation of wetland and upland are contained in **Table 3**.

Table 3. Calculating Credits for Wetland Preservation.

Calculating Credits when Preserving Wetlands	Improving Water Quality	Hydrologic Functions	Habitat Functions	Upland Habitat Functions
Scores of wetland being preserved	7	7	7	5
Acres of preservation	41			20
Basic Score (score x acres of wetland being preserved)	287	287	287	100
Scaling Factors Wetland Category Connections (upland only)	0.08			0.025
Location	0.05			0.05
Threat	0.05			0.05
Sum of Scaling Factors	0.18			0.125
Credits Available (basic score x sum of scaling factors)	**51.66**	**51.66**	**51.66**	**12.5**

The summary of debits and credits for the proposed mitigation plan is contained in **Table 4**. All numbers are expressed in terms of acre-points. In order for a mitigation proposal to be considered sufficient to offset the anticipated impacts, it must provide equal or greater numbers of credits for all functions. We ran this analysis using the alternative "factor if area is not replaced" scaling factor scores to ensure that there were no concerns over interpretation differences. There was still a net gain of credits even when using the worst-case scaling factors (0.025 for all scaling factors) for this Site.

Table 4. Summary of Debits and Credits.

Debits	Improving Water Quality	Hydrologic Function	Habitat Function
Wetland A	0	0	25.62
Credits	**Improving Water Quality**	**Hydrologic Function**	**Habitat Function**
Creation/Re-establishment	0	0	0
Rehabilitation	0	0	0
Enhancement	0	0	0
Wetland Preservation	51.66	51.66	51.66
Upland Preservation			12.5
Total Credits Available	51.66	51.66	64.16
Balance (Credits-Debits)	**51.66**	**51.66**	**38.54** (net **gain** of acre-points)

The results of this analysis of debits and credits clearly show a net benefit, a gain of habitat function of 38.54 acre-points, resulting from the proposed mitigation plan. Since no direct impacts to Wetland A will occur, preserving the offsite area provides a significant boost to improving water quality and hydrologic functions. Enhancing a portion of the onsite Wetland A in conjunction with preserving 61 acres of offsite wetland and upland provides enough habitat credits (gains) to more than offsets the habitat debits (losses) associated with the reduced buffer of Wetland A.

CHAPTER 5. PROPOSED MITIGATION

5.1 City of Mill Creek Policies and Guidance

The mitigation proposed for critical areas impacts is in accordance with the following:

- MCMC §18.06, *Environmentally Critical Areas.*
- Stormwater BMPs as defined in MCMC Chapter 15.14 *Surface Water Management Program*.

5.2 Proposed Mitigation

The project proposes a combination of several different mitigation measures intended to compensate for buffer functions and values lost through buffer encroachment. The project is proposing a combination of wetland, stream, and buffer preservation; habitat and vegetative enhancement in both wetlands and uplands; and more than a mile of connected trails, boardwalks, and elevated pathways connecting the Project and Mitigation Sites. The proposed mitigation will result in a net gain in critical area functions and values compared to existing conditions. The total mitigation proposed consists of the following (see also **Sheets W1.3 and W1.4 in Appendix B**):

- Project Site Habitat Enhancement & Restoration:
  - Wetland as Buffer -- Enhancement..... 106,172 sf (2.4 ac)
  - Wetland A -- Buffer Enhancement: ..... 28,179 sf (0.6 ac)
  - Temporary Construction Impacts – Restoration..... 4,465 sf (0.1 ac)

    138,816 sf (3.1 ac)
- Mitigation Site Habitat & Trail Enhancement & Restoration:
  - Vegetative/Habitat Enhancement: ..... 250,600 sf (5.8 ac)
  - Trail System – including Boardwalks ..... approximately 5,500 lf

    250,600 sf (5.8 ac)

TOTALS:
Preservation .....2,657,160 sf (61 acres)
Trails System.....over 5,500 lf
Project Site -- Habitat & Vegetative Enhancement ..... 138,816 sf (3.1 ac)
Mitigation Site -- Habitat & Vegetative Enhancement..... 250,600 sf (5.8 ac)

The proposed mitigation measures are described in more detail below.

5.2.1 Project Site – Buffer Enhancement & Restoration

Enhancement will occur within Wetland A on the Project Site. Mitigation measures will include the following.

1) Clear and grub invasive, non-native weedy species in the wetland buffer;
2) Selective treatment of invasive, weedy species, as determined appropriate, where clearing and grubbing is not feasible;
3) Spot-treatment of areas of reed canarygrass;
4) Scarify soils and amend them with topsoil from approved sources, as necessary;
5) Install habitat features, such as rootwads, down logs, stumps, and snags with bird nesting and bat roosting boxes;
6) Plant a variety of native tree, shrub, and emergent species to provide structural diversity and increased species diversity;
7) Install 3 inches of bark mulch in all bare soil areas, as determined appropriate;
8) Install critical area fencing and signs at buffer boundaries where walls are not present, or as determined appropriate.

Removal of non-native woody vegetation will include physical removal of the plant and root system. Where the roots cannot be removed, the plant will be cut off at ground level and the trunk treated with an herbicide that may be used in aquatic habitats (the herbicide will be applied by a trained and licensed technician).

Areas of the wetland that contain reed canarygrass will be mowed and sprayed with an approved herbicide a minimum of three (3) times during the dry summer months to ensure effective removal. The process involves mowing then letting the grasses grow to about 6-8 inches tall before re-spraying. This is repeated 3 or more times. Following this treatment regimen, the on-site wetland will be planted with native species that can either shade out or outcompete the remaining reed canarygrass. A candidate plant list is provided as **Sheets W2.0 in Appendix B**.

5.2.2 Mitigation Site - Trail and Vegetative Enhancement & Restoration

Vegetative enhancement and buffer restoration will occur in conjunction with the trail reconditioning on the Mitigation Site. A wide gravel path is located around the wetlands on the Mitigation Site. The gravel paths were historically used for vehicles, and range in width from approximately 10 feet to over 30 feet. A candidate plant list is provided on **Sheet W2.1 in Appendix B**.

Proposed enhancement and restoration tasks may include some combination of the following:

1) Identify 10-foot trail width to be established and improved, as determined necessary;
2) Remove excess gravel from outside of the 10-foot trail (excess gravel will be used to improve the trail in other areas on-site, as necessary);
3) Clear and grub invasive, non-native weedy species within identified 30-foot width along the established trail;
4) Identify where hydrologic connections need to be maintained, and install culverts or elevated boardwalk segments as indicated on final mitigation plans;
5) Install boardwalks as indicated on final mitigation plans;
6) Scarify soils and amend with topsoil from approved sources, as necessary, in areas converted from gravel roadway to plantings;
7) Install habitat features, such as rootwads, down logs, stumps, and snags with bird nesting and bat roosting boxes, as determined appropriate;
8) Install 3 inches of bark mulch in all bare soil areas in uplands;
9) Plant a variety of native deciduous and evergreen tree and shrub species along both sides of the trail in 10- to 15 -foot-wide planting areas;
10) Install interpretative signage as indicated on final mitigation plans;
11) Mark limits of gravel parking area near southern entrance to Mitigation Site with ecology blocks to prevent vehicles from leaving the designated parking area; and
12) Install critical area signs and an informational kiosk at limits of southern parking area.

5.2.3 Critical Area Protection

All post-construction wetland and buffer areas will be permanently protected in Critical Area tracts, and buffer areas will be protected from human and pet intrusion with fencing, walls, or barrier vegetation. Critical area signs will be installed along the mitigation boundaries where determined necessary.

5.3 Other Mitigation Plan Elements

5.3.1 Environmental Education Goals

The goals for the on-site component of the environmental education program are to:

- Honor the Site history (i.e. the Wibbelman Buffalo Farm);
- Educate citizens of the enhancement efforts of the project; and
- Describe the functions and values of all of the natural areas (Penny Creek and associated wetlands, Thomas Lake) as they relate to wildlife, public aesthetics, and protection of downstream resources, such as North Creek, and ultimately,

Lake Washington.

Site development design currently includes boardwalks and trails that will allow the public to access the Mitigation Site from the Project Site and surrounding areas. While they walk the trail system, they will learn about the mitigation effort and see how the effort transforms the wetland and associated buffer over time.

5.3.2 Interpretive Signage

Interpretive signage will be installed on-site describing the history of the mitigation area, the effects of beavers on the environment (both positive and negative), and the efforts to restore and enhance the Penny Creek corridor. These signs will also stress the importance of community stewardship in protecting the environment within the mitigation area as a way of protecting the built environment from damaging floods and providing valuable habitat for a variety of species, including Federally- or State-listed threatened or endangered species that may be present in Penny Creek. Examples of conceptual interpretive sign designs, boardwalks and platforms are provided within **Appendix C.**

The creation and installation of interpretive signage will be instrumental to the goal of environmental education. These signs will include photographs showing the historical uses of the property (i.e., buffalo farming), pre-development conditions of the wetland ecosystem, and the intended result of the mitigation. The public will be able to observe as the wetland and buffer mitigation changes the vegetative condition of the wetland over time.

Signage will also instruct the public on the types of wildlife (birds, fish, amphibians, reptiles, and mammals) that would inhabit the enhanced wetland and buffer areas. The signs will contain educational material to show how these types of wildlife utilize the environment and interact with each other.

The signs shall be created using the current state of the art manufacturing methods, using pigments that are resistant to sun bleaching. These types of signs have been shown to withstand many years in the open and to be resistant to vandalism or defacing by graffiti.

Additional interpretative signage could be added throughout the Mitigation Site addressing a variety of environmental and local issues.

5.3.3 Pedestrian Trail System

A trail system is proposed to be constructed on-site in conjunction with the proposed development that will connect to the existing paved road/trail south of the Site that is currently used by local pedestrians. Several gravel roads currently exist around the Mitigation Site that will be integrated into the larger trail system connecting the Project and Mitigation Sites. The area is also being used for some disruptive activities, such as off-road vehicles and dog walking. This connection will include the construction of raised boardwalks at select locations to facilitate improved hydrologic connections between wetland cells while also connecting existing and proposed pedestrian trails

both on- and off-site. Devices to prevent unauthorized motorized vehicles from entering these areas could be installed where appropriate.

5.4 Standard Mitigation Measures

Standard mitigation measures as outlined by the Department of Ecology will be implemented on the Site to further reduce the risk of long-term impacts to critical areas resulting from the proposed development. These measures include:

- Directing lights away from the wetland;
- Locating noise-generating activities away from the wetland;
- Ensuring that toxic runoff from parking lots, roads, or landscaping (herbicides and pesticides) do not run into the wetland;
- Use of fencing or dense vegetation along the buffer edge to prevent human or pet intrusions into the buffer,
- Employing Best Management Practices for dust control; and,
- Removal of non-native plants and replacement with approved native vegetation, to be bonded and monitored for five years with an 80% survival rate of plantings.

Table 5. Standard Mitigation Measures

Examples of Disturbances	Measures to Minimize Impacts
Lights	The buffer will be separated from the development by a retaining wall and dense plantings of native vegetation. Lighting will be placed so that illumination is directed away from the wetland and its buffer.
Noise	Noise-generated activities will be directed away from the wetland buffer.
Toxic Runoff	No pesticides or herbicides will be used within 100 feet of the wetland (the use of herbicides to control non-native, invasive species in the course of routine mitigation monitoring and maintenance will be allowed). Road runoff will be collected and transferred to the project's on-site stormwater treatment and detention facility. No direct discharge of road runoff or untreated stormwater runoff into the wetland buffer will be allowed.
Stormwater runoff	No untreated stormwater runoff into the wetland buffer will occur. Untreated and treated water will be routed through the on-site vault before entering the wetland buffer through an engineered dispersion trench.
Change in Water Regime	The water regimes for the on-site wetland will not significantly change, as hydration will be maintained through the dispersion trenches.
Pets and Human Disturbances	The wetland and buffer will be separated from the development by a retaining wall that will naturally preclude access into the critical areas. Fencing will be placed at the top of the retaining wall for additional protection.
Dust	Ultimate build-out conditions will include landscaped areas with ground cover (grass) and paved parking areas that will be regularly cleaned. During construction, water will be used to maintain low dust levels. Temporary seeding or mulching, along with silt fencing and interceptor swales, will also be used per the project SWPPP in order to reduce dust and runoff contamination.
Degraded Buffer Condition	Non-native plants will be removed from the degraded portions of the buffer. These areas will be replanted with native trees and shrubs as outlined within the

Examples of Disturbances	Measures to Minimize Impacts
	Mitigation Plan. These restored areas will be monitored for a minimum of five (5) years.

5.5 Mitigation Design Elements

5.5.1 Planting

Plant species have been chosen for a variety of qualities, including: adaptation to specific water regimes, value to wildlife, value as a physical or visual barrier, patterns of growth (structural diversity), and aesthetic values. Native tree and shrub species have been chosen to increase both the structural and species diversity of the mitigation areas, thereby increasing the value of the mitigation areas to wildlife for food and cover. Planting will be planned to occur during the dormant season (late fall, winter, or early spring) to maximize the chances for successful plant establishment and survival.

5.5.2 Habitat Features

Down logs, snags, and stumps will be incorporated into the buffer mitigation areas to provide ecologically important habitat features for wildlife. All down woody material shall be coniferous species (western red cedar, Douglas fir, western hemlock, or Sitka spruce) obtained from the Project Site. Down logs and stumps provide the slow release of nutrients as the wood decays, and also provide cover for amphibians, small mammals, and other wildlife.

5.5.3 Irrigation

Therefore, a temporary irrigation system is not anticipated to be needed. Planting shall occur between November to February to take advantage of seasonal plant dormancy. All plants shall be watered immediately upon being installed. Plants may need supplemental watering during the first one or two seasons after planting during the dry season (generally June 15th to October 15th). Plants shall be monitored for drought stress, and if supplemental watering is required, it can be provided manually using a water truck. Watering shall occur at a minimum rate of one inch per week during the dry season.

5.5.4 Critical Area Protection

All post-construction critical areas will be permanently protected in Critical Area tracts, and buffer areas will be protected from human and pet intrusion with fencing. Critical area signs will be installed along the mitigation boundaries.

5.6 Mitigation Goals, Objectives, and Performance Standards

The primary goal of the mitigation project is to replace the functions and values lost through development impacts to the buffer for Wetland A. In order to accomplish this goal, the proposed mitigation plan will accomplish the following:

TOTALS:	
Preservation	2,657,160 sf (61 acres)
Trails System	over 5,500 lf
Project Site -- Habitat & Vegetative Enhancement	138,816 sf (3.1 ac)
Mitigation Site -- Habitat & Vegetative Enhancement	250,600 sf (5.8 ac)

A breakdown of the proposed habitat and vegetative enhancement areas is provided below:

- Project Site Habitat Enhancement & Restoration:
  - Wetland as Buffer -- Enhancement..... 106,172 sf (2.4 ac)
  - Wetland A -- Buffer Enhancement: ..... 28,179 sf (0.6 ac)
  - Temporary Construction Impacts – Restoration..... 4,465 sf (0.1 ac)

  138,816 sf (3.1 ac)
- Mitigation Site Habitat & Trail Enhancement & Restoration:
  - Vegetative/Habitat Enhancement: ..... 250,600 sf (5.8 ac)
  - Trail System – including Boardwalks ..... approximately 5,500 lf

  250,600 sf (5.8 ac)

The land preservation and dedication, as well as construction of the proposed trail system components, educational signage, and other non-habitat or vegetative enhancement elements of the mitigation plan, will be addressed through the as-built drawings of the project once construction is completed.

The success of the above mitigation actions relating to habitat and vegetative enhancement will be evaluated based on specific objectives and performance standards, including invasive species removal and creating species diversity. Objectives and performance standards will be included in the final mitigation plan. Each objective will include one or more measurable performance standards. All mitigation areas will be monitored and maintained for a minimum of 5 years to ensure all goals, objectives, and performance standards are met.

Mitigation actions will be evaluated through the following objectives and performance standards. See **Chapter 6** for a description of the monitoring methods that will be used to evaluate the success of the mitigation area.

Objective A: Restore and enhance the habitat structure and plant species diversity in the buffer restoration areas.

Performance Standard A1: At least 10 species of desirable native plants will be present in the buffer and wetland enhancement areas combined during each year of the monitoring period.

Performance Standard A2: Percent survival of all planted woody species must be at least 100% at the end of Year 1 (per contractor warranty), and at least 80% for each subsequent year of the monitoring period.

Performance Standard A3: Coverage of native woody species will be 10% at the end of Year 1, 20% at the end of Year 2, and 30% at the end of Year 3. Woody coverage may be comprised of both planted, existing, and recolonized native species; however, to maintain species diversity, at no time shall a recolonized species (e.g., red alder) comprise more than 35% of the total calculated aerial woody coverage.

Objective B: Increase the overall habitat functions of the post-development mitigation areas by incorporating habitat features (i.e., snags with bird nest boxes, down logs, rootwads, and stumps) into the buffer enhancement areas.

Performance Standard B1: After construction, the enhanced areas will contain at least 75 habitat features, including down woody material (logs, rootwads, stumps, etc.) and snags with swallow nest boxes.

5.7 Construction Sequencing

The following provides the general sequence of activities anticipated to be necessary to complete this project. Some of these activities may be conducted concurrently as the project progresses.

1. Hold pre-construction meeting between the Contractor, Owner, City staff, and Environmental Consultant to review the work areas, clearing limits, and scope of work.
2. Survey and flag clearing limits/work area limits and critical area buffers.
3. Obtain approval of clearing limits from City and Environmental Consultant.
4. Install silt fencing and/or tree/vegetation protection fencing at clearing limits.
5. Install other erosion control BMPs per the TESC plan.
6. Clear vegetation where indicated on Final Mitigation Plans.
7. Restore soils through the addition of topsoil or organic soil amendments as indicated on Final Mitigation Plans (to be prepared in the future).
8. Mulch all cleared/graded/disturbed soil areas in mitigation areas as indicated on Final Mitigation Plans (to be prepared in the future).
9. Install plant material as indicated on the mitigation planting plan.
10. Complete site cleanup and install critical area fences and signs.

CHAPTER 6. REGIONAL BENEFIT

As stated in **Chapter 3**, the proposed site development plan seeks to reduce the standard 200-ft Category II wetland buffer below normal allowed reductions, to as narrow as five feet in one area. The full 200-ft Category II wetland buffer will be provided by using approximately 106,172 sf of Wetland A as buffer (wetland as buffer or "paper fill") and mitigating as if this area of wetland had been filled[4]. The director may allow the wetland buffer to be reduced pursuant to MCMC 18.06.930.H. MCMC §18.06.630.H states:

H. "The director shall have the authority to reduce the width of the standard buffer on a case-by-case basis if all of the following criteria are met:

    1. The buffer is adjacent to a critical area that is being significantly restored through a city-approved mitigation plan that has regional benefit to critical area functions as determined by the director.

[4] No actual wetland fill will occur.

The proposed development plan includes substantially restoring and enhancing the onsite portion of Wetland A that is not being converted into wetland buffer. The onsite portion of the wetland is vegetated predominantly with reed canarygrass with patches of non-native blackberry interspersed. The mitigation plan will remove and control the non-native blackberry while replanting with a variety of native wetland-adapted trees and shrubs. It is anticipated that the trees and shrubs, at maturity, will provide sufficient shading that will exclude most of the reed canarygrass present. The increased species and structural diversity will substantially improve the functions and values of the onsite portion of the wetland.

The wetland area being converted to buffer will be similarly enhanced through removal and control of non-native plant species and replanting with a variety of native trees and shrubs. Since the "wetland-as-buffer" area is still essentially a wetland, the effect will be a significant improvement of wetland functions and values in terms of habitat potential.

Water quality and hydrology functions and values of the buffer will be replicated through technology. Enhanced stormwater detention and treatment will provide the water quality protections of the standard wetland buffer. Detained and treated stormwater will be released over a broad area under the proposed gabion wall along the western end of the development. The release of stormwater in this manner will help maintain wetland hydrology without creating point source discharges.

Finally, regional benefit will be fulfilled by donating the 61-acre to the City of Mill Creek for use as a regional park.

2. A critical area report has been submitted to the city that demonstrates the reduced buffer will protect the functions and values of the critical area being restored.

   A companion Critical Areas Report has been prepared for this project. Chapter 4 of this report utilizes the Washington State Department of Ecology's Debit-Credit analysis to demonstrate that the proposed mitigation plan more than offsets the impacts resulting from the development proposal.

3. The reduced buffer shall be clearly described in any applicable SEPA, MDNS or EIS document and shall be subject to review and comment by the public agencies with jurisdiction."

   The reduced buffer will be clearly described in all applicable SEPA, MDNS, or other required documents and will be available for review by public agencies with jurisdiction.

The proposed mitigation plan also includes the purchase and subsequent transfer to the City of Mill Creek of the old Pacific Topsoils (Natural 9 Holdings) property to the south to

be used as a park and natural area. The old Pacific Topsoils property was part of a peat-mining operation. Since the end of active mining operations, the property has been reverting to an extensive aquatic habitat primarily due to beaver activity.

CHAPTER 7. MONITORING PLAN

7.1 Monitoring Schedule

Performance monitoring of the mitigation areas will be conducted according to all applicable code/regulatory requirements and permit conditions. MCMC 18.06.630 outlines the basic requirements for monitoring for the City of Mill Creek. Monitoring will occur for a minimum of five years and will be conducted according to the schedule presented in **Table 8** below. Monitoring will be performed by a qualified biologist or ecologist.

Table 6. Projected Schedule for Performance Monitoring and Maintenance Events

Year	Date	Maintenance Review	Performance Monitoring	Report Due to Agencies
Construction Completion & 30 Days after Planting	Fall	X	Baseline Data Collected	X
1	Spring	X	X	X
	Fall	X	X	X
2	Spring	X	X	X
	Fall	X	X	X
3	Spring	X		
	Fall	X	X	X
4	Spring	X		
	Fall	X	X	X
5	Spring	X		
	Fall	X	X	X*

*Obtain final approval to facilitate bond release from the City of Mill Creek (presumes performance criteria are met).

7.2 Monitoring Reports

Each monitoring report will adhere to the requirements of MCMC 18.06.630 and will also utilize the Corps document titled Annual Monitoring Report Format Requirements (USACE Regulatory Guidance Letter No. 08-03, OCT 2008). The reports will include:

1. Project Overview;
2. Requirements;
3. Summary Data;
4. Maps and Plans; and
5. Conclusions.

If the performance criteria are met, monitoring will cease at the end of year five, unless objectives are met at an earlier date and the City accepts the mitigation project as successfully completed.

