

APPENDIX B

Critical Areas Report for Lynnwood High School Redevelopment

CRITICAL AREAS REPORT
FOR
LYNNWOOD HIGH SCHOOL REDEVELOPMENT

Prepared for
CITY OF LYNNWOOD



August 2008
Revised February 2011

Submitted by:



SHOCKEY
PLANNING GROUP, Inc.

Project

**Critical Areas Report
for
Lynnwood High School Redevelopment
Lynnwood, Washington**

Prepared for

City of Lynnwood
19100 44th Avenue West
Lynnwood, WA 98036

Prepared by

SHOCKEY PLANNING GROUP, INC.
Briana Pavey, MS Wetland Scientist
2716 Colby Avenue
Everett, Washington 98201
Phone: (425) 258-9308

August 2008
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Table of Contents

INTRODUCTION	1
SITE ALTERNATIVES	3
Alternative 1	3
Alternative 2	3
Alternative 3	4
Alternative 4	4
Alternative 5	4
AFFECTED ENVIRONMENT	5
SITE DESCRIPTION	5
TOPOGRAPHY	5
SOILS	5
WATER RESOURCES	6
Surface Water	6
Groundwater	6
VEGETATION	6
WILDLIFE	7
THREATENED, ENDANGERED, AND PRIORITY SPECIES AND HABITATS	8
CRITICAL AREA DELINEATION RESULTS	9
WETLANDS	9
STREAMS	10
REGULATORY CONSIDERATIONS	13
FEDERAL REGULATIONS	13
STATE REGULATIONS	13
CITY OF LYNNWOOD REGULATIONS	13
IMPACTS OF ALTERNATIVES	15
MITIGATION MEASURES	17
WETLAND MITIGATION	17
STREAM MITIGATION	18
SIGNIFICANT UNAVOIDABLE IMPACTS	19
REFERENCES CITED	21

Figures

Figure 1 – Project Vicinity Map	2
Figure 2 – Wetland A	9
Figure 3 – Wetland C	10
Figure 4 – Tunnel Creek	10
Figure 5 – Existing Critical Areas	12
Figure 6 – Wetland Mitigation Plan	16
Figure 7 – Area proposed for wetland creation	17

Tables

Table 1 – Vegetation Present on Subject Property7
Table 2 – Wildlife Species Likely to Occur on Subject Property7

Appendices

Appendix A – Wetland Data Sheets
Appendix B – Wetland Rating Forms for Western Washington

INTRODUCTION

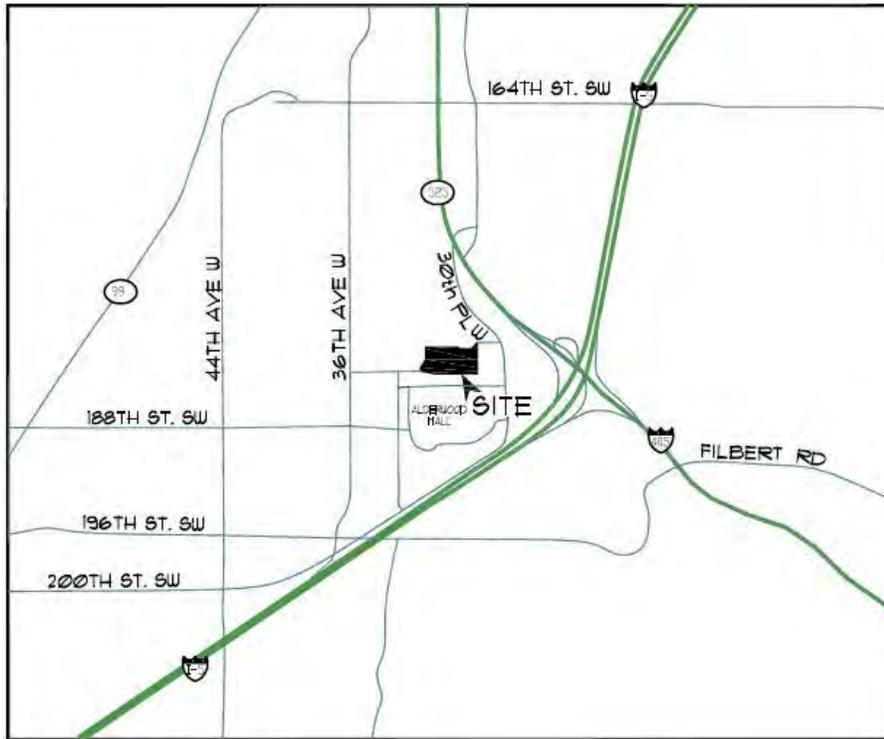
Edmonds School District No. 15 (District) owns property located at 3001 - 184th Street SW, Lynnwood, Washington, as shown on *Figure 1 – Project Vicinity Map*. This property will be leased by Cypress Equities (proponent) and be redeveloped for a mixed-use development within the City of Lynnwood.

Shockey Planning Group, Inc. prepared a wetland delineation report for this 40-acre site located in the City of Lynnwood, Washington for the Edmonds School District in 2006. Two wetlands (A and C) and one stream (Tunnel Creek) are located on the property. No other critical areas are located on the site. The delineation report provided wetland information to support a Draft Environmental Impact Statement (DEIS).

In March 2006, the District submitted a Comprehensive Plan Amendment (Docket request) to change the Comprehensive Plan designation of the site from Public Facility to Mixed Use. A request was also included to change the implementing zone from Public (PI) to Commercial Residential (CR). A Determination of Significance (DS) and request for comments on the scope of the EIS was issued by the City of Lynnwood on June 1, 2006. This notice requires the proponent to study several areas within the EIS, including “Impact to watercourse (Tunnel Creek) crossing the northern part of the site”. This *Critical Areas Report* addresses the information required by the DS regarding Tunnel Creek as well as other critical areas found on the site.

Approval of any of the alternatives will require compliance with the City of Lynnwood Critical Areas Code Requirements [Lynnwood Municipal Code Chapter 17.10]. This document will present the information necessary for agencies, affected tribes and members of the public to comment on the effects of the proposed development relative to critical areas on, and adjacent to, the subject property. This report is the result of site-specific field investigations and analysis of impacts that could occur as a result of the alternatives presented.

Figure 1 – Project Vicinity Map



SITE ALTERNATIVES

Design Alternatives

The five design alternatives that are being analyzed in the DEIS include Alternatives 1 through 5. These alternatives are described in detail below. All alternatives include a through road connecting Maple Avenue with 184th Street S.W. This roadway, which would be an extension of 33rd Avenue W, is contained in Lynnwood's long-range transportation plan and is needed to serve the development proposal. The new roadway would impact Wetland C; therefore all alternatives include impacts to critical areas. No impacts to Wetland A would occur under any of the proposed alternatives.

The road design has taken wetland mitigation into consideration. Appropriate buffer between the wetland mitigation area and the proposed roadway has been provided for development of a 3-lane road. The buffer width allows for the 3-lane right-of-way without encroaching on the wetland buffer. This roadway is a design feature that is required by the City of Lynnwood, and is considered in all design alternatives.

Alternative 1

This Alternative would create a mixed-use development composed of several major elements including a Costco Wholesale, an office building, retail commercial uses, multi-family residential units, restaurants, entertainment uses and associated parking facilities. Building sizes would range from one to five stories. A new bypass road would serve the site with access from 184th Street S.W. to the intersection of Maple Road and Alderwood Mall Parkway.