7.3 Monitoring Methods

The following monitoring methods will be used to evaluate the approved performance standards.

7.3.1 Methods for Monitoring Vegetation Establishment

Vegetation monitoring methods may include plant counts; photo-points; random sampling; sampling plots, quadrats, or transects; stem density; visual inspection; and/or other methods deemed appropriate by the permitting agency or agencies. Vegetation monitoring components may include general appearance, health, mortality, colonization rates, percent survival, volunteer plant species, and invasive weed cover, depending on the metrics defined in the performance standards. Permanent vegetation sampling plots, quadrats, and/or transects will be established at selected locations to adequately sample and represent all of the plant communities within the mitigation project areas. The number, exact size, and location of transects, sampling plots, and quadrats will be determined at the time of the baseline assessment.

The established vegetation sampling locations will be monitored and compared to the baseline data during each performance monitoring event to aid in determining the success of plant establishment. The species and location of all shrubs and trees within this area will be recorded at the time of the baseline assessment and will be evaluated during each monitoring event to determine percent survival.

7.3.2 Permanent Photo Stations

Locations will be established within the mitigation area from which panoramic photographs will be taken throughout the monitoring period. These photographs will document general appearance and relative changes within the plant community. Review of the photos over time will provide a semi-quantitative representation of success of the planting plan. Vegetation sampling transect/plot/quadrat and photo-point locations will be shown on a map and submitted with the baseline assessment report and yearly performance monitoring reports.

7.3.3 Wildlife

Birds, mammals, reptiles, amphibians, and invertebrates observed in the wetland and buffer areas (either by direct or indirect means) will be identified and recorded during scheduled monitoring events and at any other times observations are made. Direct observations include actual sightings, while indirect observations include tracks, scat, nests, song, or other indicative signs. The kinds and locations of the habitat with the greatest use by each species will be noted, as will any breeding or nesting activities.

7.3.4 Site Stability

Observations will be made of the general stability of soils in the mitigation areas during each monitoring event. Any evidence of soil erosion or instability will be recorded and the Owner notified so that corrective measures can be taken.

CHAPTER 8. MAINTENANCE AND CONTINGENCY

Regular maintenance reviews will be performed according to the schedule presented in **Table 8** to address any conditions that could jeopardize the success of the mitigation project. Following maintenance reviews by the biologist or ecologist, required maintenance on the site will be implemented within ten (10) business days of submission of a maintenance memo to the maintenance contractor and permittee.

Established performance standards for the project will be compared to the yearly monitoring results to judge the success of the mitigation. If during the course of the monitoring period, there appears to be a significant problem with achieving the performance standards, the permittee shall work with the City to develop a Contingency Plan in order to get the project back into compliance with the performance standards. Contingency plans can include, but are not limited to, the following actions: additional plant installation, erosion control, and plant substitutions of type, size, quantity, and/or location. If required, a Contingency Plan shall be submitted to City by December 31st of any year when deficiencies are discovered.

The following list includes examples of maintenance (M) and contingency (C) actions that may be implemented during the course of the monitoring period. This list is not intended to be exhaustive, and other actions may be implemented as deemed necessary.

- During year one, replace all dead woody plant material (M).
- Water all plantings at a rate of 1" of water every week between June 15 – October 15 during the first two years after installation, and for the first two years after any replacement plantings (C & M).
- Replace dead plants with the same species or a substitute species that meet the goals and objectives of the mitigation plan, subject to Talasaea and City approval (C).
- Re-plant area after the reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.) (C).
- Remove/control weedy or exotic invasive plants (e.g., Scot's broom, reed canarygrass, Himalayan blackberry, purple loosestrife, Japanese knotweed, etc.) by manual or chemical means approved by permitting agencies. Use of herbicides or pesticides within the mitigation area would only be implemented if other measures failed or were considered unlikely to be successful, and would require prior City approval. All non-native vegetation must be removed and disposed of off-site. (C & M).
- Weed all trees and shrubs to the dripline and provide 3-inch deep mulch rings 24 inches in diameter for shrubs and 36 inches in diameter for trees (M).
- Remove trash and other debris from the mitigation areas twice a year (M).
- Selectively prune woody plants at the direction of Talasaea Consultants to meet the mitigation plan's goal and objectives (e.g., thinning and removal of dead or diseased portions of trees/shrubs) (M).
- Repair or replace damaged structures, including signs or fences (M).

CHAPTER 9. FINANCIAL GUARANTEES

The Applicant shall provide a financial guarantee (bond, assignment of funds, or similar instrument as approved by the City) to ensure that the mitigation plan is fully implemented and monitoring and maintenance are performed as proposed. The financial guarantee shall be in accordance with the requirements of MCMC 18.06.650 and shall be in place prior to the commencement of mitigation construction. The financial guarantee shall be in the amount of 125 percent of the estimated cost of the uncompleted actions or the estimated cost of restoring the functions and values of the critical area at risk, whichever is greater. The final amount shall be based on a detailed itemized cost estimate of the mitigation work. The financial guarantee shall remain in place until the City determines, in writing, that the standards bonded for have been met. Once the mitigation installation has been accepted by the director, the bond may be reduced to 25 percent of the original mitigation cost estimate and shall become a maintenance surety.

CHAPTER 10. SUMMARY

The Farm at Mill Creek Project Site is approximately 17.4 acres in size and is dominated by invasive grasses and shrubs. The site contains one wetland (Wetland A) that extends off-site to the west. Wetland A rated as a Category III wetland, which requires a standard 100-foot buffer for High Impact Land Uses per MCMC §18.06.930. The Mitigation Site encompasses the off-site areas to the west and south that are included within the Mitigation Plan. A series of wetlands extends from the Site south to Thomas Lake through which Penny Creek flows. Buffers for these features do not extend onto the Site.

The Applicant plans to develop The Farm at Mill Creek, which will consist of mixed residential and commercial business. Other Project Site features will include pedestrian walkways, open space, and supporting utilities and stormwater facilities. The on-site amenities will link to off-site trails to connect the Project and Mitigation Sites to allow access to a large pedestrian trail system that will be part of the Mitigation Plan. The proposed stormwater system will consist of an underground detention vault and water quality facility designed to collect, detain, and treat runoff collected on-site. The stormwater facility will be designed to store and release runoff to meet or exceed the requirements of the 2012, as amended in 2014, Department of Ecology Stormwater Management Manual for Western Washington.

No wetland fill is proposed with this Project. The applicant is proposing to significantly reduce the wetland buffer beyond the prescriptive allowances that will cause approximately 106,099 square feet (sf) of indirect wetland impacts due to the reduced buffer. Per MCMC §18.06.930(H), non-prescriptive buffer modifications are allowed if both regional benefit and protection of wetland functions and values can be properly demonstrated. These conditions will be addressed through the Mitigation Plan.

The project proposes a combination of several different mitigation elements intended to compensate for lost buffer functions and values, independent of the wetland rating,

including the donation and preservation of a 61-acre property to the City (Mitigation Site), habitat and vegetative enhancement of the critical areas on the Project Site, and the subsequent habitat and vegetative enhancement of select areas of the Mitigation Site. The Mitigation Plan will include elements of environmental education, including the design and installation of interpretative signage and information kiosks, as well as a clearly marked trail system. The proposed mitigation measures will result in a net gain in critical area functions and values compared to existing conditions. A summary of the proposed mitigation plan elements is provided below:

- Preservation of **61 acres** donated to the City of Mill Creek
- Creation of approximately **5,500 linear feet (lf) of trails**, including boardwalks and bridges
- Habitat & Vegetation Enhancement:
    - Project Site -- Habitat & Vegetative Enhancement **138,816 sf (3.1 ac)**
    - Mitigation Site -- Habitat & Vegetative Enhancement **250,600 sf (5.8 ac)**

All post-construction wetland and buffer areas will be permanently protected in Critical Area tracts, and buffer areas will be protected from human and pet intrusion with fencing where appropriate. Critical area signs will be installed at appropriate locations. All designated mitigation areas where plantings occur will be monitored and maintained for a minimum of 5 years to ensure goals, objectives, and performance standards are met.

CHAPTER 11. REFERENCES

"2012 Stormwater Management Manual for Western Washington." 2014. Manual 14-10–055. Washington State Department of Ecology.

Hruby, T. 2012. *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington, Final Report, Publication #10-06-11*. Olympia, WA: Washington State Department of Ecology.

Hruby, Thomas, Kim Harper, and Stephen Stanley. 2009. "Selecting Wetland Mitigation Sites Using a Watershed Approach." 09-06–032. Washington State Department of Ecology.

"Mill Creek Municipal Code." 2016. *October* 11: www.codepublishing.com/WA/MillCreek.

FIGURES

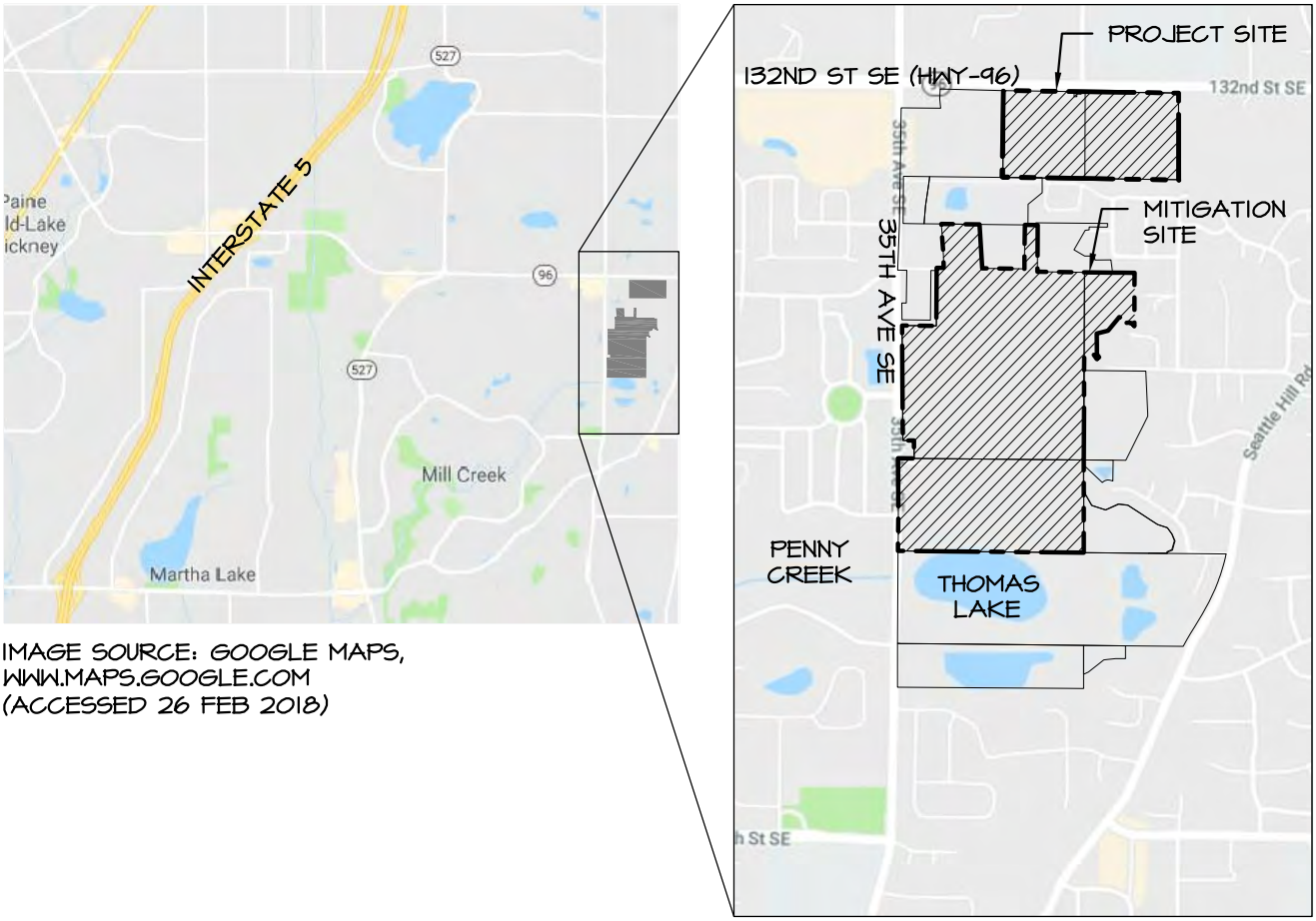


IMAGE SOURCE: GOOGLE MAPS,
WWW.MAPS.GOOGLE.COM
(ACCESSED 26 FEB 2018)

DRIVING DIRECTIONS:

1. FROM SEATTLE, BEGIN ROUTE TRAVELING NORTH ON INTERSTATE 5 (I-5)
2. TAKE EXIT 186 FOR WA-96E/128TH ST SW.
3. USE THE RIGHT TWO LANES TO TURN RIGHT ON TO 128TH STREET SE.
4. ROAD CONTINUES ONTO 132ND STREET SE
5. ARRIVE AT DESTINATION (ON THE RIGHT)

APPROXIMATE DESTINATION ADDRESS:
3900 132ND STREET SE
MILL CREEK, WA 98012

47.876955, -122.179470

NORTH

TALASAEA CONSULTANTS, INC.
Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 – Fax (425)861-7549

FIGURE #1

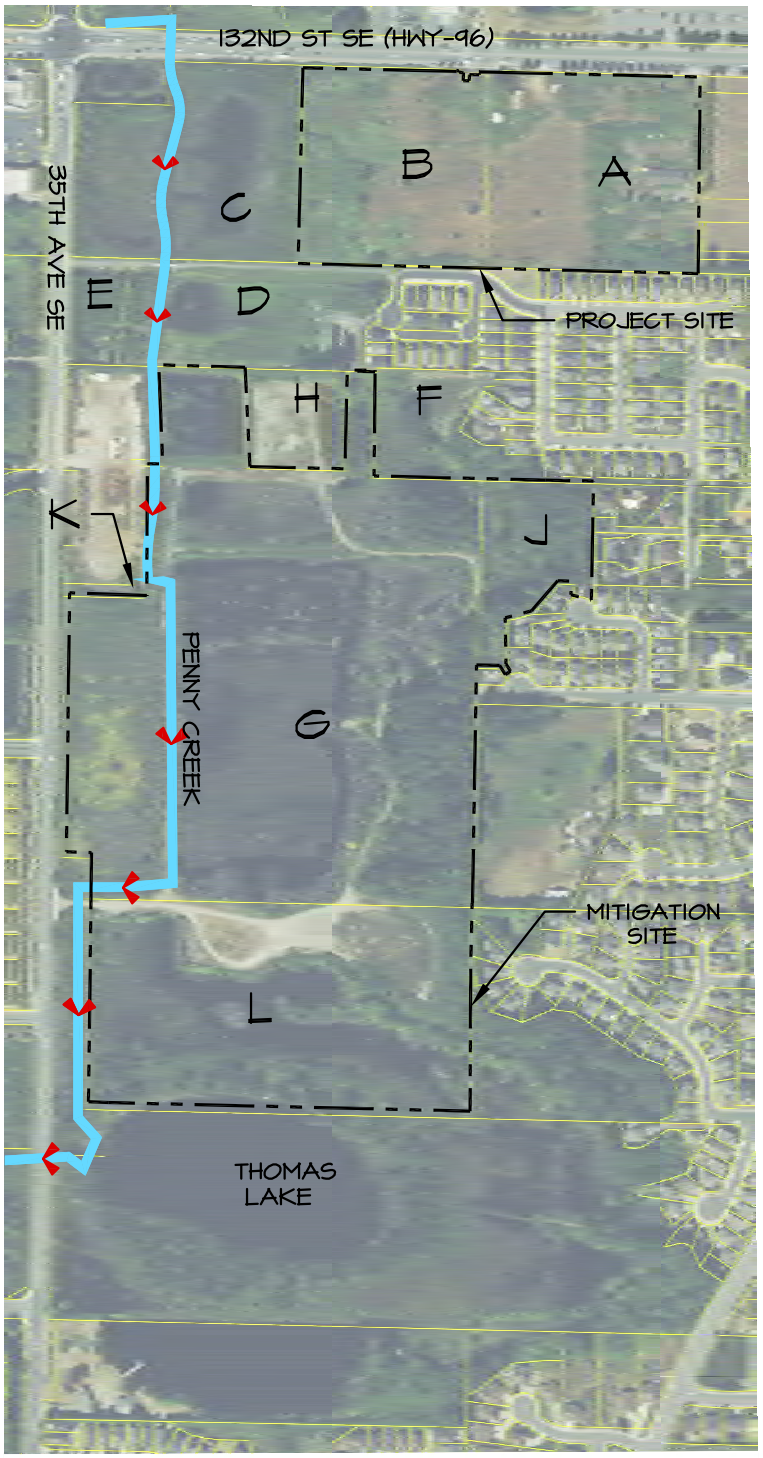
VICINTY MAP & DRIVING DIRECTIONS
THE FARM AT MILL CREEK
MILL CREEK, WASHINGTON

DESIGN	DRAWN	PROJECT
	MW/FH	726C
SCALE	NTS	
DATE	12-21-2018	
REVISED		

1

Z:\DRAWING\700-799\Tal726c\Plans\TAL-726c WP Figures 2018-12-21.dwg

PARCEL INFORMATION	
INDEX	PARCEL NUMBER
A	28053300200200
B	28053300200300
C	28053300204000
D	01135400099100
E	01135400002600
F	01135400099900
G	28053300206800
H	28053300206700
J	NA
K	28053300206900
L	28053300300200



GRAPHIC SCALE
(IN FEET)

0 300 600 1200

SCALE: 1" = 600'

NORTH

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Resource & Environmental Planning
15020 Bear Creek Road Northeast
Woodinville, Washington 98077
Bus (425)861-7550 – Fax (425)861-7549

FIGURE #2

PARCEL MAP
THE FARM AT MILL CREEK
MILL CREEK, WASHINGTON

DESIGN	DRAWN	PROJECT
	MW/FH	726C
SCALE	AS SHOWN	
DATE	12-21-2018	
REVISED		

2

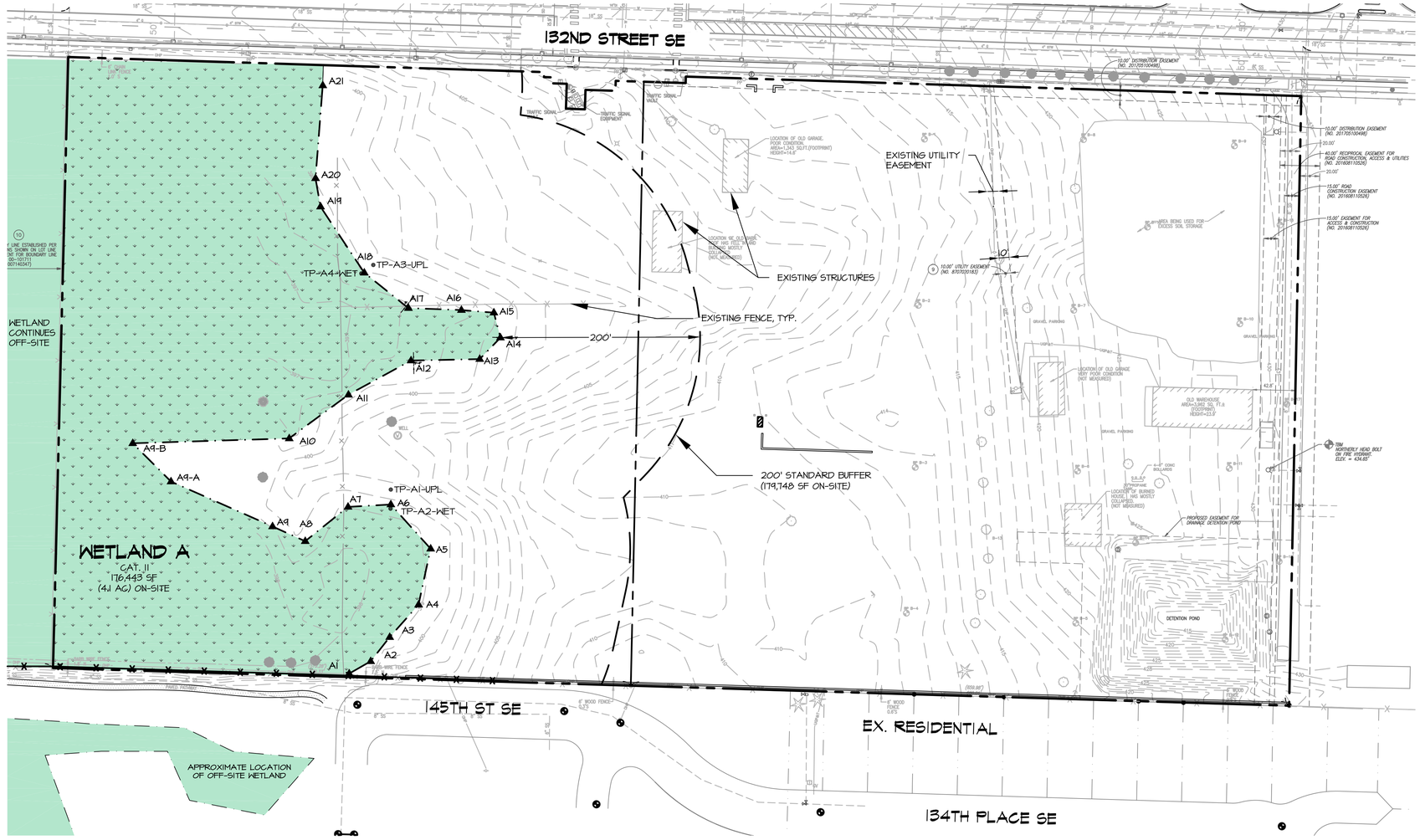
Z:\DRAWING\700-799\Tal726c\Plans\TAL-726c WP Figures 2018-12-21.dwg

APPENDIX A

Conceptual Mitigation Plan Sheets

W1.0. Existing Conditions Plan – Project Site
W1.1. Existing Conditions Plan – Mitigation Site
W1.2. Proposed Site Plan & Impacts Overview Plan – Project Site
W1.3. Mitigation Overview Plan – Project Site
W1.4. Mitigation Overview Plan – Mitigation Site
W2.0. Plant Communities Plan, Plant List & Notes – Project Site
W2.1. Plant Communities Plan & Details – Mitigation Site

NW & SW ¼ OF SECT. 33, TWNSHP. 28 N, RNGE. 5 E, W.M.



EXISTING CONDITIONS PLAN - PROJECT SITE

GRAPHIC SCALE (IN FEET)
0 30 60 120
SCALE: 1"=60'

NORTH

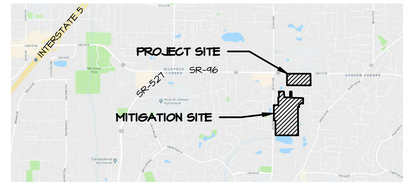
PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- WETLAND BUFFER
- 100 EXISTING CONTOUR
- ▲# WETLAND FLAG LOCATION*
- ●TP-# SOIL TEST PLOT LOCATION
- EXISTING TREES

* WETLAND A FLAGS FIELD VERIFIED BY ESA (1/20/2017). SURVEY BY LDC INC. (1/25/2018).

VICINITY MAP

NTS



SOURCE: GOOGLE MAPS; WWW.MAPS.GOOGLE.COM (ACCESSED 7/30/2018)

NORTH

CONTACTS

APPLICANT/OWNER
NAME: VINTAGE HOUSING DEVELOPMENT, LLC
ADDRESS: 369 SAN MIGUEL DRIVE, SUITE 135 NEWPORT BEACH, CALIFORNIA 92660
CONTACT: RYAN PATTERSON

ENGINEER/SURVEYOR
NAME: LDC, INC.
ADDRESS: 20210 142ND AVE NE WOODINVILLE, WA 98072
PHONE: (425) 806-1869
CONTACT: TOM ABBOTT SR., LG, LHG

ENVIRONMENTAL CONSULTANT
NAME: TALASAEA CONSULTANTS, INC.
ADDRESS: 15020 BEAR CREEK RD. NE WOODINVILLE, WA 98077
PHONE: (425) 861-7550
CONTACT: ANN OLSEN, RLA, SENIOR PROJECT MANAGAER
JENNIFER MARRIOTT PWS, SENIOR ECOLOGIST

SHEET INDEX

NOT FOR CONSTRUCTION

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CONCEPTUAL CRITICAL AREAS MITIGATION PLAN
EXISTING CONDITIONS PLAN - PROJECT SITE
THE FARM
MILL CREEK, WASHINGTON

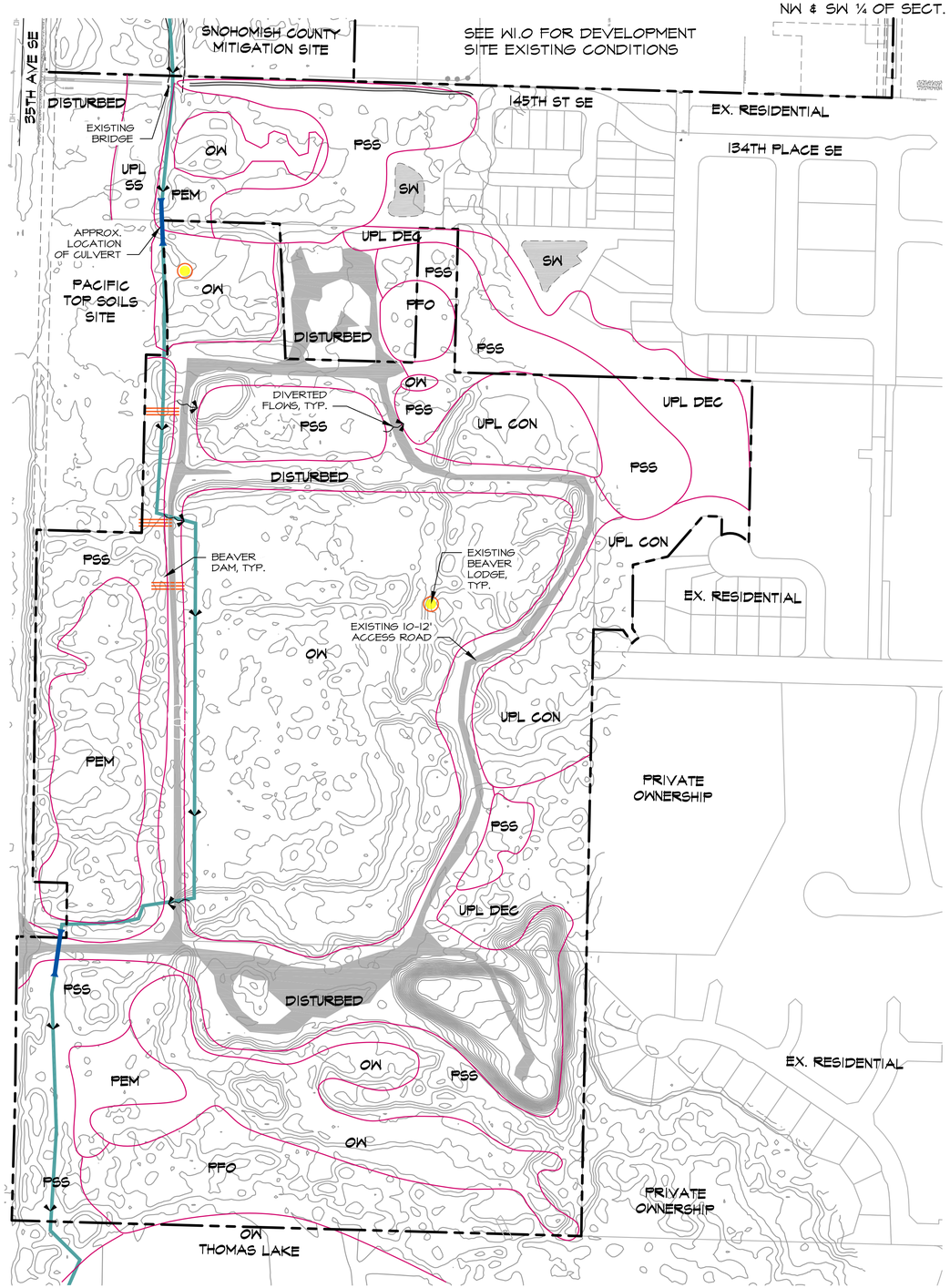
Revisions	Date	By
TAL EDITS	10-18-2018	ABS
CITY & DOE COMMENTS	12-21-2018	MK
SITE PLAN REVISION	01-04-2019	FH

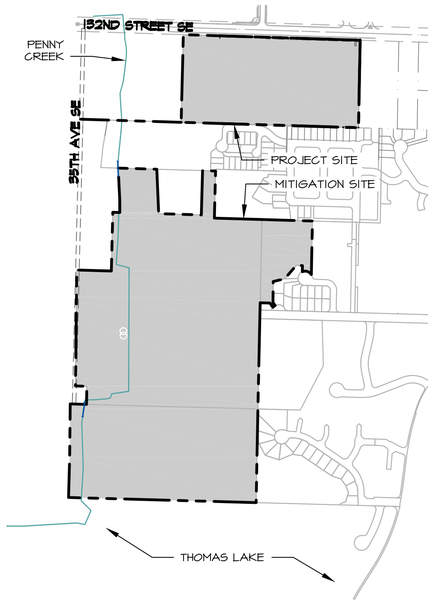
Date 8-9-2018
Scale AS NOTED
Designed AO/BS
Drawn ABS
Checked AO
Approved BS

Project # 1726

Sheet # W1.0

NW & SW ¼ OF SECT. 33, TWNSHP. 28 N, RNGE. 5 E, W.M.





PROJECT AREA KEY

SCALE: 1" = 500'

EXISTING CONDITIONS PLAN - MITIGATION SITE

GRAPHIC SCALE (IN FEET)
0 75 150 300
SCALE: 1"=150'
NORTH

EXISTING VEGETATION COMMUNITIES

DISTURBED	COMPACTED TRAILS AND ACCESS ROADS DUE TO PREVIOUS USE
OW	OPEN WATER
PEM	PALUSTRINE EMERGENT
PFO	PALUSTRINE FORESTED
PSS	PALUSTRINE SCRUB-SHRUB
SW	STORMWATER FACILITY
UPL CON	UPLAND CONIFER FOREST
UPL DEC	UPLAND DECIDUOUS FOREST
UPL SS	UPLAND SCRUB-SHRUB

NOTE: EXISTING FEATURES ARE NOT SURVEYED. VEGETATION WAS IDENTIFIED BY GOOGLE EARTH AERIAL (IMAGE DATED 5-23-2018) AND FIELD VERIFIED.

PLAN LEGEND

- PROPERTY LINE
- EXISTING GRAVEL ROAD
- XX — APPROX. LIMIT OF EXISTING VEGETATION COMMUNITY (SEE EXISTING CONDITIONS LEGEND)
- PENNY CREEK (NOT SURVEYED)
- EXISTING CULVERT (NOT SURVEYED)
- EXISTING BEAVER DAM
- EXISTING BEAVER LODGE
- DIRECTION OF DIVERTED PENNY CREEK FLOW
- 100 — EXISTING CONTOUR - LIDAR
- EXISTING TREES

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MILL CREEK, WASHINGTON

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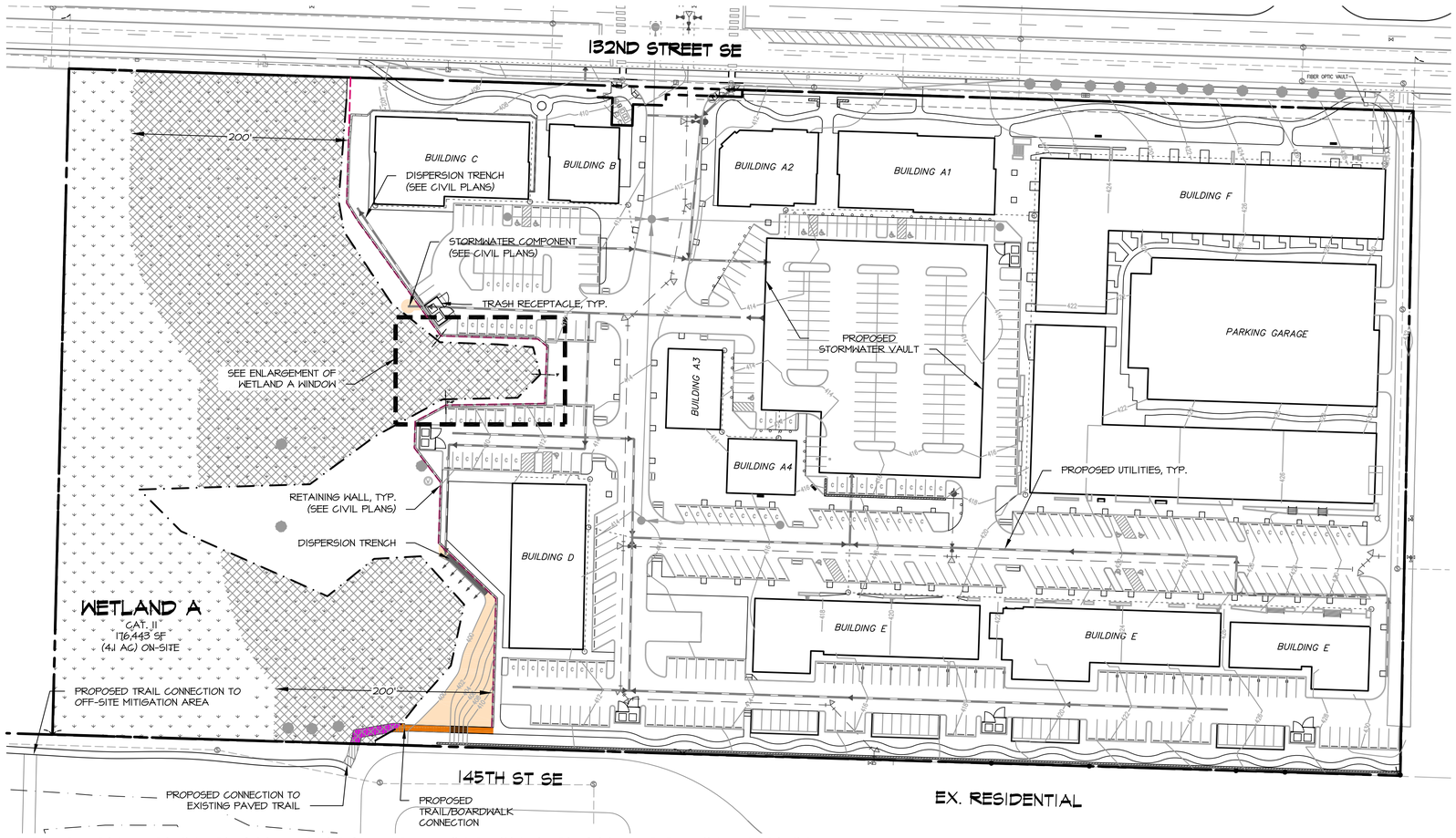
SITE PLAN REVISION	01-09-2019	FH

Date 8-9-2018
Scale AS NOTED
Designed AO/BS
Drawn ABS
Checked AO
Approved BS

Project # 726C

Sheet # WI.1

NW & SW ¼ OF SECT. 33, TWNSHP. 28 N, RNGE. 5 E, W.M.



PROPOSED SITE PLAN & IMPACTS OVERVIEW PLAN - PROJECT SITE

GRAPHIC SCALE (IN FEET)
0 30 60 120
SCALE: 1"=60'

NORTH

PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- POST CONSTRUCTION WETLAND BUFFER
- CLEARING/GRADING LIMIT (SEE CIVIL PLANS)
- EXISTING TREES

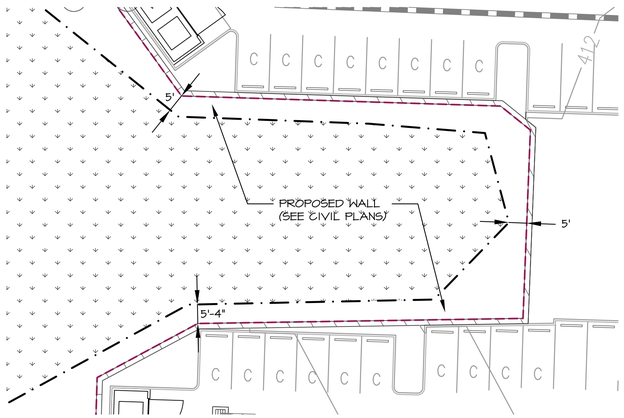
IMPACTS LEGEND

WETLAND IMPACTS

INDIRECT WETLAND IMPACTS	106,099 SF	
	106,099 SF	2.44 AC

BUFFER IMPACTS

INDIRECT WETLAND-AS-BUFFER IMPACTS FOR BOARDWALK CONSTRUCTION	377 SF	
TEMPORARY CONSTRUCTION IMPACTS (SEE CIVIL PLANS)	5,606 SF	
PERMANENT WETLAND BUFFER IMPACTS - TRAIL CONSTRUCTION	564 SF	
	6,547 SF	0.13 AC



ENLARGEMENT OF WETLAND A

GRAPHIC SCALE (IN FEET)
0 10 20 40
SCALE: 1"=20'

NORTH

SOURCE DRAWING: SITE PLAN PROVIDED BY LDC, INC DRAWING DATED 1/18/18 (PROVIDED 11/1/2018)

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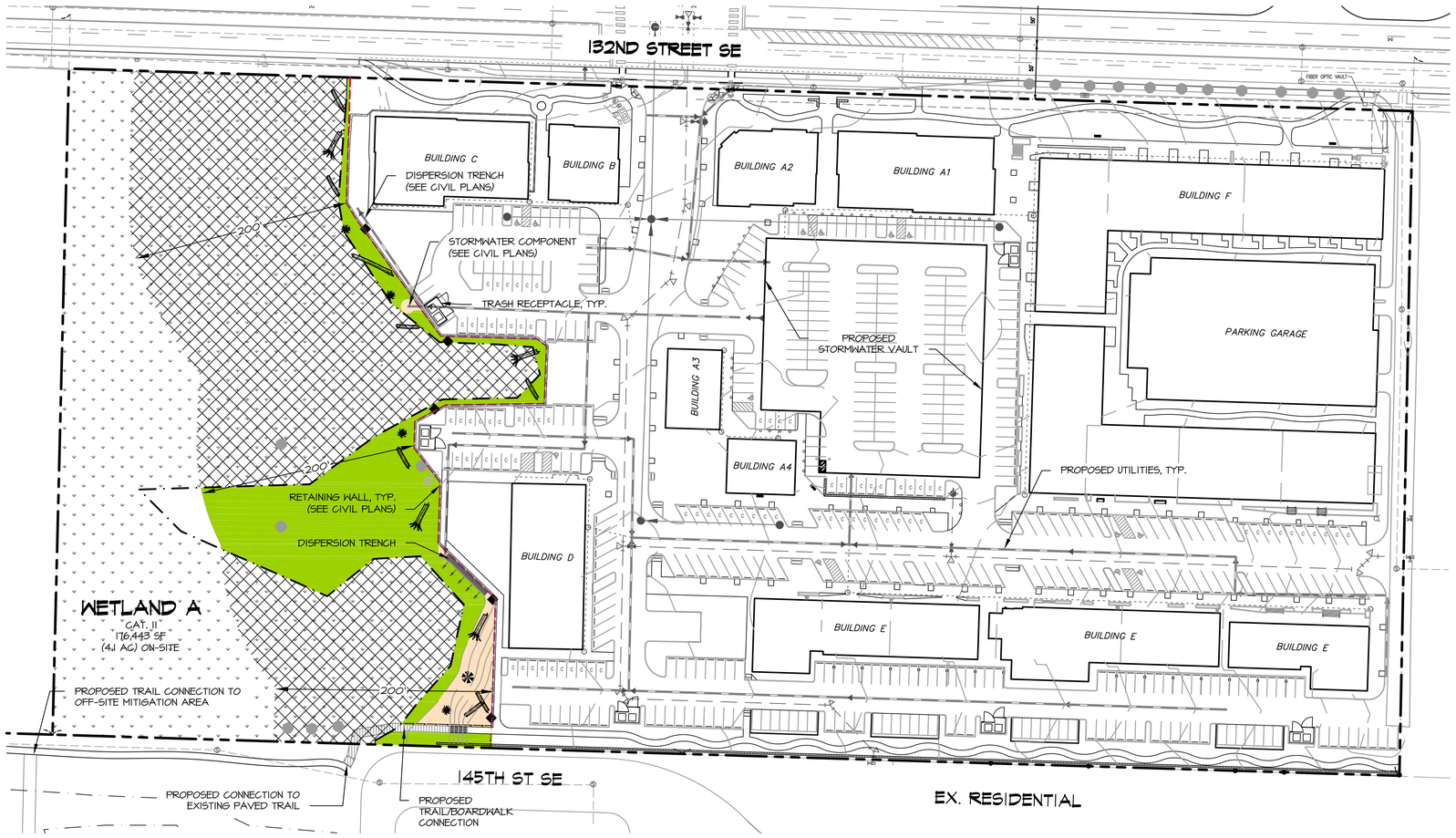
Scale AS SHOWN
Designed AO/BS
Drawn ABS
Checked AO
Approved BS

Project # 1726

Sheet # WL2

NW & SW ¼ OF SECT. 33, TWNSHP. 28 N, RNGE. 5 E, W.M.



MITIGATION OVERVIEW PLAN - PROJECT SITE

GRAPHIC SCALE (IN FEET)
0 30 60 120
SCALE: 1"=60'

NORTH

PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- POST CONSTRUCTION WETLAND BUFFER
- CLEARING/GRADING LIMIT (SEE CIVIL PLANS)
- EXISTING TREES

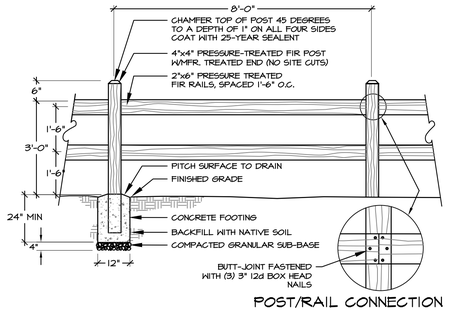
MITIGATION LEGEND

BUFFER MITIGATION

WETLAND-AS-BUFFER ENHANCEMENT*	106,172 SF	2.4 AC
WETLAND BUFFER ENHANCEMENT*	28,179 SF	0.6 AC
RESTORATION OF TEMPORARY CONSTRUCTION RELATED IMPACTS	4,465 SF	0.1 AC
TOTAL ON-SITE MITIGATION:	138,816 SF	3.1 AC

- CRITICAL AREA FENCE; SEE DETAIL 1, SHEET W1.3
- CRITICAL AREA SIGN; SEE DETAIL 2, SHEET W1.3
- LARGE WOODY DEBRIS
- SNAG WITH NEST BOX
- STUMP

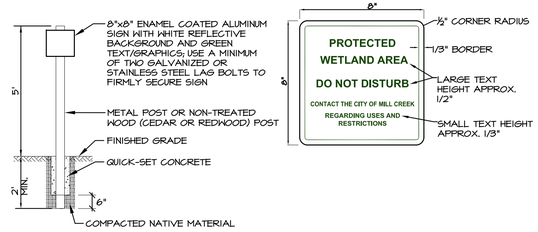
* IN ALL PROPOSED AREAS OF ENHANCEMENT, INVASIVE SPECIES WILL BE SELECTIVELY GRUBBED AND REMOVED. DETAILED LOCATIONS OF NON-NATIVE/INVASIVE VEGETATION REMOVAL WILL BE DETERMINED ON DETAILED CONCEPTUAL AND/OR FINAL CRITICAL AREA MITIGATION PLANS.



POST/RAIL CONNECTION

NOTES:
1. RAIL FENCE TO ALIGN WITH LAND GRADIENT.
2. TREAT WITH CLEAR PRESERVATIVE UPON COMPLETION OF INSTALLATION.
3. ALL FASTENERS TO BE GALVANIZED STEEL.

1 OPEN 2-BOARD FENCE DETAIL
N.T.S.



INSTALLATION NOTES
1. SIGNS SHALL BE POSTED AT AN INTERVAL OF ONE PER LOT OR EVERY 50 FEET, WHICHEVER IS LESS.
2. FINAL LOCATIONS OF SIGNS SHALL BE APPROVED IN THE FIELD BY TALASAEA CONSULTANTS PRIOR TO INSTALLATION.
3. SIGNS SHALL BE WORDED AS SHOWN OR WITH ALTERNATIVE LANGUAGE APPROVED BY DIRECTOR.