Wetland C (3,262 SF) would be filled by the completion of the bypass roadway. This wetland loss would be mitigated with wetland creation at a ratio of 2:1 adjacent to Wetland A. A large stand of evergreen trees along the western edge of the site would be preserved, providing a significant buffer adjacent to the residential areas to the west and north of the site. Extensive landscaping would be provided throughout the site and along the perimeter.

Alternative 2

This Alternative would create a mixed-use development composed of a Costco warehouse and retail and commercial uses at a higher density than Alternative 1. The five-story office building is not included in this alternative. The site would include pedestrian connections, with landscaping along the pedestrian and vehicular routes. A new bypass road would be constructed linking 184th Street SW to the intersection of Maple Road and Alderwood Mall Parkway. Internal roads would serve the site with access from 184th Street SW and the new bypass road.

Wetland C would be filled by the completion of the bypass roadway. This wetland would be mitigated with wetland creation adjacent to Wetland A. A large stand of evergreen trees along the western edge of the site would be preserved, providing a significant buffer adjacent to the residential areas to the west and north of the site.

Alternative 3

This Alternative would include the same mix of uses as Alternative 1, but at a less intensive level of development. Alternative 3 would include a Costco warehouse, and mixed-use development including retail, amusement/recreation, residential space, and restaurants. A five-story office building would be included in this proposal. Pedestrian connections would be emphasized throughout the site, and landscaping would be included along these connections and along vehicular routes. A new bypass road would be constructed linking 184th Street SW to the intersection of Maple Road and Alderwood Mall Parkway. Internal roads would serve the site with access from 184th Street SW and the new bypass road.

Wetland C would be filled by the completion of the access roadway. This wetland would be mitigated with wetland creation adjacent to Wetland A. A large stand of evergreen trees along the western edge of the site would be preserved, providing a significant buffer adjacent to the residential areas to the west and north of the site.

Alternative 4

Alternative 4 would contain retail uses including some restaurants. The retail center would be comprised of up to 14 structures. No Costco is included in this proposal. This alternative includes a large open space area near the center of the development. Extensive landscaping would be provided throughout the site and along the perimeter boundaries.

A new bypass road would be constructed linking 184th Street SW to the intersection of Maple Road and Alderwood Mall Parkway. Internal roads would serve the site with access from 184th Street SW and the new bypass road. Wetland C would be filled by the completion of the access roadway. This wetland would be mitigated with wetland creation adjacent to Wetland A.

Alternative 5

This Alternative is the “No Action” Alternative. It assumes that existing zoning remains in place and includes development allowed under existing land use regulations. The Land Use designation would remain “Public Facilities” (PF) and zoning of the site would remain “Public and Semi-Public” (P-1). Uses allowed under these designations are Residential Uses, Institutional Uses, Medical Facilities, and Municipal Uses. Specific uses assumed for this alternative would include a medical office building, medical and dental offices, nursing home facilities and a child day care facility. A combination of surface parking and parking structures would be provided throughout the site. Pedestrian connections and landscaping would be provided along walkways and vehicular routes.

A new bypass road would be constructed linking 184th Street SW to the intersection of Maple Road and Alderwood Mall Parkway. Internal roads would serve the site with access from 184th Street SW and the new bypass road. Wetland C would be filled by the completion of the access roadway. This wetland would be mitigated with wetland creation adjacent to Wetland A.

AFFECTED ENVIRONMENT

SITE DESCRIPTION

The property covers approximately 40 acres and is the site of the current Lynnwood High School and its associated buildings. Two wetlands (A and C) and one stream (Tunnel Creek) are located on the property. No other critical areas are located on the site.

TOPOGRAPHY

The subject property is located on glacial till plains and generally slopes to the northeast. According to the topographic survey, elevation ranges from a high of 420 feet above sea level at the southwest border of the property to a low of 380 feet along the northeast border of the property along the edge of the property. The USGS topographic quadrangle suggests that elevations on the subject property range from 420 feet down to 360 feet. For the most part, the subject property is relatively flat with gentle unidirectional sloping from west to east and some rolling topography.

SOILS

The NRCS has mapped the soils of the subject property as presented in the *Soil Survey of Snohomish County Area, Washington* (NRCS, 1983). Four soil map units (MU's) are shown to occur on or in close proximity to the subject property. These MU's include: Alderwood-Urban land complex, Everett gravelly sandy loam, Mukilteo muck, and Urban land.

The Alderwood-Urban land complex (8-15 percent slopes, MU #6) covers approximately 16 percent of the subject property in the northwest corner. The Alderwood-Urban land complex is comprised of approximately 60 percent Alderwood soils and 25 percent Urban land and occurs on plains. Permeability of the Alderwood soil is moderately rapid above the hardpan and very slow through it. Available water capacity is low.

Everett gravelly sandy loam (8-15 percent slopes, MU #18) covers approximately 17 percent of the subject property in the southwest corner. The Everett series consists of somewhat excessively drained soils that are underlain by very gravelly sand. These soils formed in very gravelly glacial outwash deposits under conifers. They are found on terraces and terrace fronts and are gently undulating to moderately steep. They tend to be located along drainage ways or on short slopes between terrace benches and are stonier and more gravelly. The run-off potential of this soil is slow to rapid depending on the slope.

Mukilteo muck (MU #34) covers approximately three percent of the subject property in the northeast corner of the property closest to Alderwood Mall Parkway and Maple Avenue. The Mukilteo series consists of deep, very poorly drained soils formed in deep organic deposits. Mukilteo soils are mainly in depressional areas on glacial uplands. Some are in river valleys. Slopes are typically zero to two percent.

The remaining, approximately 64 percent is comprised of Urban land (MU#78) and occurs from the west central portion of the property and continues to the east side where 182nd Street SW enters the property. Most of the Urban land is covered by buildings, playing fields and parking lots. Erosion is unlikely to occur on the subject property because of the shallow slopes, the direction of the running water through culverts and the vegetative cover of the pervious surfaces.

WATER RESOURCES

Surface Water

The subject property occurs in the Water Resource Inventory Area (WRIA) #8 – Cedar-Sammamish watershed, in the Golde Creek Drainage of the Scriber Creek Sub-basin (R.W. Beck, 1998). The Cedar-Sammamish watershed is located in the north central Puget Sound region and includes portions of Snohomish and King Counties.

Based on the topographic survey of the property, site evaluation and the City of Lynnwood, the primary channel of Tunnel Creek is located on or near the north and east edges of the subject property. All water associated with Tunnel Creek and drainage draining from residential and developed commercial areas neighboring the subject property is also directed onto the property via drainage culverts. The culverts direct the water through Wetland A into a stormwater detention pond on the north end of the property and into Wetland C, which outlets to a culvert under the school driveway. Surface water directed by the culverts comprises almost all of the water in Wetlands A and C. The source of Tunnel Creek is surface water runoff and groundwater seepage from the subject property, the adjacent stormwater detention ponds, and other contributing properties. Tunnel Creek terminates in Swamp Creek to the northeast.

Groundwater

Groundwater is likely present in the glacial till soils that comprise the site. Most of the subject property has a relatively shallow, weakly cemented hardpan approximately 35 inches below the soil surface. A seasonal perched water table on top of the hardpan typically occurs 18 to 36 inches below the soil surface from January through March. Other cemented layers with low permeability are likely distributed through the vertical profile of the property. Thus, minor amounts of groundwater may occur at any depth. A relatively high water table, associated with Tunnel Creek, is expected to occur near the creek.

VEGETATION

Vegetation on the subject property is comprised of second growth mixed forest, wetland, and invasive species. The plants are listed in *Table 1* below.

Table 1 – Vegetation Present on Subject Property

Scientific Name ²	Common Name ²	Indicator Status ³
TREES:		
<i>Alnus rubra</i>	Red alder	FAC
<i>Acer macrophyllum</i>	Big Leaf Maple	FACU
<i>Pseudotsuga menziesii</i>	Douglas-fir	FACU
<i>Thuja plicata</i>	Western red-cedar	FAC
SHRUBS		
<i>Ilex aquifolium</i>	Holly	FACU
<i>Rubus laciniatus</i>	Evergreen blackberry	FACU+
<i>Rubus procerus</i>	Himalayan blackberry	FACU
<i>Rubus spectabilis</i>	Salmonberry	FAC+
<i>Gaultheria shallon</i>	Salal	FACU
GRAMINOIDS:		
<i>Phalaris arundinacea</i>	Reed Canary Grass	FACW
<i>Typha latifolia</i>	Common Cattail	OBL
FORBS:		
<i>Equisetum arvense</i>	Common horsetail	FAC
<i>Equisetum telmateia</i>	Giant horsetail	FACW
<i>Hedera helix</i>	English ivy	FACU
<i>Polystichum munitum</i>	Sword fern	FACU
<i>Pteridium aquilinum</i>	Bracken fern	FACU
<i>Ranunculus repens</i>	Creeping buttercup	FACW
<i>Pteridium aquilinum</i>	Bracken fern	FACU
<i>Scirpus microcarpus</i>	Small Flowered Bulrush	OBL

1 – Species list compiled during site visits in 2006.

2 – Scientific and common names following Cooke (1997).

3 – Indicator Status refers to probability of occurrence in a wetland:

OBL: obligate, Probability >99% occur in wetlands; FACW: facultative wetland, Probability 67% to 99% occur in wetlands; FAC: facultative, Probability 34% to 66% occur in wetlands; FACU: facultative upland, Probability 1% to 33% occur in wetlands; UPL: upland, Probability <1% occur in wetlands.

WILDLIFE

The subject property provides a small non-contiguous block of undeveloped forested habitat at its western edge to a limited variety of wildlife species in an area that is undergoing a fast rate of development. Habitat is isolated and available to a very small number of wildlife, but many species of birds (City of Lynnwood, 2004.) See **Table 2** for wildlife species likely to inhabit the subject property. The Washington Department of Fish and Wildlife (WDFW) does not list Tunnel Creek as a fish bearing stream.

Table 2 – Wildlife Species Likely to Occur on Subject Property

Common Name	Species Name
<i>Mammals</i>	
Raccoon	<i>Procyon lotor</i>
Virginia Opossum	<i>Didelphis virginiana</i>
Coyote	<i>Canis latrans</i>
Cottontail Rabbit	<i>Sylvilagus spp.</i>
Squirrel	<i>Sciurus spp.</i>
Muskrat	<i>Ondatra zibethicus</i>

<i>Birds</i>	
Red-Winged Blackbird	<i>Agelaius phoeniceus</i>
Cassin's Finch	<i>Carpodacus cassinii</i>
House Finch	<i>Carpodacus mexicanus</i>
Yellow Warbler	<i>Dendroica petechia</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>
Western Tanager	<i>Piranga ludoviciana</i>
House Wren	<i>Troglodytes aedon</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
American Crow	<i>Corvus brachyrhynchos</i>
Cassin's Vireo	<i>Vireo cassinii</i>
Warbling Vireo	<i>Vireo gilvus</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Canada Goose	<i>Branta canadensis</i>
Black-capped Chickadee	<i>Poecile atricapilla</i>

THREATENED, ENDANGERED, AND PRIORITY SPECIES AND HABITATS

The subject property is located in the vicinity of an exotic animal farm and a heron rookery. Subsequent conversations with the WDFW verify that the subject property is a sufficient distance from the heron colony which would prevent disturbance of nesting herons (Pers. comm., 2006.).

According to the Department of Natural Resources (DNR) Washington Natural Heritage Program database, threatened or endangered plant species are present in the same Section, Township and Range as the subject property. Additional information was requested from DNR which revealed that no endangered or threatened plant species are located on site or in the immediate vicinity of this project.

CRITICAL AREA DELINEATION RESULTS

Two wetlands (A and C) and one stream (Tunnel Creek) were identified on the subject property. The wetlands and stream are the only critical areas present on this site. Geologically hazardous areas, fish and wildlife habitat management areas, special flood hazard areas, and groundwater protection areas do not occur on this site.

WETLANDS

Two site visits were utilized to identify suspect wetland areas. These site visits revealed two wetland polygons on the subject property. These areas were determined to be regulated wetlands because they exhibited positive indicators of the mandatory three criteria: presence of hydric soils, wetland hydrology, and hydrophytic vegetation. These include Wetland A, a flow-through depressional wetland adjacent to the northernmost border of the subject property which feeds the off-site stormwater detention pond; and Wetland C, a flow-through depressional wetland fed and drained by surface water run-off culverts from the neighboring developed properties. These areas are shown together on *Figure 4 – Critical Areas Map*.

Wetland A. Wetland A (*Figure 2*) is associated with Tunnel Creek as shown on *Figure 4*. The wetland is continuous from the northwest property corner to the central north property edge where it feeds into a stormwater detention pond. The total area of Wetland A is 17,460 square feet. According to Lynnwood Municipal Code (LMC) 17.10.050, which relies on the Department of Ecology’s 2004 Washington State Wetland Rating System for Western Washington, Wetland A is classified as Category II for water quality functions, hydrologic functions, and habitat functions. Wetland A functions to improve the water quality of surface water run-off from the neighboring developed properties prior to its subsequent release into Swamp Creek via surface and groundwater routes. Category II wetlands are provided a 110-foot protective buffer in the City. Overall, Wetland A performs moderate habitat functional values. The higher values are for overall water quality and hydrological functions. This wetland is in good condition; however, residential development, vegetation clearing, and landscaping have facilitated a heavy infestation of invasive plant species near its western boundary.



Figure 2 – Wetland A

Wetland Parameters

Hydrology for this wetland is provided primarily by culverts leading into and out of the wetland. Signs of hydrology include soil saturation to the surface, a sulfuric odor, and organic staining on vegetation and tree trunks. The dominant cover type is a forested wetland; however, scrub-shrub, and emergent cover types are also present. Plants in this wetland area include giant horsetail, small flowered bulrush, creeping buttercup, Himalayan blackberry, and bittersweet

nightshade. The indicator status of all of these plants ranges from facultative to facultative wetland. The primary soil type in this wetland is Mukilteo muck. Soil color from 0 to 18 inches below ground surface is Gley 1-4/SGY with a silty sand texture.

Wetland C. Wetland C (*Figure 3*) is a flow through depressional wetland that is inundated seasonally. The wetland is fed by a culvert draining surface water run-off from the neighboring developed properties. Although the wetland is not inundated during dry months the soil remains saturated to the surface year round. The wetland lies in a shady forested patch with mature red alder trees and a mix of forest upland and wetland plants. The total area of Wetland C is 3,262 square feet. According to Lynnwood Municipal Code (LMC) 17.10.050, which relies on the Department of Ecology’s 2004 Washington State Wetland Rating System for Western Washington, Wetland C is classified as Category III for water quality functions, hydrologic functions, and habitat functions. Wetland C functions as a filter for surface water run-off before it seeps into the water table. Category III wetlands are provided a 75-foot protective buffer in the City. Overall, Wetland C performs limited habitat functional values. The highest value is for water quality. This wetland is in fair condition and is located in the small patch of forest on the subject property.