2 CRITICAL AREAS SIGN DETAIL
N.T.S.

MITIGATION CONSTRUCTION SEQUENCE

THE FOLLOWING PROVIDES THE GENERAL SEQUENCE OF ACTIVITIES ANTICIPATED TO BE NECESSARY TO COMPLETE THIS MITIGATION PROJECT. SOME OF THESE ACTIVITIES MAY BE CONDUCTED CONCURRENTLY AS THE PROJECT PROGRESSES.

1. CONDUCT A SITE MEETING BETWEEN THE CONTRACTOR, TALASAEA CONSULTANTS, AND THE OWNER'S REPRESENTATIVE TO REVIEW THE PROJECT PLANS, STAGING/STOCKPILE AREAS, MATERIAL DISPOSAL AREAS, AND EXISTING VEGETATION TO BE RETAINED.
2. SURVEY CLEARING LIMITS.
3. TALASAEA SHALL REVIEW CLEARING LIMITS AND SHALL FLAG TREES AND OTHER EXISTING VEGETATION TO REMAIN WITHIN THE PROJECT AREA. TALASAEA SHALL ALSO FLAG ANY WOODY MATERIAL TO BE SAVED AND STOCKPILED FOR LATER USE AS HABITAT FEATURES (STUMPS, SNAGS, DOWN LOGS, & BOULDERS)
4. INSTALL SILT FENCE AND ANY OTHER EROSION AND SEDIMENTATION CONTROL BMPS NECESSARY FOR WORK IN THE PROJECT AREAS.
5. INSTALL TREE PROTECTION FENCING AROUND EXISTING TREES AND VEGETATION TO REMAIN.
6. CLEAR AND GRUB EARTHWORK AREAS.
7. SURVEY EARTHWORK AREAS AND SET GRADE STAKES AS REQUIRED.
8. COMPLETE THE EXCAVATION OF MITIGATION AREAS TO PROPOSED GRADES.
9. INSTALL SNAGS, WEIRS, TETHERED LOGS, BURIED RAMP LOGS/ROOTWADS, STUMPS, & BANK LOGS.
10. PLACE TOPSOIL (SEE GRADING SPECIFICATIONS).
11. INSTALL IRRIGATION SYSTEM (SEE PLANTING SPECIFICATIONS).
12. PLACE WOODY DEBRIS (LONG & SHORT DOWN LOGS).
13. MULCH ALL GRADED BUFFER AREAS.
14. COMPLETE SITE CLEANUP AND INSTALL PLANT MATERIAL AS INDICATED ON THE MITIGATION PLANTING PLAN (SEE PLANTING SPECIFICATIONS).
15. INSTALL CRITICAL AREA FENCE & SIGNS.

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CONCEPTUAL CRITICAL AREAS MITIGATION PLAN
MITIGATION OVERVIEW PLAN - PROJECT SITE
THE FARM
MILL CREEK, WASHINGTON

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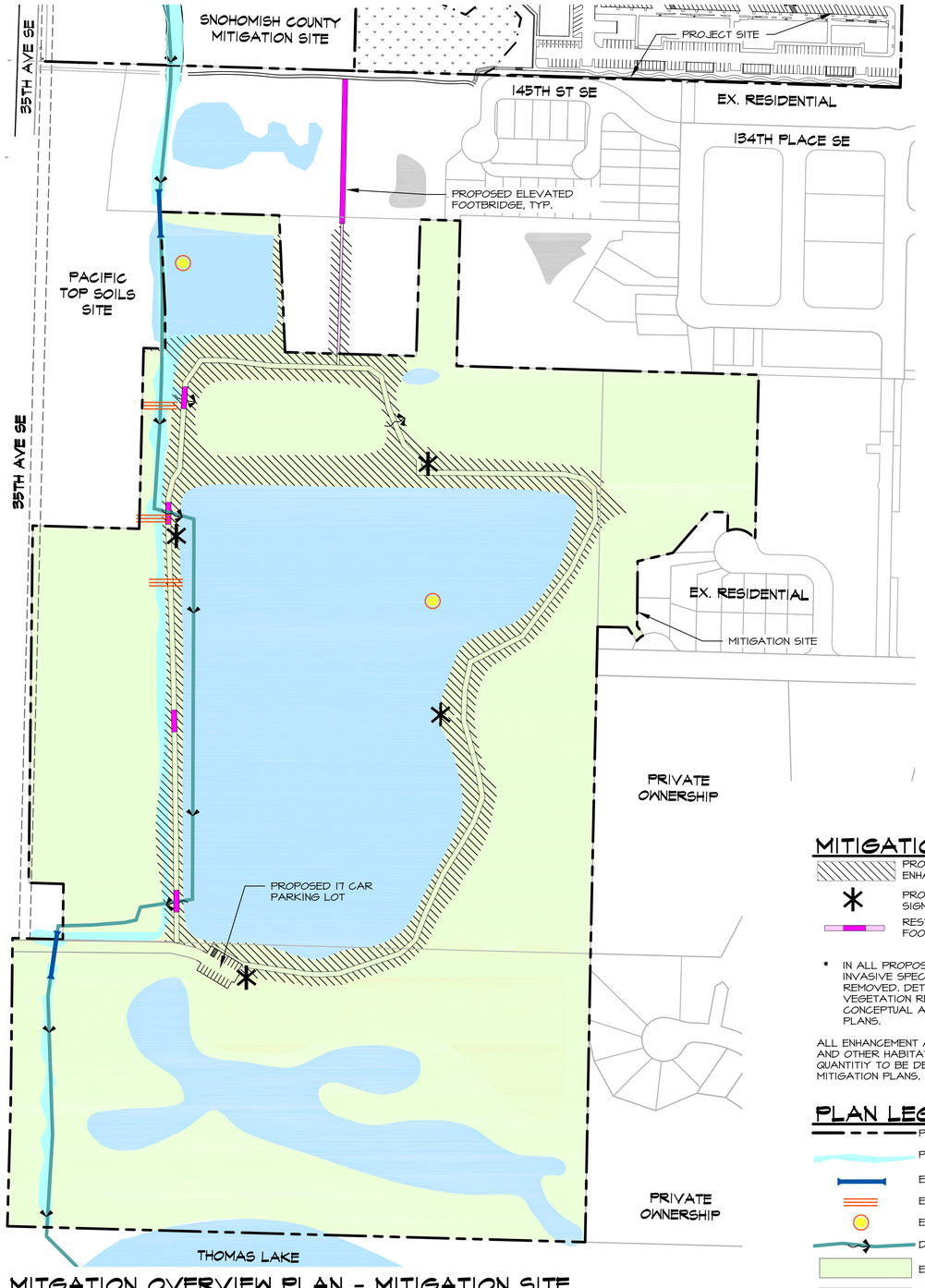
SITE PLAN REVISION	01-04-2019	FH

Date 8-9-2018
Scale AS SHOWN
Designed AO/BS
Drawn ABS
Checked AO
Approved BS

Project # 1726

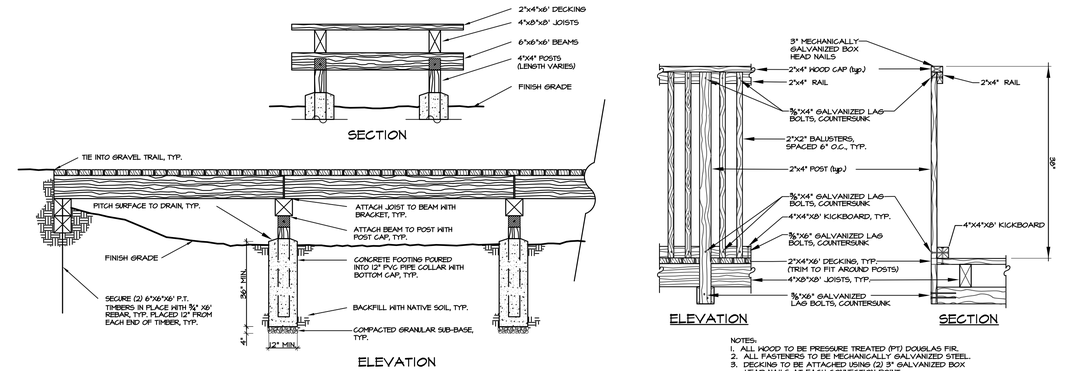
Sheet # W1.3



MITIGATION OVERVIEW PLAN - MITIGATION SITE

GRAPHIC SCALE (IN FEET)
0 75 150 300
SCALE: 1"=150'

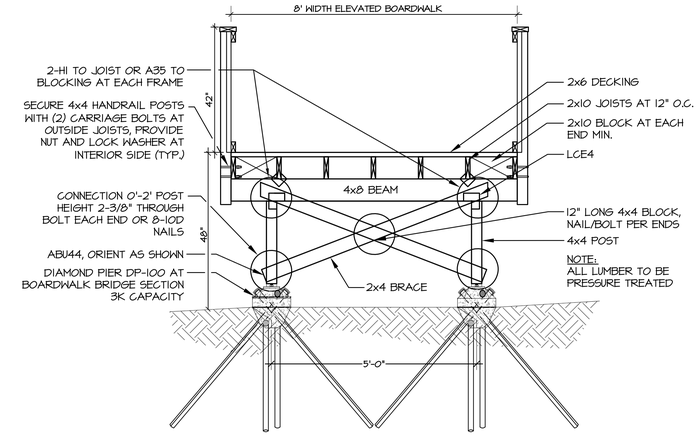
NORTH



NOTES:
1. ALL WOOD TO BE P.T. DOUGLAS FIR.
2. ALL FASTENERS TO BE MECHANICALLY GALVANIZED STEEL.
3. DECKING TO BE ATTACHED USING (2) 3" GALVANIZED BOX HEAD NAILS AT EACH CONNECTION POINT.
4. METAL BRACKETS, STRAPS AND FASTENERS SHALL BE ATTACHED WITH GALVANIZED LAG BOLTS.
5. PILING DEPTH TO BE FIELD DETERMINED WITH A MINIMUM OF 36" INTO BEARING SOIL.
6. ATTACH HANDRAIL TO BOARDWALK PER HANDRAIL DETAIL SPECIFICATIONS.

NOTES:
1. ALL WOOD TO BE PRESSURE TREATED (PT) DOUGLAS FIR.
2. ALL FASTENERS TO BE MECHANICALLY GALVANIZED STEEL.
3. DECKING TO BE ATTACHED USING (2) 3" GALVANIZED BOX HEAD NAILS AT EACH CONNECTION POINT.
4. KICKBOARD TO BE ATTACHED TO DECKING WITH 6" LAG BOLTS 12" FROM EACH END, COUNTER SUNK.
5. METAL BRACKETS, STRAPS AND FASTENERS SHALL BE ATTACHED WITH GALVANIZED LAG BOLTS.

(1) LOW BRIDGE BOARDWALK WITH TYPICAL HANDRAIL DETAIL
N.T.S.



(2) POTENTIAL PIN PILING BOARDWALK WITH RAILING
SCALE: NTS

MITIGATION LEGEND

- PROPOSED AREAS OF ENHANCEMENT/RESTORATION* - 250,600 SF
- PROPOSED INFORMATION KIOSK OR INTERPRETIVE SIGNAGE
- RESTORED TRAIL AND PROPOSED ELEVATED FOOTBRIDGE - 5,500 LF; SEE DETAIL 1, SHEET W1.4

* IN ALL PROPOSED AREAS OF ENHANCEMENT/RESTORATION, INVASIVE SPECIES WILL BE SELECTIVELY GRUBBED AND REMOVED. DETAILED LOCATIONS OF NON-NATIVE/INVASIVE VEGETATION REMOVAL WILL BE DETERMINED ON DETAILED CONCEPTUAL AND/OR FINAL CRITICAL AREA MITIGATION PLANS.

ALL ENHANCEMENT AREAS SHALL INCLUDE LARGE WOODY DEBRIS AND OTHER HABITAT FEATURES. FINAL PLACEMENT, TYPE AND QUANTITIY TO BE DETERMINDED ON FINAL CRITICAL AREA MITIGATION PLANS.

PLAN LEGEND

- PROPERTY LINE
- PENNY CREEK (NOT SURVEYED)
- EXISTING CULVERT (NOT SURVEYED)
- EXISTING BEAVER DAM
- EXISTING BEAVER LODGE
- DIRECTION OF DIVERTED PENNY CREEK FLOWS
- EXISTING VEGETATION
- EXISTING AREAS OF RECENT DISTURBANCE TO SOILS AND VEGETATION
- OPEN WATER

NOTE: SEE MITIGATION CONSTRUCTION SEQUENCING ON SHEET W1.3

EXISTING FEATURES ARE NOT SURVEYED AND WERE IDENTIFIED BY GOOGLE EARTH AERIAL (IMAGE DATED 5-23-2018) AND FIELD VERIFIED.

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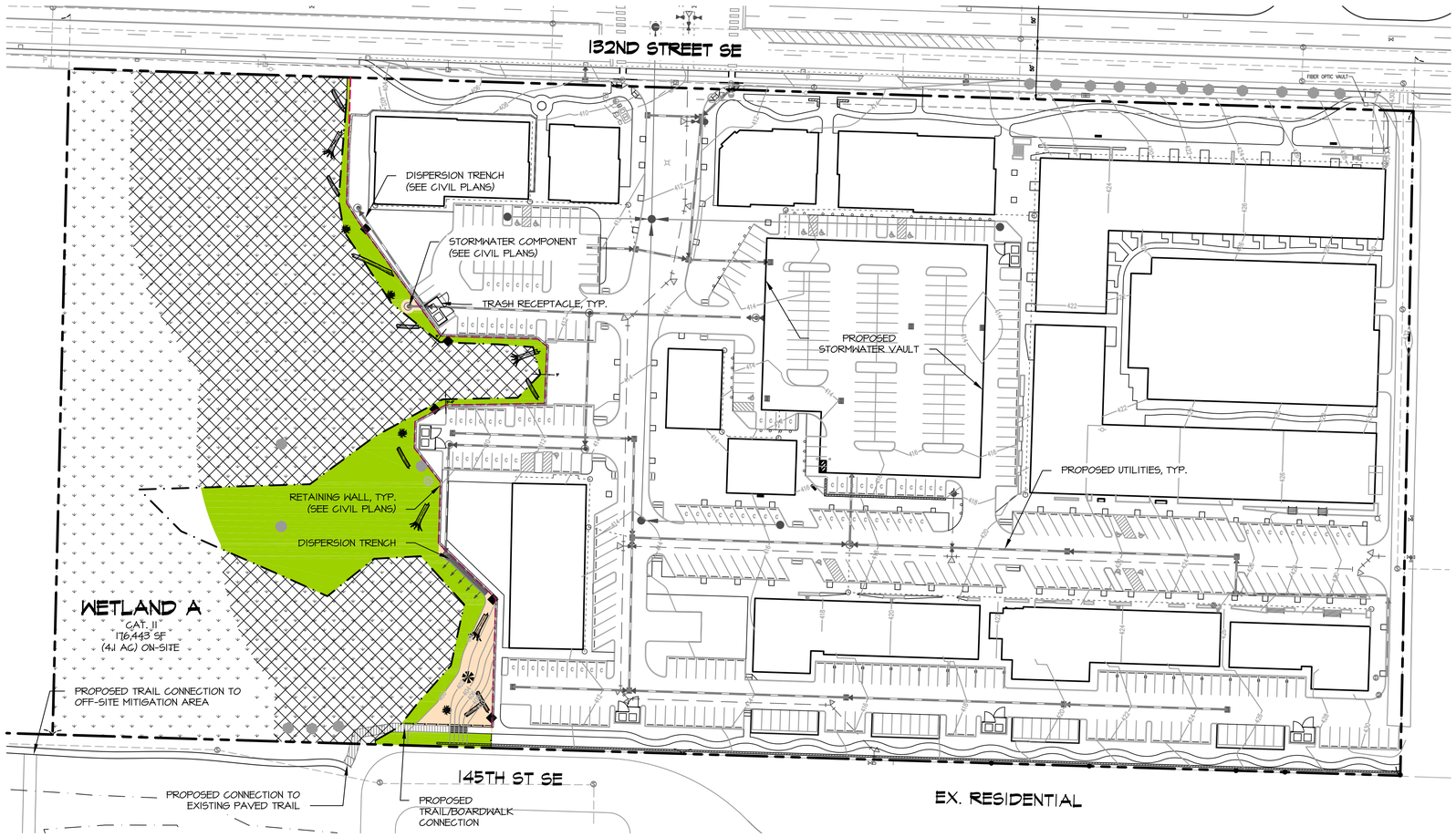
Date	8-9-2018
Scale	AS NOTED
Designed	AO/BS
Drawn	ABS
Checked	AO
Approved	BS

Project # 7260

Sheet # W1.4

NW & SW ¼ OF SECT. 33, TWNSHP. 28 N, RNGE. 5 E, W.M.



PLANT COMMUNITIES PLAN - PROJECT SITE

GRAPHIC SCALE (IN FEET)
0 30 60 120
SCALE: 1"=60'

NORTH

PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- APPROXIMATED WETLAND BOUNDARY (NOT SURVEYED)
- POST CONSTRUCTION WETLAND BUFFER
- CLEARING/GRADING LIMIT (SEE CIVIL PLANS)
- EXISTING TREES
- CRITICAL AREA FENCE; SEE DETAIL 1, SHEET W1.3
- CRITICAL AREA SIGN; SEE DETAIL 2, SHEET W1.3
- LARGE WOODY DEBRIS
- SNAG WITH NEST BOX
- STUMP

PLANTING COMMUNITIES LEGEND

- ENHANCED UPLAND
- RESTORED UPLAND
- ENHANCED/RESTORED WETLAND

NOTES:

ALL AREAS WITHIN 15-FT OF THE PROPERTY LINE SHALL BE PLANTED WITH DENSE BARRIER VEGETATION.

PROPOSED ENHANCEMENT AND RESTORATION PLANTING LAYOUT, QUANTITY AND SPACING SHALL BE DETERMINED ON FINAL CRITICAL AREA MITIGATION PLAN

SEE W2.1 FOR PLANTING DETAILS

GENERAL PLANT INSTALLATION NOTES

1. PLANT TREES AND/OR SHRUBS 1" HIGHER THAN DEPTH GROWN AT NURSERY.
2. FOR CONTAINER TREES AND/OR SHRUBS, SCORE FOUR SIDES OF ROOTBALL PRIOR TO PLANTING. BUTTERFLY ROOTBALL IF ROOT CIRCLING IS EVIDENT.
3. STAKE DECIDUOUS AND EVERGREEN TREES 4 FEET AND OVER IN HEIGHT WITH ONE (1) STAKE PER TREE. STAKE TREES IMMEDIATELY AFTER PLANTING. PLACE STAKE AT THE OUTER EDGE OF THE ROOTS OR ROOTBALL, IN LINE WITH THE PREVAILING WIND. STAKES SHALL BE LOOSELY ATTACHED USING CHAIN-LOCK TREE TIES TO ALLOW FOR SOME TRUNK MOVEMENT. STAKES TO BE VERTICAL, PARALLEL, EVEN-TOPPED, UNSCARRED AND DRIVEN INTO UNDISTURBED SUBGRADE. REMOVE AFTER ONE YEAR.
4. WATER PLANTS IMMEDIATELY UPON PLANTING, THEN PROVIDE MANUAL WATERING OR A TEMPORARY IRRIGATION SYSTEM TO PREVENT PLANT MORTALITY AND ENSURE PROPER PLANT ESTABLISHMENT. PLANTS SHALL RECEIVE A MINIMUM OF APPROXIMATELY ONE INCH OF WATER EVERY WEEK DURING THE DRY SEASON (GENERALLY JUNE 15TH - OCTOBER 15TH, OR EARLIER OR LATER IF CONDITIONS WARRANT) FOR THE FIRST SEASON AFTER PLANTING. IRRIGATION AMOUNTS MAY NEED TO BE INCREASED DURING PROLONGED PERIODS OF HOT, DRY WEATHER.
5. FERTILIZE ALL TREES AND SHRUBS WITH A SLOW-RELEASE GENERAL PURPOSE GRANULAR FERTILIZER OR SLOW-RELEASE TABLETS AT MANUFACTURER'S SPECIFIED RATE.
6. ALL PLANTING AREAS SHALL HAVE A MINIMUM 9-INCH DEPTH OF TOPSOIL. IF TOPSOIL IS INSUFFICIENT IN EITHER QUANTITY OR QUALITY WITHIN PLANTING AREAS, AS DETERMINED BY TALASAEA CONSULTANTS, TOPSOIL SHALL BE RESTORED BY EITHER RE-INSTALLING PREVIOUSLY STOCKPILED TOPSOIL, IMPORTING NEW TOPSOIL, OR AMENDING EXISTING SOILS IN PLACE WITH ORGANIC MATTER TO ACHIEVE A 9" MINIMUM DEPTH. ALL TOPSOIL SHALL HAVE A BULK ORGANIC CONTENT OF AT LEAST 10 PERCENT AND NOT GREATER THAN 20 PERCENT, AS DETERMINED BY AASHTO-T-194. TOPSOIL THAT HAS BEEN STOCKPILED ON-SITE FOR REUSE IN PROJECT AREA(S) OR IMPORTED FROM OFF-SITE SOURCES SHALL BE FERTILE, FRIABLE, SANDY LOAM SURFACE SOIL, FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS, ROOTS, STUMPS, STONES LARGER THAN 1 INCH IN ANY DIMENSION, LITTER, OR ANY OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH.
7. PROVIDE 3-INCH MINIMUM DEPTH OF MEDIUM BARK MULCH IN ALL PLANTING AREAS. NOTE: 3 INCHES IS THE MINIMUM DEPTH AFTER SETTLING. IF MULCH IS INSTALLED BY BLOWER TRUCK IT SHALL BE INSTALLED AT A 4-INCH DEPTH TO ENSURE A MINIMUM 3-INCH DEPTH AFTER SETTLING. MULCH SHALL BE DERIVED FROM FIR, PINE, OR HEMLOCK SPECIES AND SHALL NOT CONTAIN TRASH, ROCKS, OR OTHER DEBRIS OR MATERIALS DETRIMENTAL TO PLANT GROWTH. MULCH SHALL BE MEDIUM-COURSE GROUND WITH AN APPROXIMATELY 3-INCH MINUS PARTICLE SIZE. FINE PARTICLES SHALL BE MINIMIZED SO THAT NOT MORE THAN 30 PERCENT, BY LOOSE VOLUME, WILL PASS THROUGH A U.S. NO. 4 SIEVE.