Figure 3 – Wetland C

Wetland Parameters

Wetland hydrology primarily is provided by surface water inflows. The wetland is dominated by a forested over story of fir and alder trees. Other vegetation includes horse tail, bracken fern and salmonberry. Over 50% of the dominant plant species were hydrophytic. The primary soil type at this wetland is Alderwood-Urban land complex. From 0 to 18 inches below ground surface the soil color is Gley 1-2.5/10Y with a silty texture. Hydrological indicators were saturation to the surface, hydric soils, a sulfuric odor and organic staining.

Figure 4 – Tunnel Creek

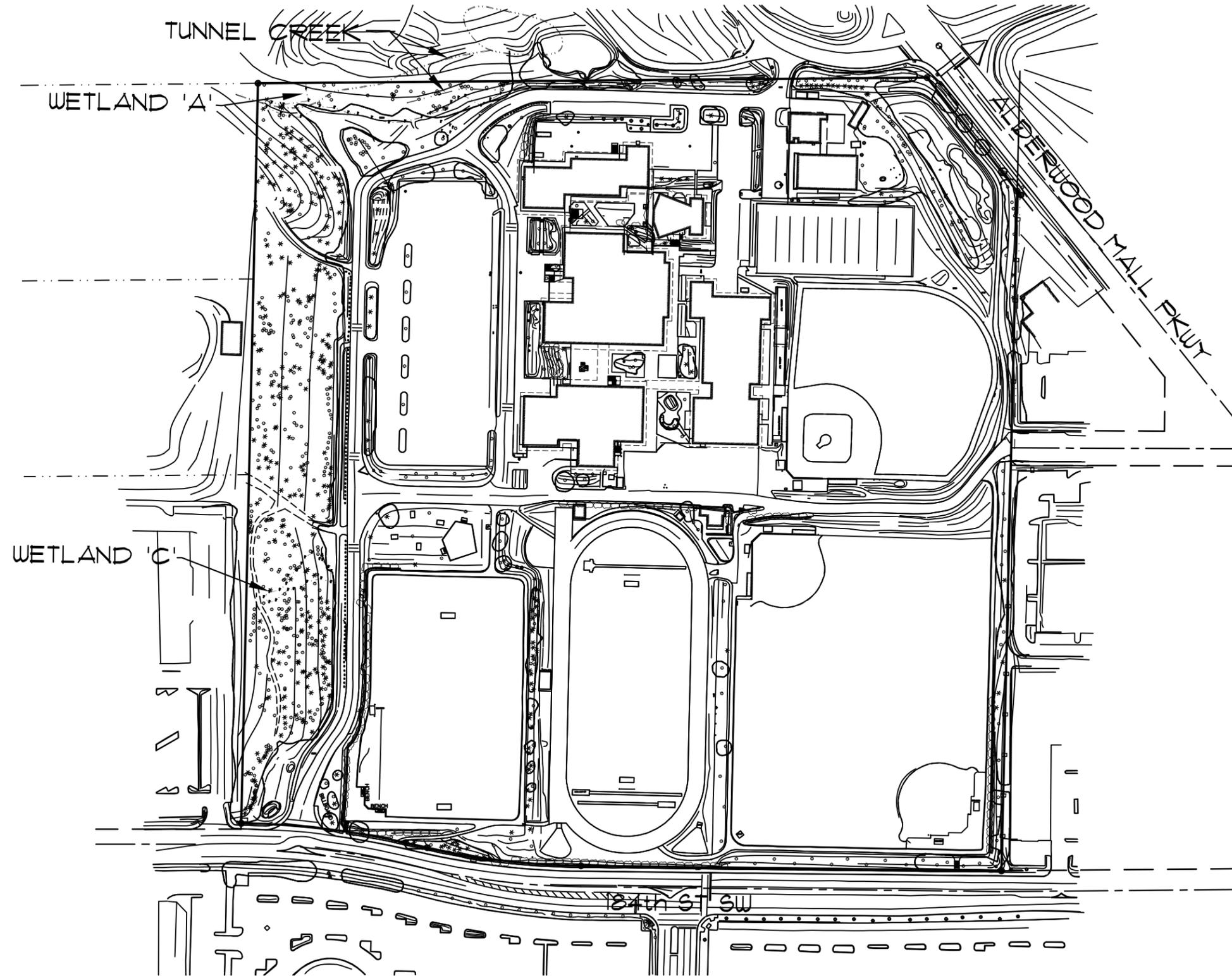
STREAMS

One stream, Tunnel Creek, is located at the northern property boundary of the subject project. It is shown on *Figures 4, 5, and 6*. The source of the water is surface water run-off from adjacent developed land. The creek flows northeast across SR-525 via culverts until it terminates into Swamp Creek. It flows year-round. The City of Lynnwood classifies this creek as Category III which means that it is not used by salmonids (LMC 17.10.060).



WDFW does not classify this creek as fish bearing (Pers. Comm., Holser February 14, 2010). The City of Lynnwood requires a 35-foot buffer from the ordinary high water mark of all Category III streams (LMC 17.10.061). The stream buffer in the western portion of the site is confined within the buffer of Wetland A. It then enters a culvert about mid-way along the northern boundary and continues for approximately 400 linear feet, then daylights again east of the existing driveway access for approximately 200 linear feet.

PORTION OF NE 1/4, NE 1/4 SECTION 15 ,T.27 N., R.4 E., W.M.



SCALE: 1" = 200'
Date: 04-11

2716 Colby Avenue
Everett, WA 98201
P: 425.258.9308
F: 425.259.4448
www.shockeyplanning.com

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LYNNWOOD HIGH SCHOOL REDEVELOPMENT
EXISTING CONDITIONS
CITY OF LYNNWOOD

FIGURE 5
EDSC-LYNNWOOD
10135

REGULATORY CONSIDERATIONS

Several federal and State regulations may apply to development in or near critical areas on the subject property.

FEDERAL REGULATIONS

At the federal level, several sections of the Clean Water Act (CWA) would apply with regard to pollution of surface water including water quality certification (Section 401), compliance with the National Pollutant Discharge Elimination System (NPDES), and discharge of dredge or fill material into waters of the U.S. (wetland and streams). The State of Washington Department of Ecology has local regulatory authority over Section 401 and Section 402 of the CWA as granted by the U.S. Environmental Protection Agency.

There are no species listed as threatened or endangered under the federal Endangered Species Act (ESA) on or near the subject property (P. Thompson, 2006). Thus, compliance with ESA should not be an issue.

STATE REGULATIONS

State regulations that may apply to development in or near critical areas include:

- State Environmental Policy Act (SEPA). Potential impacts on critical areas resulting from property development would be evaluated by the City of Lynnwood under SEPA. SEPA evaluations link up with other State regulations.
- State Hydraulic Code and Hydraulic Project Approval (HPA) for activities that alter flow within or characteristics of a Water of the State (streams).
- CWA Section 401 water quality certification, administered by the State as described under federal regulations.
- CWA Section 402 stormwater discharge permits (NPDES), administered by the State as described under federal regulations.
- Coastal Zone Management would not apply given the distal location of the subject property to the coastal environment.
- Floodplain Development Permit would likely not apply since there are no FEMA mapped flood prone areas.

CITY OF LYNNWOOD REGULATIONS

The City of Lynnwood addresses wetlands and other critical areas in several sections of Ordinance No. 2598, the City's Critical Areas Ordinance. Specifically, the purpose of LMC Section 17.10.010 is to identify critical areas and to supplement the development requirements contained in the code by providing for additional controls as required by the Washington State Growth Management Act and other laws, also to protect the functions and values of these

environmentally critical features for the public benefit, while providing property owners with reasonable use of their property.

- LMC Section 17.10.080 and LMC 17.10.081 Fish and wildlife priority habitat and Wildlife habitat assessment - requires identification and provides protection for fish and wildlife habitat conservation areas.
- LMC 17.10.050 and LMC 17.10.060 Wetland delineation and rating system and Stream Rating - identifies the descriptive criteria to be used in classifying streams and wetlands. The previous sections of this document classified all streams and wetlands according to the criteria listed in this section.
- LMC 17.10.051 and LMC 17.10.061 Standard buffer width requirements - prescribes protective buffer widths for wetlands and streams based on the category or type.
- LMC 17.10.111(C) Critical areas signs, monuments, and fencing - All critical areas and their buffers, which have been protected through the application of this chapter, shall be permanently protected by designating them as native growth protection areas (NGPAs).
- LMC 17.10.045 Critical Area Study content requirements - streams and wetlands, lists all of the elements and information required in a complete critical areas report.
- LMC 17.10.054 Mitigation plan requirements - lists all of the elements and information required in a compensatory mitigation plan. Proposed mitigation for the applicable Alternatives can be found at the end of this document.
- LMC 17.10.040 Allowed development activities in streams, wetlands and buffers - addresses project activities that are allowed in such areas. Such activities must also meet the requirements of LMC 17.10.045 and 17.10.046. Uses permitted on properties subject to the Critical Areas Ordinance shall be the same as those permitted in the zoning district in which the property is located.

LMC 17.10.047, Activities allowed in streams, wetlands, and buffers pursuant to best management practices - allows the normal, routine and emergency maintenance and repair of existing roads and utility corridors, utility facilities, equipment and appurtenances. This section also allows all development activities in non-riparian Category III or Category IV wetlands smaller than 2,500 SF, which have 80 percent or greater aerial cover by invasive species, and have been determined by a qualified professional to be of low function, provided that action is taken to mitigate for the lost functions.

LMC 17.10.065, Culverting - culverting within a stream shall only be permitted when necessary to provide access to a lot when no other feasible means of access exists.

IMPACTS OF ALTERNATIVES

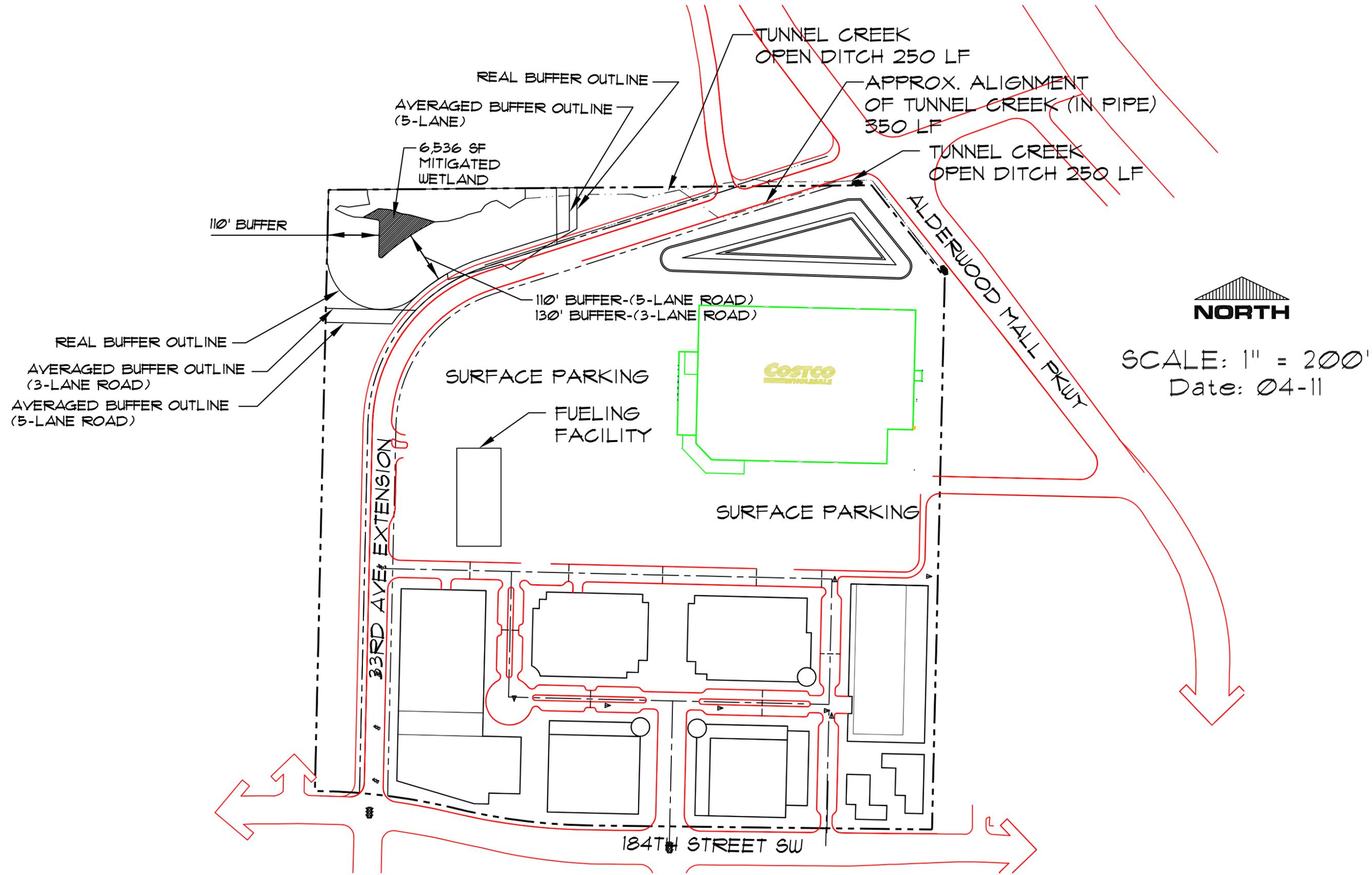
As a condition of site development under all of the alternatives, the City of Lynnwood is requiring that a connector street run through the site linking 184th Street S.W. with Maple Avenue, as an extension of 33rd Avenue W. Development of this roadway would result in the filling of Wetland C (3,262 SF). Compensatory mitigation is proposed on site in the form of wetland creation at a 2:1 ratio. Wetland would be created (6,536 SF) adjacent to Tunnel Creek and Wetland A in the northwestern property corner. A 110-foot buffer would be provided around the newly created wetland in accordance with LMC 17.10.051.

To allow the appropriate right-of-way width for a 3-lane roadway, buffer averaging is proposed for the 110-foot buffer around Wetland A. See **Figure 4** for the wetland mitigation area. No direct impacts to Wetland A would occur under any of these Alternatives.

An additional approximately 250 linear feet of Tunnel Creek that is currently open channel east of the existing access driveway would be placed into a culvert in order to accommodate the new roadway. Currently approximately 350 linear feet of Tunnel Creek is in pipe and 250 linear feet in an open ditch in the area that would be impacted. The City of Lynnwood permits culverting within a stream when it is necessary to provide access to a lot when no other feasible means of access exists. It has been determined by the City of Lynnwood that the proposed new roadway is necessary to access the site under any of the Alternatives. The proposed alignment has been designed to have the minimum number of road crossings and to avoid intersections.