CANDIDATE PLANT LIST*

ENHANCED/RESTORED UPLAND

TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
CORNUS NUTTALLII	PACIFIC DOGWOOD
CORYLUS CORNUTA	WESTERN HAZELNUT
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
RHAMNUS PURSHIANA	CASCARA
SORBUS SITCHENSIS	SITKA MOUNTAIN ASH
THUJA PLICATA	WESTERN RED CEDAR

SHRUBS

SCIENTIFIC NAME	COMMON NAME
AMELANCHIER ALNIFOLIA	SERVICEBERRY
CRATAEGUS DOUGLASII	BLACK HAWTHORN
GAULTHERIA SHALLON	SALAL
HOLODISCUS DISCOLOR	OCEAN SPRAY
MAHONIA AQUIFOLIUM	TALL OREGON GRAPE
OEMLERIA CERASIFORMIS	INDIAN PLUM
POLYSTICHUM MUNITUM	SWORD FERN
RIBES SANGUINEUM	RED CURRANT
ROSA NUTKANA	NOOTKA ROSE
RUBUS PARVIFLORUS	THIMBLEBERRY
SAMBUCUS RACEMOSA	RED ELDERBERRY
SYMPHORICARPOS ALBUS	COMMON SNOWBERRY

- PLANT QUANTITIES, LAYOUT, AND SPECIES SHALL BE DETERMINED ON FINAL CRITICAL AREA MITIGATION PLAN.

WETLAND AS BUFFER

TREES

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
BETULA PAPYRIFERA	PAPER BIRCH
FRAXINUS LATIFOLIA	OREGON ASH
MALUS FUSCA	WESTERN CRABAPPLE
PICEA SITCHENSIS	SITKA SPRUCE
RHAMNUS PURSHIANA	CASCARA
SALIX LASIANDRA	PACIFIC WILLOW
THUJA PLICATA	WESTERN RED CEDAR

SHRUBS

SCIENTIFIC NAME	COMMON NAME
CORNUS ALBA	RED-OSIER DOGWOOD
CRATAEGUS DOUGLASII	BLACK HAWTHORN
LONICERA INVOLUCRATA	BLACK TWIN-BERRY
PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK
ROSA NUTKANA	NOOTKA ROSE
RUBUS SPECTABILIS	SALMONBERRY
SALIX SCOULERIANA	SCOULER WILLOW
SALIX SITCHENSIS	SITKA WILLOW
VIBURNUM EDULE	HIGH-BUSH CRANBERRY

EMERGENTS

SCIENTIFIC NAME	COMMON NAME
CAREX COMOSA	BEARDED SEDGE
CAREX OBNUPTA	SLOUGH SEDGE
SCIRPUS MICROCARPUS	SMALL-FRUITED BULRUSH

NOT FOR CONSTRUCTION

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SUBJECT TO REVISION

811 Know what's below. Call before you dig.

NOTES

1. SURVEY & SITE PLAN FOR PROJECT SITE PROVIDED BY LDC, INC., 20210 142ND AVE NE WOODINVILLE, WA 98072, (425) 806-1869.
2. SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
3. THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN OCTOBER 2018.

NOTE: EXISTING CONDITIONS FEATURES ON MITIGATION SITE WERE NOT SURVEYED. TOPOGRAPHY WAS ESTIMATED BY LIDAR AND PARCEL BOUNDARIES SOURCED FROM GIS DATA.

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Resource & Environmental Planning
15600 Bear Creek Road Northeast - Woodinville, Washington 98077
Bus (425) 861-7500 - Fax (425) 861-7749

CONCEPTUAL CRITICAL AREAS MITIGATION PLAN
PLANT COMMUNITIES PLAN, PLANT LIST & NOTES - PROJECT SITE
THE FARM
MILL CREEK, WASHINGTON

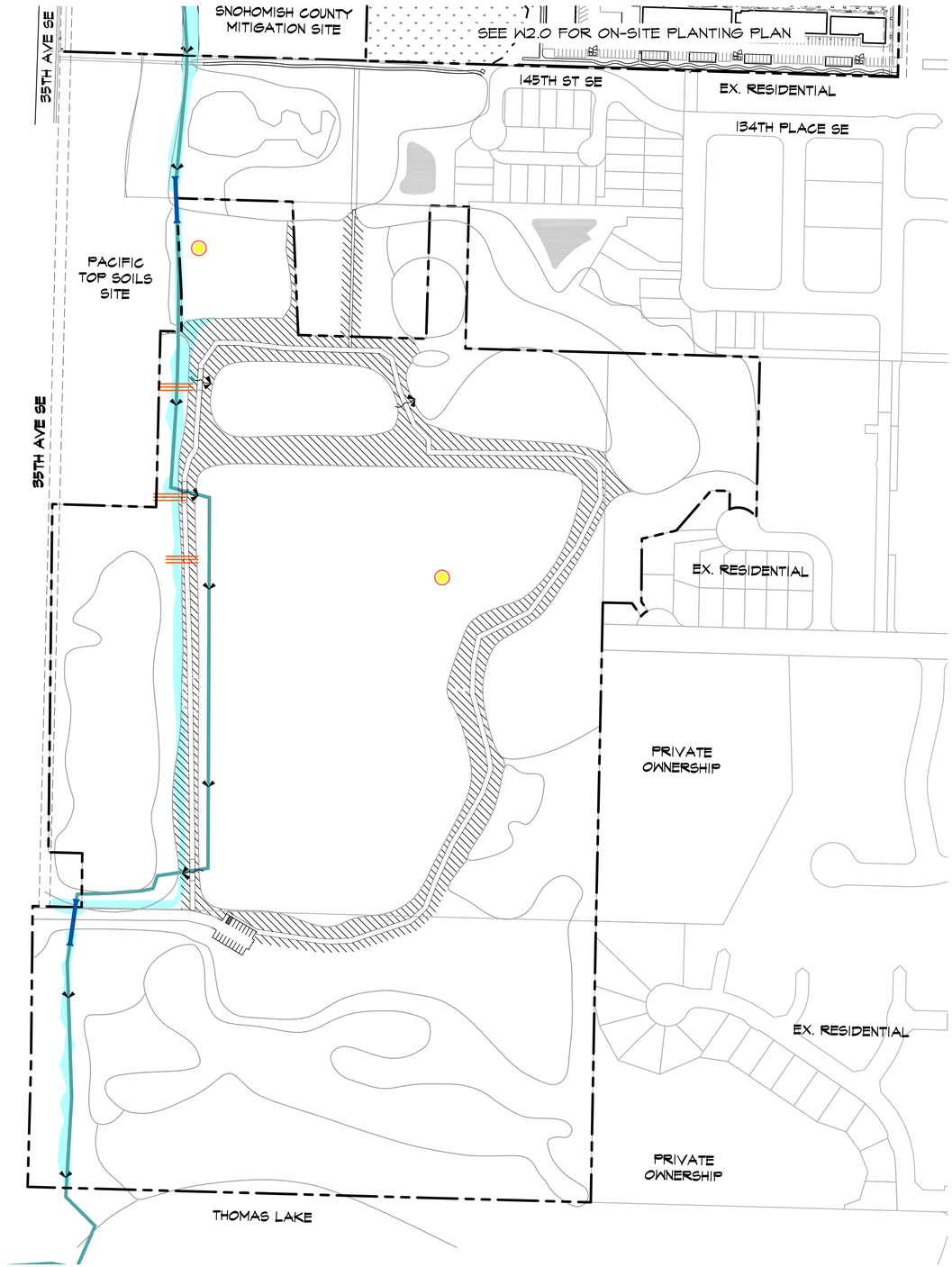
Revisions	Date	By
TAL EDITS	10-18-2018	ABS
CITY & DOE COMMENTS	12-21-2018	MK
SITE PLAN REVISION	01-04-2019	FH

Date 8-9-2018
Scale AS SHOWN
Designed AO/BS
Drawn ABS
Checked AO
Approved BS

Project # 1726

Sheet # W2.0

NW & SW ¼ OF SECT. 33, TWNSHP. 28 N, RNGE. 5 E, W.M.



PLANT COMMUNITIES PLAN - MITIGATION SITE

GRAPHIC SCALE (IN FEET)

0 75 150 300

SCALE: 1"=150'

NORTH

PLAN LEGEND

- PROPERTY LINE
- PENNY CREEK (NOT SURVEYED)
- EXISTING CULVERT (NOT SURVEYED)
- EXISTING BEAVER DAM
- EXISTING BEAVER LODGE
- DIRECTION OF DIVERTED PENNY CREEK FLOWS

PROPOSED PLANT LIST

TREES

SCIENTIFIC NAME	COMMON NAME
BETULA PAPYRIFERA	PAPER BIRCH
FRANGULA PURSHIANA	CASCARA
PICEA SITCHENSIS	SITKA SPRUCE
PRUNUS EMARGINATA	BITTERCHERRY
PSEUDOTUSGA MENZIESII	DOUGLAS FIR
SALIX LASIANDRA	PACIFIC WILLOW
THUJA PICATA	WESTERN RED CEDAR

SMALL TREES/LARGE SHRUBS

SCIENTIFIC NAME	COMMON NAME
ACER CIRCINATUM	VINE MAPLE
AMELANCHIER ALNIFOLIA	SERVICEBERRY
CORYLUS CORNUTA	WESTERN HAZELNUT
CRATAEGUS DOUGLASII	PACIFIC CRABAPPLE
OEMLERIA CERASIFORMIS	INDIAN PLUM
SALIX STICHENSIS	SITKA WILLOW
SAMBUCUS RACEMOSA	RED ELDERBERRY
SORBUS SITCHENSIS	SITKA MOUNTAIN ASH

MASSING SHRUBS

SCIENTIFIC NAME	COMMON NAME
CORNUS ALBA (SERICEA)	RED-OSIER DOGWOOD
LONICERA INVOLUCRATA	BLACK TWIN-BERRY
ROSA NUTKANA	NOOTKA ROSE
ROSA PISOCARPA	CLUSTERED WILD ROSE
RUBUS PARVIFLORUS	THIMBLEBERRY
RUBUS SPECTABILIS	SALMONBERRY
SYMPHORICARPOS ALBUS	COMMON SNOWBERRY

GROUNDCOVER

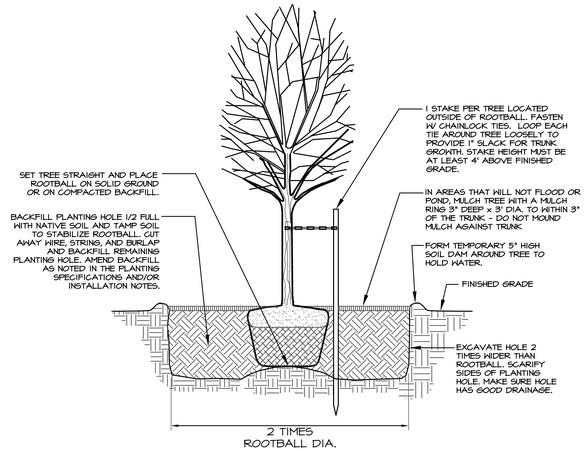
SCIENTIFIC NAME	COMMON NAME
GAULTHERIA SHALLON	SALAL
POLYSTICHUM MUNITUM	SWORD FERN

PROPOSED PLANTING COMMUNITIES LEGEND

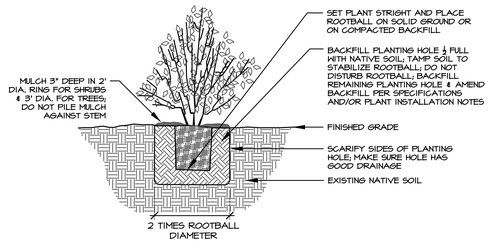
ENHANCED/RESTORED AREAS 250,600 SF

- PROPOSED ENHANCEMENT AND RESTORATION PLANTING LAYOUT, QUANTITY AND SPACING SHALL BE DETERMINED ON FINAL CRITICAL AREA MITIGATION PLAN

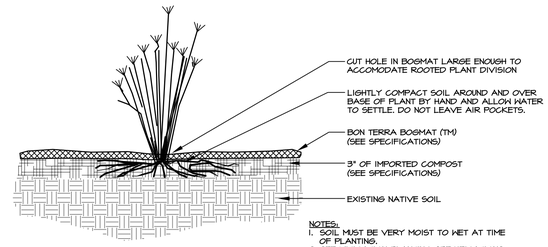
NOTE: SEE W2.0 FOR CANDIDATE PLANT LIST



1 B&B TREE PLANTING DETAIL.
NTS



2 CONTAINER STOCK PLANTING DETAIL
N.T.S.



NOTES:
1. SOIL MUST BE VERY MOIST TO WET AT TIME OF PLANTING.
2. SEE MITIGATION PLANTING SPECIFICATIONS FOR ADDITIONAL INFORMATION.

3 EMERGENT PLANTING DETAIL
N.T.S.

NOT FOR CONSTRUCTION

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NOTES

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CONCEPTUAL CRITICAL AREAS MITIGATION PLAN
PLANT COMMUNITIES PLAN & DETAILS - MITIGATION SITE
THE FARM
MILL CREEK, WASHINGTON

Revisions	Date	By
TAL EDITS	10-16-2018	ABS
CITY & DOE COMMENTS	12-21-2018	MW
SITE PLAN REVISION	01-04-2019	FH

Date	8-9-2018
Scale	AS NOTED
Designed	AO/BS
Drawn	ABS
Checked	AO
Approved	BS

Project # 7266

Sheet # W2.1

Z:\DRAWING\700-799\Ta7266\Plan\TAL-7266 WP (2019-01-11).dwg
Plotted January 30, 2019

APPENDIX B

Credit-Debit Calculation Forms

"DEBIT" WORKSHEET

Wetland unit to be altered: Wetland A Date 1-11-19

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	H
Rating of Landscape Potential	M	H	L
Rating of Value	H	H	H
Score for Wetland	7	7	7

CALCULATIONS **emergent or shrub areas**	**Improving Water Quality**	**Hydrologic**	**Habitat**
Score for wetland unit (see above)	7	7	7
Impact - Acres of **non-forested** areas *(same for all functions)*	2.44		
Basic mitigation requirement (BMR) = *Score for function x acres impacted*	17.08	17.08	17.08
Temporal loss factor (TLF) (See table below)	1.5	1.5	1.5
Mitigation required DEBITS = BMR x TLF	25.62	25.62	25.62
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)			

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	Acre-points	Acre-points	Acre-points
TOTAL	Acre-points	Acre-points	Acre-points

"CREDIT" WORKSHEET

Mitigation Site: _____ Wetland Unit: _____ Date 1-11-19

To calculate the CREDITS fill out the following worksheets using the data from the Scoring Form. Also,

- Use additional worksheets if more than one wetland unit is being used for mitigation.
- Use the map of Cowardin plant types from question H 1.1 on the Scoring Form to determine the boundaries of areas dominated by emergent plants (if needed for the calculations).
- Map out and estimate the areas in the wetland unit that will be created or re-established and the areas that will be rehabilitated or enhanced. The credits from creation/re-establishment and rehabilitation/enhancement are calculated separately before being combined at the end.

Additional notes:

Note 1: B = 0 for all three functions in mitigation sites that are not currently wetlands (creation or re-establishment).

Note 2: If you are increasing the size of an existing wetland the credits are calculated by rating the functions for the entire future wetland (original wetland + area created or re-established). However, you only get credits based on the area (footprint) of the area created or re-established.

Note 3: For enhancement and rehabilitation you cannot score only the parts of a wetland where mitigation takes place. You need to score the entire unit as defined in Chapter 4. This is done for both "before" and "after" conditions. The score for the unit after mitigation [A] will be the same for either enhancement or rehabilitation. This method is based on calculating the "lift" in functions without considering whether the mitigation is called enhancement or rehabilitation.

Note 4: Scoring the landscape potential of a mitigation site to calculate credits after the mitigation takes place depends on how its rating changes. Specifically:

4.1 **If the score for the landscape potential decreases as a result of the mitigation activity** then the score for the current conditions can be used for calculating credits. For example, the rating of landscape potential might decrease for a large mitigation project that removes sources of pollutants in the buffer. In this case the scores for the site might decrease even though positive actions are being taken.

4.2 **If the score for the landscape potential decreases as a result of the development or proposed impacts** then the score for the "future" condition should be used to calculate credits. For example, on-site mitigation should be getting a lower rating for the landscape potential if development to which it is linked breaks corridors or reduces the area of undisturbed habitat. These reduce the effectiveness of the mitigation site as habitat.

4.3 **If the score for the landscape potential increases as a result of the mitigation actions** then the score for the "future" condition can be used in calculating credits. For example, new corridors or habitat connections that are made as a result of the project should be given credit. Also, riverine wetlands that are reconnected to their floodplain should get credit (e.g., question R 5.1).

4.4 **If the score for the landscape potential increases as a result of the development or proposed impacts** then the score for landscape potential for the current conditions has to be used in calculating credits. A development could provide a source of pollutants or excess water to the mitigation site that would increase its level of flood storage and removal of pollutants. We do not want to give mitigation credits to increases in functioning of a wetland that are a result of the impacts associated with the project.

Use the following worksheet to calculate credits. Totals are in acre-points for comparison with the debits worksheet. Separate the mitigation site into different areas (polygons on a map) by the type of mitigation proposed (creation, re-establishment [C/R], and rehabilitation/enhancement [R/E]) and by the plant community proposed for that polygon. These areas have different risk factors.

Scores for unit before any mitigation takes place

B = 0 for Creation and Re-establishment

FUNCTION *From Scoring Form - Unit ID_____*	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential			
Rating of Landscape Potential			
Rating of Value			
Score for mitigation site [B]efore	**B =**	**B =**	**B =**

Scores for unit based on the expected wetland ecosystem when all the vegetation has reached maturity and the water regime has stabilized

FUNCTION *From Scoring Form - Unit ID_____*	Improving Water Quality	Hydrologic	Habitat
Rating of Site Potential			
Rating of Landscape Potential			
Rating of Value			
Score for mitigation site [A]fter	**A =**	**A =**	**A =**

Calculations for Credits Unit ID_____	Improving Water Quality				Hydrologic Function				Habitat Function			
Increase in Score at mitigation site (**A – B**) = [f/s] – forest/shrub/aquatic bed [e] – emergent	C/R f/s	C/R e	R/E f/s	R/E e	C/R f/s	C/R e	R/E f/s	R/E e	C/R f/s	C/R e	R/E f/s	R/E e
Acres of mitigation (*should be same for the 3 functions for each type of mitigation*)												
Basic mitigation credit (BMC) = Increase in Score x acres of mitigation												
Risk factor (RF) (see table below)												
Mitigation credits available for each area CREDITS = BMC x RF												
TOTAL CREDITS AVAILABLE Add the credits from the different types of mitigation												

Risk Factors:

Type of Mitigation	Risk Factor
Advance mitigation The site meets **criteria in Charts 1 and 3** of the site selection guidance [i.e., identified in a local plan and is sustainable] **AND** meets the **criteria in Charts 4-11** for the appropriate functions. (Ecology publication #09-06-032) ***Advance*** *means that at least two years has passed since plantings were completed or one year since "as-built" plans were submitted to regulatory agencies.*	1.0
Advance mitigation without meeting criteria in Ecology publication #09-06-032	0.83
Concurrent Mitigation Mitigation site meets **criteria in Charts 1 and 3** of the site selection guidance [i.e., identified in a local plan and is sustainable] **AND** meets the **criteria in Charts 4-11** for the appropriate functions. (All worksheets for Chart 3 and in Appendix D of Ecology publication #09-06-032 are submitted) *Risk factor applies to all types of mitigation.*	0.9
Mitigation site chosen meets the **criteria in Charts 2 and 3** of the site selection guidance [i.e., identified as a site with potential and that is sustainable] ; **AND** meets **criteria in Charts 4-11** for the appropriate functions. (All worksheets for Chart 3 and in Appendix D of Ecology publication #09-06-032 are submitted) *Risk factor applies to all types of mitigation.*	0.80
Site does not meet criteria in site selection guide, or guide was not used.	
Re-establishment, rehabilitation, or enhancement of an aquatic bed, shrub, or forest community	0.67
Re-establishment, rehabilitation, or enhancement of an emergent community	0.5
Creation of an aquatic bed, shrub, or forest community with data showing there is adequate water to maintain wetland conditions 5 years out of every 10.	0.67
Creation of an emergent community with data showing there is adequate water to maintain wetland conditions 5 years out of every 10.	0.5
Creation of an aquatic bed, shrub, or forest community <u>without</u> adequate hydrologic data.	0.5
Creation of an emergent community <u>without</u> adequate hydrologic data.	0.4

Calculating credits achieved through preservation

The credits available from preservation are calculated by scoring the importance and location of the site being proposed for preservation.

- If you are preserving wetlands use the first table below. The wetland will have to be scored for its functions using the Scoring Sheet in Appendix A.
- If you are preserving uplands use the second table.

To come up with ratios for preservation that are similar to those currently in use we modify the "Basic Score" by "Scaling Factors" that reflect the importance of the site and the potential threats to the site. The descriptions of the criteria used for determining the scaling factors are given after the tables. The tables show two scaling factors for each criterion. Use the first scaling factor if the mitigation plan you are proposing also meets the "no net loss of area" policy. This means you are creating or re-establishing an area of wetland that is equivalent to the area lost. Use the second scaling factor if wetland area is not fully replaced (i.e., the mitigation consists of only mostly rehabilitation, enhancement and/or preservation).

Preservation of Existing Wetlands

Calculating Credits When Preserving Wetlands	Improving Water Quality	Hydrologic Functions	Habitat Functions
Scores of wetland being preserved (*from Scoring Sheet*)	7	7	7
Acres of preservation	41 acres		
Basic Score = Score x acres of wetland preserved	287	287	287
Scaling Factors see tables below Wetland Category	0.08		
Location	0.05		
Threat	0.05		
Sum of scaling factors	0.18		
CREDITS AVAILABLE (Basic Score) *x* (sum of scaling factors) =	51.66 Acre-points	51.66 Acre-points	51.66 Acre-points

Preservation of Uplands

The hydrologic and water quality functions that uplands provide are not directly comparable to those provided by wetlands, and we do not have methods for rating them. Habitat for wildlife and plants are the only functions that are marginally comparable. **As a result, credits from the preservation of uplands can only be used to compensate for impacts to the habitat functions.** Different types of upland habitat are assigned an equivalent "wetland habitat" score for the purpose of calculating the credits. The scoring for uplands is as follows:

Type of Upland Habitat	Habitat Score to be applied in calculation
Upland is Identified as important habitat for preservation in a watershed plan	9
Upland is a "Priority area" for priority species as defined by WDFW OR upland is listed as Natural Heritage site by the Department of Natural Resources	8
Upland is a priority habitat as defined by WDFW (other than wetlands) (see Appendix D for list)	7
Other relatively undisturbed uplands (see definition of relatively undisturbed on page 106)	5

Calculating Credits When Preserving Uplands	Habitat Score
Habitat Score for type of upland from table above	5
Acres of preservation	20
Basic Score = Score x acres of preservation	100
Scaling Factors see tables below Connections	0.025
Location	0.05
Threat	0.05
Sum of scaling factors	0.125
HABITAT CREDITS AVAILABLE Basic Score *x* sum of scaling factors =	12.5 Acre-points

Criteria and Their Scaling Factors

Each criterion has two scaling factors. The first is to be used if the mitigation plan includes the creation or re-establishment of an area of wetland that is equivalent to the area lost. The second is to be used if wetland area is not replaced and the mitigation consists of only rehabilitation or enhancement and preservation.

Factor if area is replaced = Creation or re-establishment replaces, at a minimum, the area of wetland lost.

Factor if area is not replaced = Enhancement, rehabilitation, or preservation provides the bulk of the mitigation. The wetland area lost is not completely replaced by the proposed mitigation.

Areas may be separated for calculations if they represent different types of preservation.

Criterion - Wetland Category (*applies only if preserving wetlands*) – the category of the wetland from the Washington State Wetland Rating System. Some Category II wetlands have ongoing disturbances such as grazing ditches, or drain tiles. The scaling factor for Category II wetlands can be increased if the mitigation plan includes the removal of these disturbances.

	Category 1 wetland	Category 2 wetland	Category 2 wetland with removal of disturbances	Category III or IV wetland
Scaling Factor if area is replaced	0.1	0.05	0.08	0
Scaling Factor if area is not replaced	0.05	0.025	0.04	0

Criterion - Habitat Connections for Uplands *(applies only if preserving uplands)* - The connection of the preservation site relative to other relatively undisturbed habitat areas (see definition for relatively undisturbed on page 105).

	Site connected to at least 250 acres of undisturbed habitat	Site connected to ≥ 25 acres of undisturbed habitat	Site provides a habitat corridor	No corridors
Scaling Factor if area is replaced	0.1	0.05	0.025	0
Scaling Factor if area is not replaced	0.05	0.025	0.013	0

Definitions:

Site connected to an undisturbed habitat at least 250 acres in size– Use a map or aerial photograph to determine if site being preserved is part of, or connected to, a relatively undisturbed upland, wetland, or estuary, at least 250 acres in size. Relatively undisturbed means the area is not subject to regular disturbances from human activities (see p. 105). If site is connected by a corridor, the corridor must be relatively undisturbed and at least 100 ft wide.

Site part of an undisturbed habitat of at least 25 acres - Use same criteria as above, but the size of undisturbed habitat only has to be 25 acres instead of 250.

Site provides a habitat corridor – The preservation site is a relatively undisturbed vegetated habitat corridor at least 50' wide between two existing patches of relatively undisturbed habitat at least 10 acres in size, or a relatively undisturbed riparian corridor that is at least ¼ mile in length and at least 50 ft wide.

Criterion – Location *(Use for both upland and wetland preservation)* - characterizes the position of the preservation site relative to the impact site.

Location of mitigation site relative to impact site	Same hydrologic unit*	Adjacent hydrologic unit*	Site chosen with no analysis of hydrologic units (negative scaling factor)
Scaling Factor if area is replaced	0.05	0.025	-0.02
Scaling Factor if area is not replaced	0.025	0.013	-0.04

*See site selection guide (Ecology publication #09-06-032) for defining hydrologic units used in watershed analyses.

Definitions:

Same hydrologic unit – The preservation site is in the same hydrologic unit as the impact site as defined in the site selection guide (Ecology publication #09-06-032). The scale of the hydrologic unit chosen should be compatible with those used in any available local planning efforts.

Adjacent hydrologic unit - The site is in a hydrologic unit that is contiguous with the one where the impacts will occur. (see above for defining hydrologic units)

Site chosen with no analysis of hydrologic units – the location of the preservation site was chosen without any analysis of the hydrologic units in the watershed.

Criterion - Degree of Threat *(Use for both upland and wetland preservation)* – Characterizes the level of imminent risk of loss or damage to the preservation site.

Threat	High	Moderate	Low
Scaling Factor if area is replaced	0.1	.05	0
Scaling Factor if area is not replaced	0.05	0.025	0

Definitions:

Threat High – There is a demonstrable threat to the site based on documented evidence of proposed destructive land use. The threat has to be documented. Also any areas within the boundaries of an incorporated city or town are under a High Threat.

Threat Moderate – There is threat to the site based on local and regional land use trends that are generally not the consequence of actions under the control of the land owner. Any areas within an urban growth boundary can be considered as having a moderate threat.

Threat Low – There is little evidence of an imminent risk to the preservation site.

Summary of Credits and Debits

This summary provides space for three separate impact sites and three mitigation areas. If more areas are planned, another sheet will be needed.

DEBITS (all numbers are acre-points)	**Improving Water Quality**	**Hydrologic Function**	**Habitat Function**
	Site #1 Site #2 Site #3 25.62	Site #1 Site #2 Site #3 25.62	Site #1 Site #2 Site #3 25.62
TOTAL (in acre-points)	25.62	25.62	25.62
CREDITS (all numbers are acre-points)	**Improving Water Quality**	**Hydrologic Function**	**Habitat Function**
Creation/re-establishment	Site #1 Site #2 Site #3 —	Site #1 Site #2 Site #3 —	Site #1 Site #2 Site #3 —
Rehabilitation	—	—	—
Enhancement	—	—	—
Wetland Preservation	51.4	51.4	51.4
Upland Preservation			12.5
TOTAL Credits available (In acre-points)	51.4	51.4	64.1
BALANCE Credits - Debits	25.98	25.98	38.48

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): TAL-726C Wetland A Date of site visit: 3 May 2016
Rated by DRT Trained by Ecology? ☒ Yes ☐ No Date of training 10-15
HGM Class used for rating Depressional Wetland has multiple HGM classes? ☐ Y ☒ N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*. Source of base aerial photo/map _____

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			Circle the appropriate ratings	
Site Potential	M	L	H	
Landscape Potential	M	H	L	
Value	H	H	H	TOTAL
Score Based on Ratings	7	7	7	21

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	2
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	3
Map of the contributing basin	D 4.3, D 5.3	4
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	5
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	6
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	7

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number A

HGM Classification of Wetlands in Western Washington

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

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

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

☒ NO – go to 2 ☐ **YES** – the wetland class is **Tidal Fringe** – go to 1.1

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

☐ **NO – Saltwater Tidal Fringe (Estuarine)** ☐ **YES – Freshwater Tidal Fringe**

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

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

☒ NO – go to 3 ☐ **YES** – The wetland class is **Flats**

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

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

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

☒ NO – go to 4 ☐ **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

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

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

☒ NO – go to 5 ☐ **YES –** The wetland class is **Slope**

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

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

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

☐ The overbank flooding occurs at least once every 2 years.

Wetland name or number A

☒ NO – go to 6 ☐ **YES** – The wetland class is **Riverine**

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

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

☐ NO – go to 7 ☒ **YES** – The wetland class is **Depressional**

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

☒ NO – go to 8 ☐ **YES** – The wetland class is **Depressional**

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

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

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	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 A

DEPRESSIONAL AND FLATS WETLANDS

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

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	1
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	4
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^1/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	10

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

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

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	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 the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	0
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	3

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

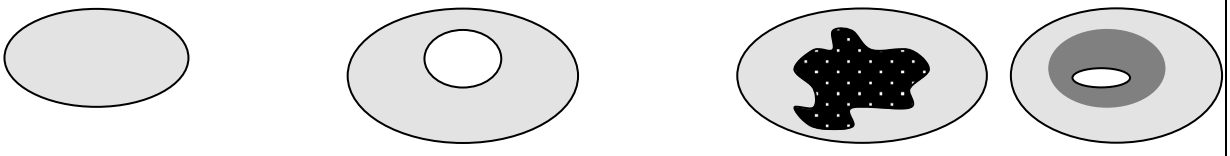
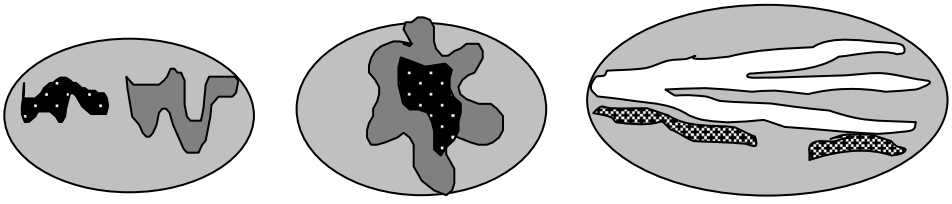
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? 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 or 2 = M** ☐ **0 = L** *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.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	1
D 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	2
Total for D 6 Add the points in the boxes above	3

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

Wetland name or number A

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

Wetland name or number A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ☒ Standing snags (dbh > 4 in) within the wetland ☒ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☒ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ☒ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
Total for H 1 Add the points in the boxes above	15

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?

H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 1 **+** [(% moderate and low intensity land uses)/2] 1 **= 2%** If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 16 **+** [(% moderate and low intensity land uses)/2] 1 **= 17%** Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ☐ **4-6 = H** ☐ **1-3 = M** ☒ **< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?

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

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

Wetland name or number A

WDFW Priority Habitats

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

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

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☒ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multilayered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

☒ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

☒ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

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

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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

Wetland name or number A

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

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Wetland name or number A

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): TAL-726 Wetland A Date of site visit: 5-3-16

Scored by DRT
SEC: __ TWNSHP: ___ RNGE: ___ Estimated size:____ Aerial photo included? _____

These scores are for:
__X__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	L	H
Rating of Landscape Potential	M	H	L
Rating of Value	H	H	H
Score Based on Ratings (see table below)	7	7	7

	Wetland HGM Class Used for Rating	
	Depressional	X
	Riverine	
	Lake-fringe	
	Slope	
	Flats	
	Freshwater Tidal	
	Check if unit has multiple HGM classes present	

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 A

HGM Classification of Wetlands in Western Washington

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

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

1. Are the water levels in the entire unit usually controlled by tides (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 A

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 A

Depressional and Flats Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions D 1.1 – D 1.4 are from the Wetland Rating System (Hruby 2004b).	
D 1.0 Does the wetland unit have the potential to improve water quality?	
D 1.1 Characteristics of surface water flows out of the wetland: *Provide photo or drawing* Unit is a depression with no surface water leaving it (no outlet) points =3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	Figure ___ 1
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES: points = 4 NO: points = 0	4
D 1.3 Characteristics of persistent plants (emergent, shrub, and/or forest Cowardin class *Provide map of Cowardin plant classes* Wetland has persistent, ungrazed, plants ≥ 95% of area points = 5 Wetland has persistent, ungrazed, plants ≥ 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants <1/10 of area points = 0	Figure ___ 3
D 1.4 Characteristics of seasonal ponding or inundation. *Provide map of hydroperiods* This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs. Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	Figure ___ 2
Total for D 1 Add the points in the boxes above	10

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

M

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

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? 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? Yes = 1 No = 0	1
D 2.3 Are there septic systems within 250 ft of the wetland unit? Yes = 1 No = 0	0
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 – D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential: If score is 3 or 4 = H
1 or 2 = M
0 = L

M

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? Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where an aquatic resource is on the 303(d) list? 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*) Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

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 A

Depressional and Flats Wetlands **HYDROLOGIC FUNCTIONS** - Indicators that the site functions to reduce flooding and stream degradation. Questions D 4.1 – D 4.3 are from Wetland Rating System (Hruby 2004b).	
D 4. 0 Does the wetland unit have the potential to reduce flooding and erosion?	
D 4.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 Unit has an unconstricted, or slightly constricted, surface outlet and is permanently flowing) points = 0 (If ditch is not permanently flowing treat unit as "intermittently flowing")	0
D 4.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit 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 4.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	0
Total for D 4 Add the points in the boxes above	3
Rating of Site Potential: If score is **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**	L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

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

H

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. ☒ The site has been identified as important for flood storage or flood conveyance in a regional flood control plan. points = 2 ☐ 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 ☒ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 ☐ There are no problems with flooding downstream of the unit. points = 0	3

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

H

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

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 potential to improve water quality?	
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: *If depressions > ½ of area of unit draw polygons on aerial photo or map* 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 ___
R 1.2 Characteristics of the plants in the unit (areas with >90% cover at person height): *Include photo or map showing polygons of different plants types* 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 ___
Total for R 1 Add the points in the boxes above	

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	
R. 2.2 Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 0	
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	
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	
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

Record the rating on the first page

Wetland name or number A

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? Yes = 1 No = 0	
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	
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	
Total for R 3 Add the points in the boxes above	

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

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: *Provide aerial photo showing average widths* 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 __
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description* (polygons need to have >90% cover at person height NOT Cowardin classes): *Provide photo or map showing polygons of different plants types* 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 __
Total for R 4 Add the points in the boxes above	

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

Wetland name or number A

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	

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

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? *Choose the description that best fits the site.* 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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

Lake-fringe Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions L 1.1 – L 1.2 are from the Wetland Rating System (Hruby 2004b).	
L 1.0 Does the wetland unit have the potential to improve water quality?	
L 1.1 Average width of plants along the lakeshore *(use polygons of Cowardin classes)*: *Provide map of Cowardin classes with widths marked* Plants are more than 33 ft (10m) wide — points = 6 Plants are more than 16 ft (5m) wide and <33ft — points = 3 Plants are more than 6 ft (2m) wide and <16 ft — points = 1 Plants are less than 6 ft wide — points = 0	Figure ___
L 1.2 Characteristics of the plants in the wetland: choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. *Herbaceous does not include aquatic bed.* *Provide map with polygons of different plants types* Cover of herbaceous plants are >90% of the vegetated area — points = 6 Cover of herbaceous plants are >2/3 of the vegetated area — points = 4 Cover of herbaceous plants are >1/3 of the vegetated area — points = 3 Other plants that are not aquatic bed > 2/3 unit — points = 3 Other plants that are not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed plants and open water cover > 2/3 of the unit — points = 0	Figure ___
Total for L 1 — Add the points in the boxes above	

Rating of Site Potential: If score is **8 - 12 = H**
4 – 7 = M
0 - 3 = L

Record the rating on the first page

L 2. Does the landscape have the potential to support the water quality function at the site?	
L 2.1 Is the lake used by power boats? Yes = 1 No = 0	
L 2.2 Is more than 10% of the area within 150 ft of wetland unit (on the shore side) agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	
L 2.3 Does the lake have problems with algal blooms or excessive plants such as milfoil? Yes = 1 No = 0	
Total for L 2 — Add the points in the boxes above	

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

Record the rating on the first page

Wetland name or number A

L 3.0 Is the water quality improvement provided by the site valuable to society?	
L 3.1 Is the unit on a lake that is on the 303(d) list? Yes = 1 No = 0	
L 3.2 Is the lake 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	
L 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

Record the rating on the first page

Lake-fringe Wetlands

HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce shoreline erosion

Question L 4.1 is from Wetland Rating System (Hruby 2004b).

L 4.0 Does the wetland unit have the potential to reduce shoreline erosion?	
L 4.1 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* *Include aerial photo or map with Cowardin plant classes* > ¾ of distance is shrubs or forest at least 33 ft (10m) wide points = 6 > ¾ of distance is shrubs or forest at least 6 ft (2 m) wide points = 4 > ¼ distance is shrubs or forest at least 33 ft (10m) wide points = 4 Plants are at least 6 ft (2m) wide (any type except aquatic bed) points = 2 Plants are less than 6 ft (2m) wide (any type except aquatic bed) points = 0	Figure_

Rating of Site Potential: If score is **6 = M**
0 - 5 = L

Record the rating on the first page

Wetland name or number A

L 5.0 Does the landscape have the potential to support hydrologic functions at the site?	
L 5.1 Is the lake used by power boats with more than 10 hp? Yes = 1 No = 0	
L 5.2 Is the fetch on the lake side of the unit at least 1 mile in distance? Yes = 1 No = 0	
Total for L 5 Add the points in the boxes above	

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

Record the rating on the first page

L 6.0 Are the hydrologic functions provided by the site valuable to society?	
L 6.1 If more than one resource is present, choose the one with the highest score. There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit. points = 2 There are nature trails or other paths and recreational activities within 25 ft of OHWM. points = 1 Other resources that could be impacted by erosion. points = 1 There are no resources that can be impacted by erosion along the shores of the unit. points = 0	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

Slope Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality Questions S 1.1 – S 1.3 are from Wetland Rating System (Hruby 2004b).	
S 1. Does the wetland unit have the potential to improve water quality?	
S 1.1 Characteristics of average slope of unit: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft horizontal distance)* Slope is1% or less — points = 3 Slope is 1% - 2% — points = 2 Slope is 2% - 5% — points = 1 Slope is greater than 5% — points = 0	
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES = 3 points NO = 0 points	
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Provide photo or map showing polygons of different plants types* Dense, uncut, herbaceous plants > 90% of the wetland area — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	Figure_
Total for S 1 — Add the points in the boxes above	

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

Record the rating on the first page

S 2. 0 Does the landscape have the potential to support the water quality function at the site?	
S 2.1 IS >10% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	

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

Record the rating on the first page

Wetland name or number A

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	
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	
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

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 potential to reduce flooding and stream erosion?	
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best 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	

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 A

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	

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

Record the rating on the first page

S 6.0 Are the hydrologic functions provided by the site valuable to society?	
S 6.1 Distance to the nearest areas downstream that have flooding problems? 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	
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	
Total for R 6 Add the points in the boxes above	

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

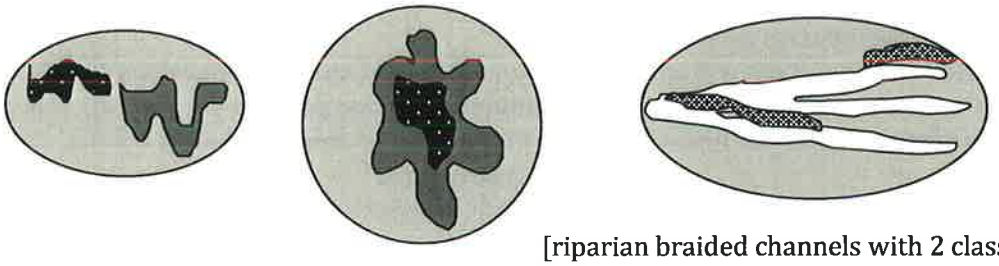
Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat. **Questions H 1.1 – H 1.5 are from Wetland Rating System (Hruby 2004b).**	
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?	
H 1.1 Structure of plant community – *indicators are Cowardin classes and layers in forest* Check the Cowardin plant classes in unit – *Polygons for each class must total ¼ acre, or more than 10% of the unit if it is smaller than 2.5 acres.* *Provide map of Cowardin plant classes* X Aquatic bed X Emergent plants X Scrub/shrub (areas where shrubs have > 30% cover) ___Forested (areas where trees have > 30% cover) If the unit has a forested class check if: ___The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon Add the number of structures checked. If you have: 4 structures or more points = 4; 3 structures points = 2; 2 structures points = 1; 1 structure points = 0	Figure__ 2
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (*see text for descriptions of hydroperiods*). *Provide map of polygons with different hydroperiods* X Permanently flooded or inundated X Seasonally flooded or inundated ___Occasionally flooded or inundated X Saturated only 4 or more types present points = 3 3 types present points = 2 2 types present points = 1 1 type present points = 0 X Permanently flowing stream or river in, or adjacent to, the wetland ___Seasonally flowing stream in, or adjacent to, the wetland ___**Lake-fringe wetland = 2 points** ___**Freshwater tidal wetland = 2 points**	Figure__ 3
H 1.3. Richness of Plant Species Count the number of plant species in the wetland unit that cover at least 10 ft². *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle If you counted: > 19 species points = 2; 5 - 19 species points = 1; < 5 species points = 0 *List species below if you want to:*	2

Wetland name or number A

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. *Provide map of Cowardin plant classes (same as H1.1)*  None = 0 points Low = 1 point Moderate = 2 points  [riparian braided channels with 2 classes] **High = 3 points** NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."	Figure_ 3
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. X Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long). X Standing snags (diameter at the bottom > 4 inches) within the unit X 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) X 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 *(cut shrubs or trees that have not yet weathered where wood is exposed)* X At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)* ___Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
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	15

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

H

Record the rating on the first page

Wetland name or number A

H 2.0 Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = 21. *Provide map of land use within 1 km of unit edge*		Figure_
If total accessible habitat is:		
> 1/3 (33.3%) of 1 km circle *(~100 hectares or 250 acres)*	points = 3	0
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	
Undisturbed habitat 10 - 50% and in 1-3 patches	points = 2	1
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		-1

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?	
H3.1Does 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	2
— 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

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

H

Record the rating on the first page

Wetland name or number A (Post)

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): TAL-726 Wetland A Date of site visit: 5-3-16

Scored by DRT
SEC: __ TWNSHP: ___ RNGE: ___ Estimated size:_____ Aerial photo included? _____

These scores are for:
__X__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	L	H
Rating of Landscape Potential	M	H	L
Rating of Value	H	H	H
Score Based on Ratings (see table below)	7	7	7

	Wetland HGM Class Used for Rating	
	Depressional	X
	Riverine	
	Lake-fringe	
	Slope	
	Flats	
	Freshwater Tidal	
	Check if unit has multiple HGM classes present	

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 A (Post)

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 A (Post)

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 A (Post)

Depressional and Flats Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions D 1.1 – D 1.4 are from the Wetland Rating System (Hruby 2004b).	
D 1.0 Does the wetland unit have the potential to improve water quality?	
D 1.1 Characteristics of surface water flows out of the wetland: *Provide photo or drawing* Unit is a depression with no surface water leaving it (no outlet) points =3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	Figure __ 1
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES: points = 4 NO: points = 0	4
D 1.3 Characteristics of persistent plants (emergent, shrub, and/or forest Cowardin class *Provide map of Cowardin plant classes* Wetland has persistent, ungrazed, plants ≥ 95% of area points = 5 Wetland has persistent, ungrazed, plants ≥ 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants <1/10 of area points = 0	Figure __ 3
D 1.4 Characteristics of seasonal ponding or inundation. *Provide map of hydroperiods* This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs. Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	Figure __ 2
Total for D 1 Add the points in the boxes above	10
Rating of Site Potential: If score is **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**	M

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A (Post)