The associated buffer with Tunnel Creek is 35 feet in accordance with LMC 17.10.061. This buffer is already impacted with existing site improvements and does not currently meet the 35 foot buffer requirement. In accordance with LMC 17.10.047.C *existing structures, facilities, landscaping or other improvements that because of their existing location do not meet the setback requirements of this chapter, may be remodeled, reconstructed or replaced, or maintained or repaired, providing that any such activity does not further intrude into a critical area or buffer...* because the 35 foot buffer would not be met in the northeastern portion of the site and because this area is already developed as a detention pond, there is a detention pond proposed in the same location; no additional encroachment into the buffer is proposed.

PORTION OF NE 1/4, NE 1/4 SECTION 15 ,T.27 N., R.4 E., W.M.



2716 Colby Avenue
Everett, WA 98201
p: 425.258.9308
f: 425.259.4448
www.shockleyplanning.com

Land Use
Environmental Analysis
Permitting
Public Policy



LYNNWOOD HIGH SCHOOL REDEVELOPMENT
PROPOSED CONDITIONS
CITY OF LYNNWOOD

FIGURE 6
ED5C-LYNNWOOD
10135

MITIGATION MEASURES

WETLAND MITIGATION

All project Alternatives include the filling of Wetland C to create a through roadway between 184th Street SW and Maple Avenue. The following mitigation measures apply to the mitigation effort which would be required under these alternatives.

In order to replace the functions and values of Wetland C, the proponent would replace the 3,262 SF of fill (Wetland C) by creating 6,536 SF of wetland adjacent to the south side of Wetland A. As a performance standard, the new wetland boundaries would be observed to determine that the area of replacement equals or exceeds an area of 6,536 SF. This would create a 2:1 mitigation ratio, as required by LMC 17.10.055. This would entail the removal of invasive species and planting of native indigenous trees, shrubs, and herbaceous species. The proponent would periodically conduct a functions and values analysis of the wetland to determine if functional gains expected are attained.

The wetland creation area would be excavated to the same topography as Wetland A, to provide hydrology via groundwater and potential overbank flooding of Tunnel Creek. As part of the wetland creation, old culverts and gravel fill would be removed. It would also be planted with a mix of native indigenous woody species and a seed mix appropriate to the specific conditions of the site. Historically, this area has been maintained as lawn for the school property. The area proposed for wetland creation is shown below in *Figure 7*.



Figure 7 – Area proposed for wetland creation

Periodic monitoring would evaluate the species composition of the wetland creation area. At least 80 percent of the species composition would include planted species or native species that occur in the adjacent wetland area through Year 5 of the five-year performance monitoring period (LMC 17.10.054).

Construction activities adjacent to the buffer areas would be managed to control surface runoff, erosion and sediment generated by the project. All soil disturbances would be treated with mulch, hydromulch, and/or hydroseed during the rainy season, or from October 1 through May 31. At least 90 percent of the soil surface would be covered with mulch. Visual observation would be used to identify sheet erosion, rill erosion, sediment deposition, and/or turbid water discharged from soil disturbances.

The proponent would create wetland buffer (110 feet wide) adjacent to the newly created wetland area (adjacent to Wetland A). This would entail removal of invasive species and planting of native indigenous trees, shrubs, and herbaceous species to establish a buffer of the expanded boundaries of Wetland A. The additional buffer would be 110 feet wide along the portion of newly created wetland. The total area of Wetland A buffer post-mitigation would be 74,334 SF. Periodic monitoring would evaluate the species composition of the buffer areas. At least 80 percent of the species composition would include planted species or native species that occur in the surrounding wetland area through Year 5 of the five-year performance monitoring period (LMC 17.10.054).

In order to meet the code requirement of minimizing wetland buffer impacts, the buffer of Wetland A would be averaged to allow a 3-lane roadway to connect Maple Avenue to 184th Street S.W. The minimum buffer width must be greater than 56.25 feet at the narrowest point. Additional buffer would be provided south of current 110-foot buffer requirement and west of proposed roadway.

STREAM MITIGATION

All project Alternatives would require a total of 350 linear feet of Tunnel Creek to be placed in a pipe as described above. The following mitigation measures apply to the mitigation effort which would be required under these alternatives.

Compensatory mitigation is proposed on site in the form of day lighting a portion of Tunnel Creek west of the new roadway that is currently contained in a pipe. The proposed condition would include approximately 350 linear feet within pipe and 250 linear feet of open ditch in the area that would be impacted. Upon project completion, approximately 50 linear feet of Tunnel Creek that is currently contained in a pipe would be daylighted. Final design for this area has not yet been completed, however it is anticipated that the new stream channel would be one to two feet deep and two to three feet wide. The stream buffer would be planted with a mix of indigenous woody species and a seed mix appropriate to the specific conditions of the site.

SIGNIFICANT UNAVOIDABLE IMPACTS

With the mitigation outlined in the previous sections, no significant unavoidable impacts would occur with any of the five alternatives.

DISCLAIMER

Shockey Planning Group, Inc. has prepared this Critical Areas Report for inclusion in the Draft Environmental Impact Statement for the City of Lynnwood. The information contained herein is, to our knowledge, correct and accurate. It should be recognized that the establishment of stream and wetland boundaries is an inexact science. Streams are subject to weather patterns, in addition to upstream and downstream activities. Wetlands are by definition, transition areas, and wetland boundaries often change with time. The presence of wetland indicators may also vary depending on the time of year. Additionally, individual professionals may disagree on the precise location of wetland boundaries or the functions and values of a wetland. All stream and wetland boundaries, classifications, and buffer widths should be considered subject to change until reviewed and approved by the appropriate regulatory agencies with jurisdiction. Shockey Planning Group, Inc. recommends obtaining jurisdictional approval before completing final site plans and/or beginning construction activities. This report is not intended for use in the application for State and/or federal permits unless otherwise noted. We are not responsible for the accuracy of information provided by others.

Within the limitations of schedule, budget and scope-of-work, Shockey Planning Group, Inc. warrants that this study was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time of this study. The results and conclusions of this report represent the authors' best professional judgment based upon information provided by the project proponent and information obtained during the course of this study. No other warranty, expressed or implied, is made.

In the event of any changes in the nature, design or locations of the project site features, the conclusion and recommendations in this report would not be valid unless the changes are reviewed and the conclusions of this report are verified in writing with Shockey Planning Group, Inc. Shockey Planning Group, Inc. is not responsible for any claims, damages or liabilities associated with the interpretation of these findings or reuse of the analysis without the express written authorization of Shockey Planning Group, Inc.

Shockey Planning Group, Inc. and project staff are not attorneys, and this report should not be construed to be a legal representation or interpretation of environmental laws, rules or regulations.

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**APPENDIX A
WETLAND DATA SHEETS**

WETLANDS DATA FORM

Sample Point = 1U

(Modified from the 1987 COE Wetlands Delineation Manual)

Field Investigator: B. Pavey M. McDermott Date: 4/5/06
Project Site: Lynnwood High School City: Lynnwood State: WA County: Snohomish
Applicant/Owner: Edmonds School District Plant Community #/Name: _____
Location: _____ Sec: 15 T: 27N R: 4E
Do normal environmental conditions exist at the plant community? Yes _____ No
If No, Explain: Schod Property
Has the vegetation, soils, and /or hydrology been significantly disturbed? Yes No _____
If No, Explain: Road fill

VEGETATION DATA

SOILS DATA

Dominant Plant Species	Indicator Status	% Relative Cover
1. <u>Common horsetail</u>	<u>FAC</u>	<u>30%</u>
2. <u>Giant horsetail</u>	<u>FACW</u>	<u>30%</u>
3. <u>Rubus discolor</u>	<u>FACU-</u>	<u>10%</u>
4. <u>W Red Cedar</u>	<u>FAC</u>	<u>20%</u>
5. <u>Cottonwood</u>	<u>FAC</u>	<u>20%</u>
6. <u>Red Alder</u>	<u>FAC</u>	<u>10%</u>
7. <u>Paper birch</u>	<u>FACU</u>	<u>10%</u>
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

Depth (in)	Color	Texture	Moisture
<u>0-4</u>	<u>10YR 3/2</u>	<u>sandy loam</u>	<u>dry</u>
<u>4-18</u>	<u>10YR 4/3</u>	<u>sandy loam</u>	<u>dry</u>

Percent of dominant species that are OBL, FACW, and/or FAC (excluding FAC-) 71%

Is the hydrophytic vegetation criterion met? Yes _____ No _____
Rationale: more than 50% of dominants are hydrophytic veg.