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? 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? Yes = 1 No = 0	1
D 2.3 Are there septic systems within 250 ft of the wetland unit? Yes = 1 No = 0	0
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 – D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential: If score is 3 or 4 = H
1 or 2 = M
0 = L M

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? Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where an aquatic resource is on the 303(d) list? 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*) Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

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 A (Post)

Depressional and Flats Wetlands **HYDROLOGIC FUNCTIONS** - Indicators that the site functions to reduce flooding and stream degradation. Questions D 4.1 – D 4.3 are from Wetland Rating System (Hruby 2004b).	
D 4. 0 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	
D 4.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 Unit has an unconstricted, or slightly constricted, surface outlet and is permanently flowing) points = 0 (If ditch is not permanently flowing treat unit as "intermittently flowing")	0
D 4.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit 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 4.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	0
Total for D 4 Add the points in the boxes above	3
Rating of Site Potential: If score is **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**	L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A (Post)

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** H

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. ☐ The site has been identified as important for flood storage or flood conveyance in a regional flood control plan. points = 2 ☐ 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 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 ☐ There are no problems with flooding downstream of the unit. points = 0	3

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A(Post)

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: *If depressions > ½ of area of unit draw polygons on aerial photo or map* 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 __
R 1.2 Characteristics of the plants in the unit (areas with >90% cover at person height): *Include photo or map showing polygons of different plants types* 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 __
Total for R 1 — Add the points in the boxes above	

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	
R. 2.2 Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 0	
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	
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	
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

Record the rating on the first page

Wetland name or number A (Post)

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? Yes = 1 No = 0	
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	
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	
Total for R 3 Add the points in the boxes above	

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

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: *Provide aerial photo showing average widths* 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 ___
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description* (polygons need to have >90% cover at person height NOT Cowardin classes): *Provide photo or map showing polygons of different plants types* 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 ___
Total for R 4 Add the points in the boxes above	

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

Wetland name or number A (Post

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	

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

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? *Choose the description that best fits the site.* 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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A (Post)

Lake-fringe Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions L 1.1 – L 1.2 are from the Wetland Rating System (Hruby 2004b).	
L 1.0 Does the wetland unit have the potential to improve water quality?	
L 1.1 Average width of plants along the lakeshore *(use polygons of Cowardin classes)*: *Provide map of Cowardin classes with widths marked* Plants are more than 33 ft (10m) wide — points = 6 Plants are more than 16 ft (5m) wide and <33ft — points = 3 Plants are more than 6 ft (2m) wide and <16 ft — points = 1 Plants are less than 6 ft wide — points = 0	Figure ___
L 1.2 Characteristics of the plants in the wetland: choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. *Herbaceous does not include aquatic bed.* *Provide map with polygons of different plants types* Cover of herbaceous plants are >90% of the vegetated area — points = 6 Cover of herbaceous plants are >2/3 of the vegetated area — points = 4 Cover of herbaceous plants are >1/3 of the vegetated area — points = 3 Other plants that are not aquatic bed > 2/3 unit — points = 3 Other plants that are not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed plants and open water cover > 2/3 of the unit — points = 0	Figure ___
Total for L 1 — Add the points in the boxes above	

Rating of Site Potential: If score is **8 - 12 = H**
4 – 7 = M
0 - 3 = L

Record the rating on the first page

L 2. Does the landscape have the potential to support the water quality function at the site?	
L 2.1 Is the lake used by power boats? Yes = 1 No = 0	
L 2.2 Is more than 10% of the area within 150 ft of wetland unit (on the shore side) agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	
L 2.3 Does the lake have problems with algal blooms or excessive plants such as milfoil? Yes = 1 No = 0	
Total for L 2 — Add the points in the boxes above	

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

Record the rating on the first page

Wetland name or number A (Pond)

L 3.0 Is the water quality improvement provided by the site valuable to society?	
L 3.1 Is the unit on a lake that is on the 303(d) list? Yes = 1 No = 0	
L 3.2 Is the lake 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	
L 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

Record the rating on the first page

Lake-fringe Wetlands

HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce shoreline erosion

Question L 4.1 is from Wetland Rating System (Hruby 2004b).

L 4.0 Does the wetland unit have the potential to reduce shoreline erosion?	
L 4.1 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* *Include aerial photo or map with Cowardin plant classes* > ¾ of distance is shrubs or forest at least 33 ft (10m) wide points = 6 > ¾ of distance is shrubs or forest at least 6 ft (2 m) wide points = 4 > ¼ distance is shrubs or forest at least 33 ft (10m) wide points = 4 Plants are at least 6 ft (2m) wide (any type except aquatic bed) points = 2 Plants are less than 6 ft (2m) wide (any type except aquatic bed) points = 0	Figure_

Rating of Site Potential: If score is **6 = M**
0 - 5 = L

Record the rating on the first page

Wetland name or number A (Post)

L 5.0 Does the landscape have the potential to support hydrologic functions at the site?	
L 5.1 Is the lake used by power boats with more than 10 hp? Yes = 1 No = 0	
L 5.2 Is the fetch on the lake side of the unit at least 1 mile in distance? Yes = 1 No = 0	
Total for L 5 Add the points in the boxes above	

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

Record the rating on the first page

L 6.0 Are the hydrologic functions provided by the site valuable to society?	
L 6.1 If more than one resource is present, choose the one with the highest score. There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit. points = 2 There are nature trails or other paths and recreational activities within 25 ft of OHWM. points = 1 Other resources that could be impacted by erosion. points = 1 There are no resources that can be impacted by erosion along the shores of the unit. points = 0	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A (Post)

Slope Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality Questions S 1.1 – S 1.3 are from Wetland Rating System (Hruby 2004b).	
S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	
S 1.1 Characteristics of average slope of unit: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft horizontal distance)* Slope is1% or less — points = 3 Slope is 1% - 2% — points = 2 Slope is 2% - 5% — points = 1 Slope is greater than 5% — points = 0	
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES = 3 points NO = 0 points	
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* *Provide photo or map showing polygons of different plants types* Dense, uncut, herbaceous plants > 90% of the wetland area — points = 6 Dense, uncut, herbaceous plants > ½ of area — points = 3 Dense, woody, plants > ½ of area — points = 2 Dense, uncut, herbaceous plants > ¼ of area — points = 1 Does not meet any of the criteria above for plants — points = 0	Figure_
Total for S 1 — Add the points in the boxes above	

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

Record the rating on the first page

S 2. 0 Does the landscape have the potential to support the water quality function at the site?	
S 2.1 IS >10% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	

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

Record the rating on the first page

Wetland name or number A (Post)

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	
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	
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

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 potential to reduce flooding and stream erosion?	
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best 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	

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 A (Post)

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	

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

Record the rating on the first page

S 6.0 Are the hydrologic functions provided by the site valuable to society?	
S 6.1 Distance to the nearest areas downstream that have flooding problems? 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	
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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number A (Post)

These questions apply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat.
Questions H 1.1 – H 1.5 are from Wetland Rating System (Hruby 2004b).

H 1. Does the wetland unit have the potential to provide habitat for many species?

H 1.1 Structure of plant community – *indicators are Cowardin classes and layers in forest*
Check the Cowardin plant classes in unit – *Polygons for each class must total ¼ acre, or more than 10% of the unit if it is smaller than 2.5 acres.*
Provide map of Cowardin plant classes

Figure_

- [X] Aquatic bed
- [X] Emergent plants
- [X] Scrub/shrub (areas where shrubs have > 30% cover)
- [ ] Forested (areas where trees have > 30% cover)

If the unit has a forested class check if:

- [ ] The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon

Add the number of structures checked. If you have:
4 structures or more points = 4
3 structures points = 2
2 structures points = 1
1 structure points = 0

2

H 1.2. Hydroperiods
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (*see text for descriptions of hydroperiods*).
Provide map of polygons with different hydroperiods

Figure_

- [X] Permanently flooded or inundated
- [X] Seasonally flooded or inundated
- [ ] Occasionally flooded or inundated
- [X] Saturated only
- [X] Permanently flowing stream or river in, or adjacent to, the wetland
- [ ] Seasonally flowing stream in, or adjacent to, the wetland
- [ ] **Lake-fringe wetland = 2 points**
- [ ] **Freshwater tidal wetland = 2 points**

4 or more types present points = 3
3 types present points = 2
2 types present points = 1
1 type present points = 0

3

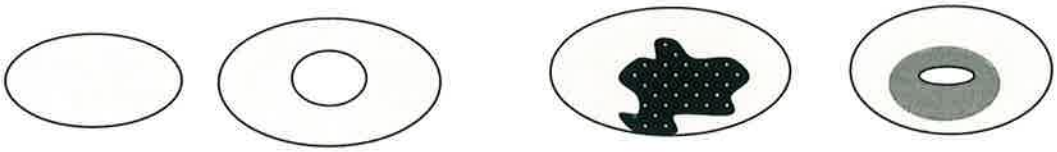
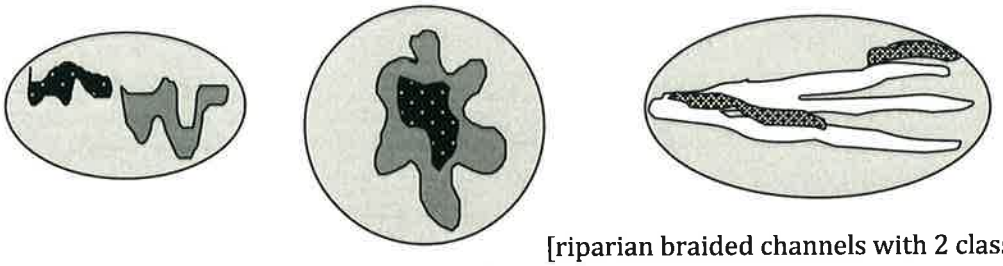
H 1.3. Richness of Plant Species
Count the number of plant species in the wetland unit that cover at least 10 ft².
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.
Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

If you counted:
> 19 species points = 2
5 - 19 species points = 1
< 5 species points = 0

List species below if you want to:

2

Wetland name or number A (Post)

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. *Provide map of Cowardin plant classes (same as H1.1)*  None = 0 points Low = 1 point Moderate = 2 points  [riparian braided channels with 2 classes] **High = 3 points** NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."	Figure_ 3
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. __X__Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long). __X__Standing snags (diameter at the bottom > 4 inches) within the unit __X__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) __X__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 *(cut shrubs or trees that have not yet weathered where wood is exposed)* __X__At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)* ___Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
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	15

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

H

Record the rating on the first page

Wetland name or number A (Post)

H 2.0 Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____ *Provide map of land use within 1 km of unit edge*		Figure_
If total accessible habitat is:		
> 1/3 (33.3%) of 1 km circle *(~100 hectares or 250 acres)*	points = 3	0
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	1
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		-1

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?		
H3.1Does 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	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	

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

H

Record the rating on the first page

Wetland name or number offsite

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): TAL-726 offsite Date of site visit: 6-3-16

Scored by DRT
SEC: __ TWNSHP: ___ 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	M	L	H
Rating of Landscape Potential	M	H	L
Rating of Value	H	H	H
Score Based on Ratings (see table below)	7	7	7

	Wetland HGM Class Used for Rating	
	Depressional	X
	Riverine	
	Lake-fringe	
	Slope	
	Flats	
	Freshwater Tidal	
	Check if unit has multiple HGM classes present	

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 offsite

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 Offsite

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 Offsite

Depressional and Flats Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions D 1.1 – D 1.4 are from the Wetland Rating System (Hruby 2004b).	
D 1.0 Does the wetland unit have the potential to improve water quality?	
D 1.1 Characteristics of surface water flows out of the wetland: *Provide photo or drawing* Unit is a depression with no surface water leaving it (no outlet) points =3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	Figure __ 1
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES: points = 4 NO: points = 0	4
D 1.3 Characteristics of persistent plants (emergent, shrub, and/or forest Cowardin class *Provide map of Cowardin plant classes* Wetland has persistent, ungrazed, plants ≥ 95% of area points = 5 Wetland has persistent, ungrazed, plants ≥ 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants <1/10 of area points = 0	Figure __ 3
D 1.4 Characteristics of seasonal ponding or inundation. *Provide map of hydroperiods* This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs. Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	Figure __ 2
Total for D 1 Add the points in the boxes above	10

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

M

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite

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? 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? Yes = 1 No = 0	1
D 2.3 Are there septic systems within 250 ft of the wetland unit? Yes = 1 No = 0	0
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 – D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential: If score is 3 or 4 = H
1 or 2 = M
0 = L M

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? Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where an aquatic resource is on the 303(d) list? 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*) Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

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 Offsite

Depressional and Flats Wetlands **HYDROLOGIC FUNCTIONS** - Indicators that the site functions to reduce flooding and stream degradation. Questions D 4.1 – D 4.3 are from Wetland Rating System (Hruby 2004b).	
D 4. 0 Does the wetland unit have the potential to reduce flooding and erosion?	
D 4.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 Unit has an unconstricted, or slightly constricted, surface outlet and is permanently flowing) points = 0 (If ditch is not permanently flowing treat unit as "intermittently flowing")	0
D 4.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit 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 4.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	0
Total for D 4 Add the points in the boxes above	3
Rating of Site Potential: If score is **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**	L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number Offsite

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 H

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. ☒ The site has been identified as important for flood storage or flood conveyance in a regional flood control plan. points = 2 ☐ 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 ☒ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 ☐ There are no problems with flooding downstream of the unit. points = 0	3

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number Offsite

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 potential to improve water quality?	
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: *If depressions > ½ of area of unit draw polygons on aerial photo or map* 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 ___
R 1.2 Characteristics of the plants in the unit (areas with >90% cover at person height): *Include photo or map showing polygons of different plants types* 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 ___
Total for R 1 — Add the points in the boxes above	

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	
R. 2.2 Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 0	
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	
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	
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

Record the rating on the first page

Wetland name or number Offsite

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? Yes = 1 No = 0	
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	
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	
Total for R 3 Add the points in the boxes above	

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

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: *Provide aerial photo showing average widths* 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 ___
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description* (polygons need to have >90% cover at person height NOT Cowardin classes): *Provide photo or map showing polygons of different plants types* 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 ___
Total for R 4 Add the points in the boxes above	

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

Wetland name or number Offsite

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	

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

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? *Choose the description that best fits the site.* 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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite

Lake-fringe Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions L 1.1 – L 1.2 are from the Wetland Rating System (Hruby 2004b).	
L 1.0 Does the wetland unit have the potential to improve water quality?	
L 1.1 Average width of plants along the lakeshore *(use polygons of Cowardin classes)*: *Provide map of Cowardin classes with widths marked* Plants are more than 33 ft (10m) wide — points = 6 Plants are more than 16 ft (5m) wide and <33ft — points = 3 Plants are more than 6 ft (2m) wide and <16 ft — points = 1 Plants are less than 6 ft wide — points = 0	Figure ___
L 1.2 Characteristics of the plants in the wetland: choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. *Herbaceous does not include aquatic bed.* *Provide map with polygons of different plants types* Cover of herbaceous plants are >90% of the vegetated area — points = 6 Cover of herbaceous plants are >2/3 of the vegetated area — points = 4 Cover of herbaceous plants are >1/3 of the vegetated area — points = 3 Other plants that are not aquatic bed > 2/3 unit — points = 3 Other plants that are not aquatic bed in > 1/3 vegetated area — points = 1 Aquatic bed plants and open water cover > 2/3 of the unit — points = 0	Figure ___
Total for L 1 — Add the points in the boxes above	

Rating of Site Potential: If score is **8 - 12 = H**
4 – 7 = M
0 - 3 = L

Record the rating on the first page

L 2. Does the landscape have the potential to support the water quality function at the site?	
L 2.1 Is the lake used by power boats? Yes = 1 No = 0	
L 2.2 Is more than 10% of the area within 150 ft of wetland unit (on the shore side) agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	
L 2.3 Does the lake have problems with algal blooms or excessive plants such as milfoil? Yes = 1 No = 0	
Total for L 2 — Add the points in the boxes above	

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

Record the rating on the first page

Wetland name or number offsite

L 3.0 Is the water quality improvement provided by the site valuable to society?	
L 3.1 Is the unit on a lake that is on the 303(d) list? Yes = 1 No = 0	
L 3.2 Is the lake 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	
L 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

Record the rating on the first page

Lake-fringe Wetlands

HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce shoreline erosion

Question L 4.1 is from Wetland Rating System (Hruby 2004b).

L 4.0 Does the wetland unit have the potential to reduce shoreline erosion?	
L 4.1 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* *Include aerial photo or map with Cowardin plant classes* > ¾ of distance is shrubs or forest at least 33 ft (10m) wide points = 6 > ¾ of distance is shrubs or forest at least 6 ft (2 m) wide points = 4 > ¼ distance is shrubs or forest at least 33 ft (10m) wide points = 4 Plants are at least 6 ft (2m) wide (any type except aquatic bed) points = 2 Plants are less than 6 ft (2m) wide (any type except aquatic bed) points = 0	Figure_

Rating of Site Potential: If score is **6 = M**
0 - 5 = L

Record the rating on the first page

Wetland name or number Offsite

L 5.0 Does the landscape have the potential to support hydrologic functions at the site?	
L 5.1 Is the lake used by power boats with more than 10 hp? Yes = 1 No = 0	
L 5.2 Is the fetch on the lake side of the unit at least 1 mile in distance? Yes = 1 No = 0	
Total for L 5 Add the points in the boxes above	

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

Record the rating on the first page

L 6.0 Are the hydrologic functions provided by the site valuable to society?	
L 6.1 If more than one resource is present, choose the one with the highest score. There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit. points = 2 There are nature trails or other paths and recreational activities within 25 ft of OHWM. points = 1 Other resources that could be impacted by erosion. points = 1 There are no resources that can be impacted by erosion along the shores of the unit. points = 0	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite

Slope Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality Questions S 1.1 – S 1.3 are from Wetland Rating System (Hruby 2004b).	
S 1. Does the wetland unit have the potential to improve water quality?	
S 1.1 Characteristics of average slope of unit: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft horizontal distance)* Slope is1% or less points = 3 Slope is 1% - 2% points = 2 Slope is 2% - 5% points = 1 Slope is greater than 5% points = 0	
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES = 3 points NO = 0 points	
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Provide photo or map showing polygons of different plants types* Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	Figure__
Total for S 1 Add the points in the boxes above	

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

Record the rating on the first page

S 2. 0 Does the landscape have the potential to support the water quality function at the site?	
S 2.1 IS >10% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	

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

Record the rating on the first page

Wetland name or number Offsite

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	
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	
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

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 potential to reduce flooding and stream erosion?	
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best 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	

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 offsite

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	

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

Record the rating on the first page

S 6.0 Are the hydrologic functions provided by the site valuable to society?	
S 6.1 Distance to the nearest areas downstream that have flooding problems? 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	
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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number Offsite

These questions apply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat.
Questions H 1.1 – H 1.5 are from Wetland Rating System (Hruby 2004b).

H 1. Does the wetland unit have the potential to provide habitat for many species?

H 1.1 Structure of plant community – *indicators are Cowardin classes and layers in forest*
Check the Cowardin plant classes in unit – *Polygons for each class must total ¼ acre, or more than 10% of the unit if it is smaller than 2.5 acres.*
Provide map of Cowardin plant classes

- X Aquatic bed
- X Emergent plants
- X Scrub/shrub (areas where shrubs have > 30% cover)
- ___ Forested (areas where trees have > 30% cover)

If the unit has a forested class check if:

- ___ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon

Add the number of structures checked. If you have: 4 structures or more points = 4; 3 structures points = 2; 2 structures points = 1; 1 structure points = 0

Figure_ 2

H 1.2. Hydroperiods
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (*see text for descriptions of hydroperiods*).
Provide map of polygons with different hydroperiods

- X Permanently flooded or inundated
- X Seasonally flooded or inundated
- ___ Occasionally flooded or inundated
- X Saturated only

4 or more types present points = 3; 3 types present points = 2; 2 types present points = 1; 1 type present points = 0

- X Permanently flowing stream or river in, or adjacent to, the wetland
- ___ Seasonally flowing stream in, or adjacent to, the wetland
- ___ **Lake-fringe wetland = 2 points**
- ___ **Freshwater tidal wetland = 2 points**

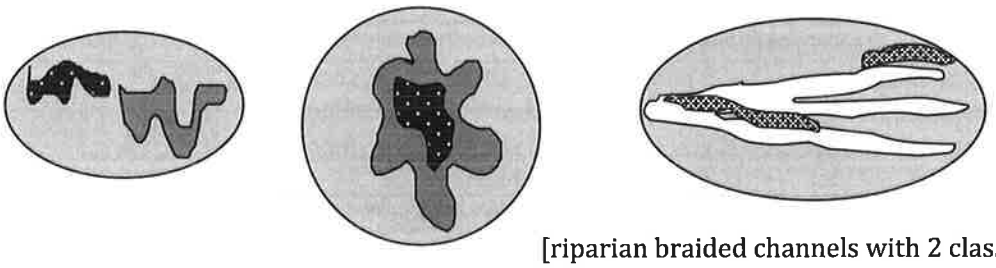
Figure_ 3

H 1.3. Richness of Plant Species
Count the number of plant species in the wetland unit that cover at least 10 ft².
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.
Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

If you counted: > 19 species points = 2; 5 - 19 species points = 1; < 5 species points = 0
List species below if you want to:

2

Wetland name or number Offsite

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. *Provide map of Cowardin plant classes (same as H1.1)*  None = 0 points Low = 1 point Moderate = 2 points  [riparian braided channels with 2 classes] **High = 3 points** NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."	Figure_ 3
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. X Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long). X Standing snags (diameter at the bottom > 4 inches) within the unit X 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) X 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 *(cut shrubs or trees that have not yet weathered where wood is exposed)* X At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)* ___Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
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	15

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

H

Record the rating on the first page

Wetland name or number Offsite

H 2.0 Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____ *Provide map of land use within 1 km of unit edge*		Figure_
If total accessible habitat is:		
> 1/3 (33.3%) of 1 km circle *(~100 hectares or 250 acres)*	points = 3	0
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	1
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		-1

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?		
H3.1Does 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	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	

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

H

Record the rating on the first page

Wetland name or number offsite (post)

SCORING FORM

Scoring functions to calculate mitigation credits and debits in Western Washington

Name of wetland (if known): TAL-726 offsite (post) Date of site visit: 5-3-16

Scored by DRT
SEC: __ TWNSHP: ___ 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	M	L	H
Rating of Landscape Potential	M	H	L
Rating of Value	H	H	H
Score Based on Ratings (see table below)	7	7	7