34

Soils

Series/Phase: Mukilteo Muck Subgroup: _____
Is the soil on the hydric soils list? Yes No _____ Undetermined _____
Histosol _____ Histic epipedon _____ Gley: Color _____ Depth _____ in.
Mottles: Matrix Color _____ Mottle: Color _____ Depth _____ in.
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes _____ No
Rationale: dry soil, high chroma

Hydrology

Recorded Data: _____
Stream, Lake, or Tide Group _____
Aerial Photographs _____
Other _____
No Recorded Data Available _____
Field Observations: _____
Depth of Surface Water 0 in.
Depth to Saturated Soil 18+ in.
Depth to Free Water in Pit 18+ in.

Wetland Hydrology Indicators:
Primary Indicators: _____
Inundated _____
Saturated _____
Water Marks/Drift Lines _____
Fluvial Geomorphic Position _____
Sediment Deposits _____
Drainage Patterns in Wetlands _____
Sulfur Odor _____
Secondary Indicators: _____
Organic staining _____
Water-stained Leaves _____
Local Soil Survey Data _____
FAC-Neutral Test _____
Mottles _____
Gley _____
Low Chroma _____
Rhizospheres _____
Precipitation: _____
Today NONE in.
Yesterday 0.51 in.
w/in Last 5 Days 1.39 in.

Growing season 280 days
Is the wetland hydrology criterion met? Yes _____ No
Rationale: _____

Positive Indicators present

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample point located in a jurisdictional wetland? Yes _____ No
Rationale for Jurisdictional decision: NOT all parameters met

WETLANDS DATA FORM

Sample Point # 2W

(Modified from the 1987 COE Wetlands Delineation Manual)

Field Investigator: B. Davey M. McDonough Date: 4/5/06

Project/Site: Lynnwood High School City: LYNNWOOD State: WA County: Snohomish

Applicant/Owner: Edmonds School District Plant Community #/Name: _____

Location: _____ Sec: 15 T: 27N R: 4E

Do normal environmental conditions exist at the plant community? Yes _____ No _____

If No, Explain: _____

Has the vegetation, soils, and /or hydrology been significantly disturbed? Yes _____ No _____

If No, Explain: _____

VEGETATION DATA

SOILS DATA

Dominant Plant Species	Indicator Status	% Relative Cover
1. <u>Giant horsetail</u>	<u>FACW</u>	<u>50%</u>
2. <u>Rubus discolor</u>	<u>FAC</u>	<u>30%</u>
3. <u>Bittersweet nightshade</u>	<u>FACT</u>	<u>20%</u>
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

Depth (in) Color Texture Moisture
0-18" Gley1 4/5 GY silty sand sat

Percent of dominant species that are OBL, FACW, and/or FAC (excluding FAC-) 100%

Is the hydrophytic vegetation criterion met? Yes No _____

Rationale: 100% hydrophytic vegetation

3

Series/Phase: Mukilteo Muck Subgroup: _____

Is the soil on the hydric soils list? Yes No _____ Undetermined _____

_____ Histosol _____ Histic epipedon Gley: Color 4/5 GY Depth 0 in.

_____ Mottles: Matrix Color _____ Mottle: Color _____ Depth _____ in

Other hydric soil indicators: _____

Is the hydric soil criterion met? Yes No _____

Rationale: Gleyed soil, saturated.

Hydrology

- Recorded Data: _____
- Stream, Lake, or Tide Group _____
- Aerial Photographs _____
- Other _____
- No Recorded Data Available _____

Field Observations:
 Depth of Surface Water 0 in.
 Depth to Saturated Soil 0 in.
 Depth to Free Water in Pit 14 in.

Wetland Hydrology Indicators:

Primary Indicators:

- Inundated
- Saturated
- Water Marks/Drift Lines
- Fluvial Geomorphic Position
- Sediment Deposits
- Drainage Patterns in Wetlands
- Sulfur Odor

Secondary Indicators:

- Organic staining
- Water-stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Mottles
- Gley
- Low Chroma
- Rhizospheres

Precipitation:

Today 0 in.
 Yesterday 0.51 in. ✓
 w/in Last 5 Days 1.39 in. ✓

Growing season 280 days

Is the wetland hydrology criterion met? Yes No _____

Rationale: 3 primary, 4 secondary indicators

Positive Indicators present

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample point located in a jurisdictional wetland? Yes No _____

Rationale for Jurisdictional decision: all 3 parameters met

WETLANDS DATA FORM

Sample Point # 3 W

(Modified from the 1987 COE Wetlands Delineation Manual)

Field Investigator: B. Pavey M. McDonough Date: 4/5/06
Project/Site: Lynnwood High School City: Lynnwood State: WA County: Snohomish
Applicant/Owner: Edmonds School District Plant Community #/Name: _____
Location: _____ Sec: 15 T: 27 N R: 4 E
Do normal environmental conditions exist at the plant community? Yes _____ No
If No, Explain: 1/2 of plot mowed as lawn
Has the vegetation, soils, and /or hydrology been significantly disturbed? Yes No _____
If No, Explain: mowed.

VEGETATION DATA

Dominant Plant Species	Indicator Status	% Relative Cover
1. <u>Paper Birch</u>	<u>FACU</u>	<u>70%</u>
2. <u>R. Alder</u>	<u>FAC</u>	<u>20%</u>
3. <u>Salmonberry</u>	<u>FAC</u>	<u>60%</u>
4. <u>R. discolor</u>	<u>FAC</u>	<u>50%</u>
5. <u>Dandelion</u>	<u>FACU</u>	<u>50%</u>
6. <u>mowed grasses (CAN'T ID)</u>		
7. _____		
8. _____		
9. _____		
10. _____		

SOILS DATA

Depth (in)	Color	Texture	Moisture
<u>0-12</u>	<u>7.5YR 2.5/1</u>	<u>organic</u>	<u>dry</u>
<u>12</u>	<u>10YR 2/1</u>	<u>organic</u>	<u>dry</u>

could not dig deeper than 12" roots? rocks?

Percent of dominant species that are OBL, FACW, and/or FAC (excluding FAC-) +50%

Is the hydrophytic vegetation criterion met? Yes No _____

Rationale: +50% hydrophytic vegetation

Series/Phase: Mukilteo Muck Subgroup: _____

Is the soil on the hydric soils list? Yes No _____ Undetermined _____

_____ Histosol _____ Histic epipedon _____ Gley: Color _____ Depth _____ in.

_____ Mottles: Matrix Color _____ Mottle: Color _____ Depth _____ in

Other hydric soil indicators: _____

Is the hydric soil criterion met? Yes No _____

Rationale: low chroma, hydric soils list.