	Wetland HGM Class Used for Rating	
	Depressional	X
	Riverine	
	Lake-fringe	
	Slope	
	Flats	
	Freshwater Tidal	
	Check if unit has multiple HGM classes present	

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 offsite (post)

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 offsite (post)

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 Offsite (post)

Depressional and Flats Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions D 1.1 – D 1.4 are from the Wetland Rating System (Hruby 2004b).	
D 1.0 Does the wetland unit have the potential to improve water quality?	
D 1.1 Characteristics of surface water flows out of the wetland: *Provide photo or drawing* Unit is a depression with no surface water leaving it (no outlet) points =3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (If ditch is not permanently flowing treat unit as "intermittently flowing")	Figure __ 1
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES: points = 4 NO: points = 0	4
D 1.3 Characteristics of persistent plants (emergent, shrub, and/or forest Cowardin class *Provide map of Cowardin plant classes* Wetland has persistent, ungrazed, plants ≥ 95% of area points = 5 Wetland has persistent, ungrazed, plants ≥ 1/2 of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants <1/10 of area points = 0	Figure __ 3
D 1.4 Characteristics of seasonal ponding or inundation. *Provide map of hydroperiods* This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs. Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	Figure __ 2
Total for D 1 Add the points in the boxes above	10

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

M

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite (post)

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? 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? Yes = 1 No = 0	1
D 2.3 Are there septic systems within 250 ft of the wetland unit? Yes = 1 No = 0	0
D 2.4 Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 – D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2
Rating of Landscape Potential: If score is 3 or 4 = H 1 or 2 = M 0 = L *Record the rating on the first page*	M

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? Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where an aquatic resource is on the 303(d) list? 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*) Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3
Rating of Value: If score is 2-4 = H 1 = M 0 = L *Record the rating on the first page*	H

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite (post)

Depressional and Flats Wetlands **HYDROLOGIC FUNCTIONS** - Indicators that the site functions to reduce flooding and stream degradation. Questions D 4.1 – D 4.3 are from Wetland Rating System (Hruby 2004b).	
D 4. 0 Does the wetland unit have the potential to reduce flooding and erosion?	
D 4.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 Unit has an unconstricted, or slightly constricted, surface outlet and is permanently flowing) points = 0 (If ditch is not permanently flowing treat unit as "intermittently flowing")	0
D 4.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit 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 4.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	0
Total for D 4 Add the points in the boxes above	3
Rating of Site Potential: If score is **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**	L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite (post)

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

H

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. ☒ The site has been identified as important for flood storage or flood conveyance in a regional flood control plan. points = 2 ☐ 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 ☒ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 ☐ There are no problems with flooding downstream of the unit. points = 0	3

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

H

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite (post)

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 potential to improve water quality?	
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event: *If depressions > ½ of area of unit draw polygons on aerial photo or map* 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 ___
R 1.2 Characteristics of the plants in the unit (areas with >90% cover at person height): *Include photo or map showing polygons of different plants types* 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 ___
Total for R 1 Add the points in the boxes above	

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	
R. 2.2 Does the contributing basin include a UGA or incorporated area? Yes = 1 No = 0	
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	
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	
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

Record the rating on the first page

Wetland name or number offsite (past)

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? Yes = 1 No = 0	
R 3.2 Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	
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	
Total for R 3 Add the points in the boxes above	

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

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: *Provide aerial photo showing average widths* 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 ___
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description* (polygons need to have >90% cover at person height NOT Cowardin classes): *Provide photo or map showing polygons of different plants types* 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 ___
Total for R 4 Add the points in the boxes above	

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

Wetland name or number ~~Offsite~~ (post)

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	

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

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? *Choose the description that best fits the site.* 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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite (past)

Lake-fringe Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality. Questions L 1.1 – L 1.2 are from the Wetland Rating System (Hruby 2004b).	
L 1.0 Does the wetland unit have the potential to improve water quality?	
L 1.1 Average width of plants along the lakeshore *(use polygons of Cowardin classes)*: *Provide map of Cowardin classes with widths marked* Plants are more than 33 ft (10m) wide points = 6 Plants are more than 16 ft (5m) wide and <33ft points = 3 Plants are more than 6 ft (2m) wide and <16 ft points = 1 Plants are less than 6 ft wide points = 0	Figure ___
L 1.2 Characteristics of the plants in the wetland: choose the appropriate description that results in the highest points, and do not include any open water in your estimate of coverage. The herbaceous plants can be either the dominant form or as an understory in a shrub or forest community. These are not Cowardin classes. Area of cover is total cover in the unit, but it can be in patches. *Herbaceous does not include aquatic bed.* *Provide map with polygons of different plants types* Cover of herbaceous plants are >90% of the vegetated area points = 6 Cover of herbaceous plants are >2/3 of the vegetated area points = 4 Cover of herbaceous plants are >1/3 of the vegetated area points = 3 Other plants that are not aquatic bed > 2/3 unit points = 3 Other plants that are not aquatic bed in > 1/3 vegetated area points = 1 Aquatic bed plants and open water cover > 2/3 of the unit points = 0	Figure ___
Total for L 1 Add the points in the boxes above	

Rating of Site Potential: If score is **8 - 12 = H**
4 – 7 = M
0 - 3 = L

Record the rating on the first page

L 2. Does the landscape have the potential to support the water quality function at the site?	
L 2.1 Is the lake used by power boats? Yes = 1 No = 0	
L 2.2 Is more than 10% of the area within 150 ft of wetland unit (on the shore side) agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	
L 2.3 Does the lake have problems with algal blooms or excessive plants such as milfoil? Yes = 1 No = 0	
Total for L 2 Add the points in the boxes above	

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

Record the rating on the first page

Wetland name or number ~~offsite~~ (post)

L 3.0 Is the water quality improvement provided by the site valuable to society?	
L 3.1 Is the unit on a lake that is on the 303(d) list? Yes = 1 No = 0	
L 3.2 Is the lake 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	
L 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

Record the rating on the first page

Lake-fringe Wetlands

HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce shoreline erosion

Question L 4.1 is from Wetland Rating System (Hruby 2004b).

L 4.0 Does the wetland unit have the potential to reduce shoreline erosion?	
L 4.1 Distance along shore and average width of Cowardin classes along the lakeshore (**do not** include aquatic bed): *(choose the highest scoring description that matches conditions in the wetland)* *Include aerial photo or map with Cowardin plant classes* > ¾ of distance is shrubs or forest at least 33 ft (10m) wide points = 6 > ¾ of distance is shrubs or forest at least 6 ft (2 m) wide points = 4 > ¼ distance is shrubs or forest at least 33 ft (10m) wide points = 4 Plants are at least 6 ft (2m) wide (any type except aquatic bed) points = 2 Plants are less than 6 ft (2m) wide (any type except aquatic bed) points = 0	Figure__

Rating of Site Potential: If score is **6 = M**
0 - 5 = L

Record the rating on the first page

Wetland name or number offsite (port)

L 5.0 Does the landscape have the potential to support hydrologic functions at the site?	
L 5.1 Is the lake used by power boats with more than 10 hp? Yes = 1 No = 0	
L 5.2 Is the fetch on the lake side of the unit at least 1 mile in distance? Yes = 1 No = 0	
Total for L 5 Add the points in the boxes above	

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

Record the rating on the first page

L 6.0 Are the hydrologic functions provided by the site valuable to society?	
L 6.1 If more than one resource is present, choose the one with the highest score. There are human structures or old growth/mature forests within 25 ft of OHWM of the shore in the unit. points = 2 There are nature trails or other paths and recreational activities within 25 ft of OHWM. points = 1 Other resources that could be impacted by erosion. points = 1 There are no resources that can be impacted by erosion along the shores of the unit. points = 0	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number offsite (post)

Slope Wetlands **WATER QUALITY FUNCTIONS** - Indicators that the site functions to improve water quality Questions S 1.1 – S 1.3 are from Wetland Rating System (Hruby 2004b).	
S 1. Does the wetland unit have the potential to improve water quality?	
S 1.1 Characteristics of average slope of unit: *(a 1% slope has a 1 ft vertical drop in elevation for every 100 ft horizontal distance)* Slope is1% or less points = 3 Slope is 1% - 2% points = 2 Slope is 2% - 5% points = 1 Slope is greater than 5% points = 0	
S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES = 3 points NO = 0 points	
S 1.3 Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. *Dense plants means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches. Provide photo or map showing polygons of different plants types* Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > ½ of area points = 3 Dense, woody, plants > ½ of area points = 2 Dense, uncut, herbaceous plants > ¼ of area points = 1 Does not meet any of the criteria above for plants points = 0	Figure__
Total for S 1 Add the points in the boxes above	

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

Record the rating on the first page

S 2. 0 Does the landscape have the potential to support the water quality function at the site?	
S 2.1 IS >10% of the buffer area within 150 ft upslope of wetland unit in agricultural, pasture, residential, commercial, or urban? Yes = 1 No = 0	

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

Record the rating on the first page

Wetland name or number ~~Offsite~~ (post)

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	
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	
S 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? Yes = 2 No = 0	
Total for D 3 Add the points in the boxes above	

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

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 potential to reduce flooding and stream erosion?	
S 4.1 Characteristics of plants that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best 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	

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 offsite (post)

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	

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

Record the rating on the first page

S 6.0 Are the hydrologic functions provided by the site valuable to society?	
S 6.1 Distance to the nearest areas downstream that have flooding problems? 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	
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	
Total for R 6 Add the points in the boxes above	

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

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

Wetland name or number ~~offsite~~ (post)

These questions apply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat.
Questions H 1.1 – H 1.5 are from Wetland Rating System (Hruby 2004b).

H 1. Does the wetland unit have the potential to provide habitat for many species?

H 1.1 Structure of plant community – *indicators are Cowardin classes and layers in forest*
Check the Cowardin plant classes in unit – *Polygons for each class must total ¼ acre, or more than 10% of the unit if it is smaller than 2.5 acres.*

Provide map of Cowardin plant classes

Figure_

- X Aquatic bed
- X Emergent plants
- X Scrub/shrub (areas where shrubs have > 30% cover)
- ___Forested (areas where trees have > 30% cover)

If the unit has a forested class check if:

- ___The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon

Add the number of structures checked. If you have:

4 structures or more	points = 4
3 structures	points = 2
2 structures	points = 1
1 structure	points = 0

2

H 1.2. Hydroperiods
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count (*see text for descriptions of hydroperiods*).

Provide map of polygons with different hydroperiods

Figure_

X Permanently flooded or inundated	4 or more types present	points = 3
X Seasonally flooded or inundated	3 types present	points = 2
___Occasionally flooded or inundated	2 types present	points = 1
X Saturated only	1 type present	points = 0

- X Permanently flowing stream or river in, or adjacent to, the wetland
- ___Seasonally flowing stream in, or adjacent to, the wetland
- ___**Lake-fringe wetland = 2 points**
- ___**Freshwater tidal wetland = 2 points**

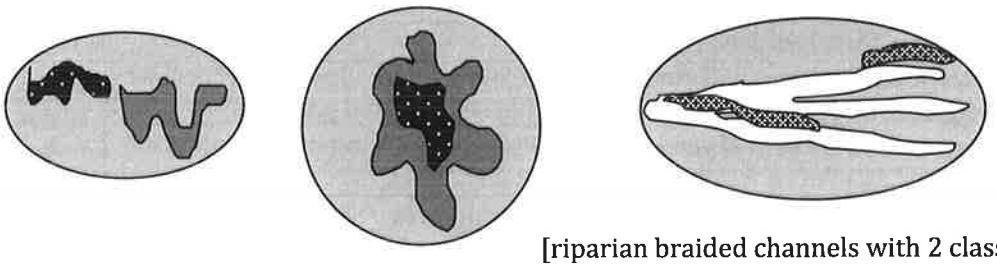
3

H 1.3. Richness of Plant Species
Count the number of plant species in the wetland unit that cover at least 10 ft².
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.
Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle

If you counted:	> 19 species	points = 2
List species below if you want to:	5 - 19 species	points = 1
	< 5 species	points = 0

2

Wetland name or number Offsite (post)

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. *Provide map of Cowardin plant classes (same as H1.1)*  None = 0 points Low = 1 point Moderate = 2 points  [riparian braided channels with 2 classes] **High = 3 points** NOTE: If you have four or more classes or three plants classes and open water the rating is always "high."	Figure_ 3
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. X Large, downed, woody debris within the unit (>4 inches diameter and 6 ft long). X Standing snags (diameter at the bottom > 4 inches) within the unit X 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) X 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 *(cut shrubs or trees that have not yet weathered where wood is exposed)* X At least ¼ acre of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)* ___Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	5
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	15

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

H

Record the rating on the first page

Wetland name or number offsite (post)

H 2.0 Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat + [(% moderate and low intensity land uses)/2] = _____ *Provide map of land use within 1 km of unit edge* If total accessible habitat is:		Figure_
> 1/3 (33.3%) of 1 km circle *(~100 hectares or 250 acres)*	points = 3	0
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	1
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		-1
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?		
H3.1Does 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	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	
Rating of Value: If score is 2 = H 1 = M 0 = L		H

Record the rating on the first page

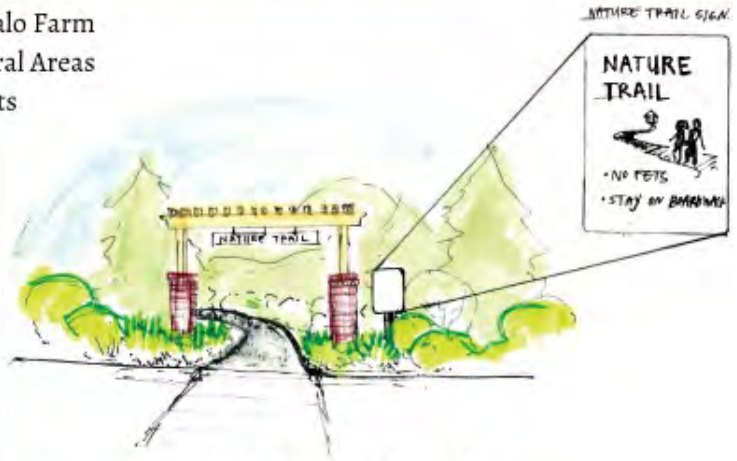
APPENDIX C

Conceptual Details for Boardwalks, Trails, and Interpretive Signs

Environmental Education

Destination location while teaching historical & native environment

- Honoring the history of site uses eg. Buffalo Farm
- Educating the restoration efforts of Natural Areas
- Sustainable aquatic and terrestrial habitats



Nature Trail Entrance Sketch

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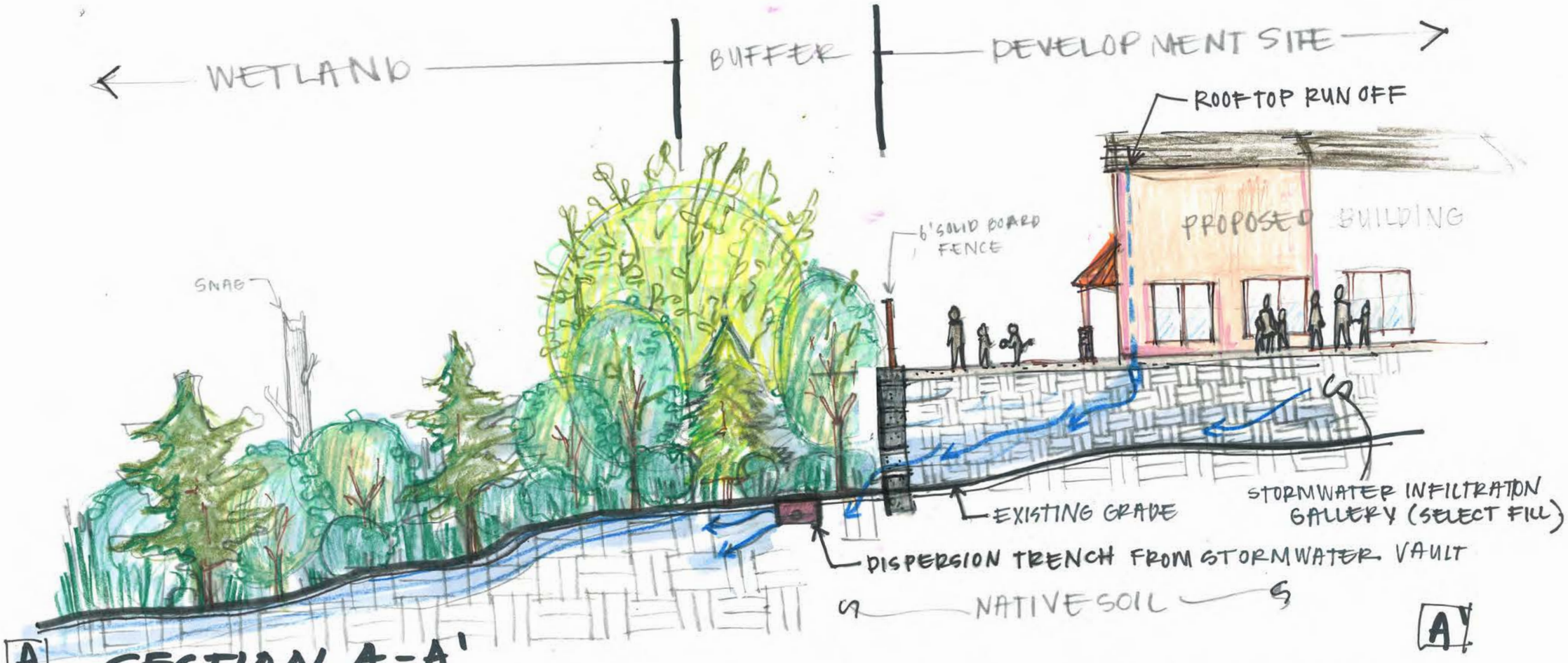
Habitat Enhancement

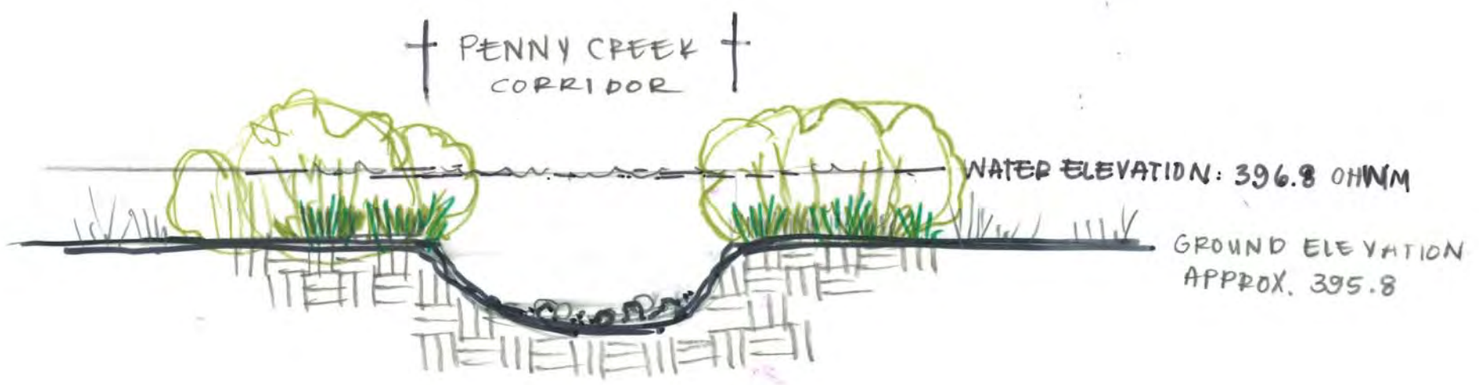
Wetland Enhancement & Flood Storage Augmentation



SECTION A-A'

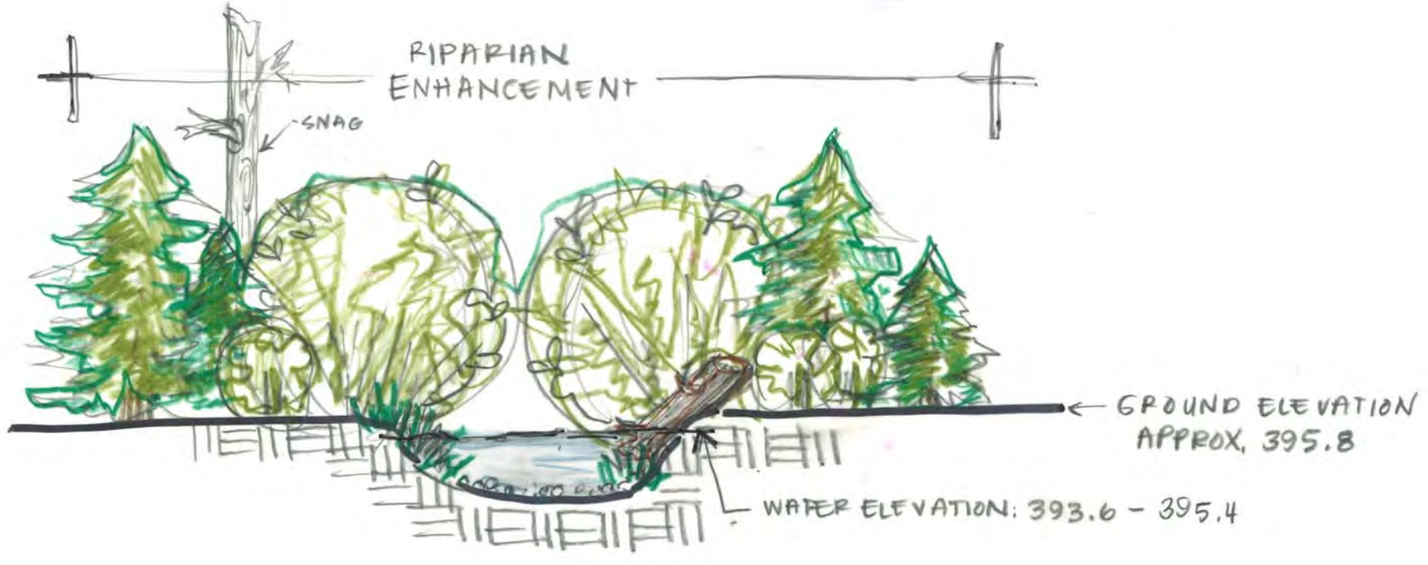
INNOVATIVE STORMWATER CONCEPT

SCALE: N.T.S.



PENNY CREEK - EXISTING CONDITIONS

SCALE: N.T.S.



PENNY CREEK - POST BEAVER MANAGEMENT

SCALE: N.T.S.