Hydrology

Recorded Data:	Field Observations:
_____ Stream, Lake, or Tide Group	Depth of Surface Water <u>0</u> in.
_____ Aerial Photographs	Depth to Saturated Soil <u>12+</u> in.
_____ Other	Depth to Free Water in Pit <u>12+</u> in.
_____ No Recorded Data Available	

Wetland Hydrology Indicators:

Primary Indicators:	Secondary Indicators:	Precipitation:
_____ Inundated	_____ Organic staining	Today <u>0</u> in.
_____ Saturated	_____ Water-stained Leaves	Yesterday <u>0.51</u> in.
_____ Water Marks/Drift Lines	<input checked="" type="checkbox"/> Local Soil Survey Data	w/in Last 5 Days <u>1.39</u> in.
_____ Fluvial Geomorphic Position	_____ FAC-Neutral Test	
_____ Sediment Deposits	_____ Mottles	
_____ Drainage Patterns in Wetlands	_____ Gley	
_____ Sulfur Odor	<input checked="" type="checkbox"/> Low Chroma	
	_____ Rhizospheres	

Growing season 280 days

Is the wetland hydrology criterion met? Yes No _____

Rationale: 2 secondary indicators present
Positive Indicators present

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample point located in a jurisdictional wetland? Yes No _____

Rationale for Jurisdictional decision: all 3 parameters met

WETLANDS DATA FORM

Sample Point # 4W

(Modified from the 1987 COE Wetlands Delineation Manual)

Field Investigator: B. Povey M. McDonough Date: 6/5/06
Project/Site: Lynnwood High School City: Lynnwood State: WA County: Snohomish
Applicant/Owner: Edmonds School District Plant Community #/Name: _____
Location: _____ Sec: 15 T: 27 N R: 4 E

Do normal environmental conditions exist at the plant community? Yes _____ No _____

If No, Explain: _____

Has the vegetation, soils, and /or hydrology been significantly disturbed? Yes _____ No _____

If No, Explain: _____

VEGETATION DATA

SOILS DATA

Dominant Plant Species	Indicator	% Relative	Depth (in)	Color	Texture	Moisture
1. <u>G. Horsetail</u>	<u>FACW</u>	<u>60%</u>	<u>0-18</u>	<u>Gley1</u>	<u>2.5/10y</u>	<u>Sat</u>
2. <u>Becken fern</u>	<u>FAC</u>	<u>30%</u>				
3. <u>Rubus discolor</u>	<u>FAC</u>	<u>40%</u>				
4. <u>Rubus spectabilis</u>	<u>FAC</u>	<u>30%</u>				
5. <u>R.C.G.</u>	<u>FACW</u>	<u>20%</u>				
6. <u>Rubus R. Alder</u>	<u>FAC</u>	<u>70%</u>				
7. _____	_____	_____				
8. _____	_____	_____				
9. _____	_____	_____				
10. _____	_____	_____				

Percent of dominant species that are OBL, FACW, and/or FAC (excluding FAC-) 100%

Is the hydrophytic vegetation criterion met? Yes No _____

Rationale: 100% hydrophytic vegetation

Series/Phase: Alderwood-Urban 8-15% Subgroup: _____

Is the soil on the hydric soils list? Yes _____ No Undetermined _____

_____ Histosol _____ Histic epipedon Gley: Color Gley 1 Depth 0 in.

_____ Mottles: Matrix Color _____ Mottle: Color _____ Depth _____ in.

Other hydric soil indicators: _____

Is the hydric soil criterion met? Yes No _____

Rationale: Saturated, gleyed soil

Hydrology

- Recorded Data:
- Stream, Lake, or Tide Group _____
- Aerial Photographs _____
- Other _____
- No Recorded Data Available _____

Field Observations:

Depth of Surface Water 0 in.

Depth to Saturated Soil 0 in.

Depth to Free Water in Pit 4 in.

Wetland Hydrology Indicators:

Primary Indicators:

- Inundated
- Saturated
- Water Marks/Drift Lines _____
- Fluvial Geomorphic Position _____
- Sediment Deposits _____
- Drainage Patterns in Wetlands _____
- Sulfur Odor

Secondary Indicators:

- Organic staining
- Water-stained Leaves _____
- Local Soil Survey Data _____
- FAC-Neutral Test _____
- Mottles _____
- Gley
- Low Chroma
- Rhizospheres _____

Precipitation:

Today 0 in.

Yesterday 0.51 in.

w/in Last 5 Days 1.39 in.

Growing season 280 days

Is the wetland hydrology criterion met? Yes No _____

Rationale: 2 primary, 3 secondary indicators

Positive Indicators present

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample point located in a jurisdictional wetland? Yes No _____

Rationale for Jurisdictional decision: all 3 parameters met

**APPENDIX B
WETLAND RATING FORMS FOR
WESTERN WASHINGTON**

Wetland name or number A

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

Name of wetland (if known): Wetland A (Lynnwood H.S.) ^{FORM UPDATED 5/13/11} Date of site visit: 6/5/06

Rated by B. Pavey Trained by Ecology? Yes No Date of training 2/06

SEC: 15 TOWNSHIP: 27N RANGE: 4E Is S/T/R in Appendix D? Yes No

Map of wetland unit: Figure Estimated size 17,460

SUMMARY OF RATING

Category based on **FUNCTIONS** provided by wetland

I II III IV

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

Score for Water Quality Functions	<u>26</u>
Score for Hydrologic Functions	<u>10</u>
Score for Habitat Functions	<u>18</u>
TOTAL score for Functions	<u>54</u>

Category based on **SPECIAL CHARACTERISTICS** of wetland

I II Does not Apply

Final Category (choose the "highest" category from above)

II

Summary of basic information about the wetland unit

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

Wetland name or number A

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

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

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

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

Classification of Wetland Units in Western Washington

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

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
 NO – go to 2 YES – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES – **Freshwater Tidal Fringe** NO – **Saltwater Tidal Fringe (Estuarine)**

If your wetland can be classified as a *Freshwater Tidal Fringe* use the forms for **Riverine wetlands**. If it is *Saltwater Tidal Fringe* it is rated as an **Estuarine wetland**. Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term “Estuarine” wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is 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 both** of the following criteria?
___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) 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 <3ft diameter and less than 1 foot deep).*
 NO – go to 5 YES – The wetland class is **Slope**

Wetland name or number A

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.

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

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

If you are unable still to determine which of the above criteria apply to your wetland, or 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

D Depressional and Flats Wetlands		Points (only 1 score per box)
WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	<p>D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) 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") Provide photo or drawing</p>	Figure <u>2</u>
D	<p>S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>) YES points = 4 NO points = 0</p>	4
D	<p>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0 Map of Cowardin vegetation classes</p>	Figure <u>5</u>
D	<p>D1.4 Characteristics of seasonal ponding or inundation. <i>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.</i> Area seasonally ponded is > 1/2 total area of wetland points = 4 Area seasonally ponded is > 1/4 total area of wetland points = 2 Area seasonally ponded is < 1/4 total area of wetland points = 0 Map of Hydroperiods</p>	Figure <u>2</u>
D	Total for D 1 <i>Add the points in the boxes above</i>	13
D	<p>D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. <i>Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Grazing in the wetland or within 150 ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input type="checkbox"/> Tilled fields or orchards within 150 ft of wetland <input checked="" type="checkbox"/> A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging <input checked="" type="checkbox"/> Residential, urban areas, golf courses are within 150 ft of wetland <input checked="" type="checkbox"/> Wetland is fed by groundwater high in phosphorus or nitrogen Other _____ <p>YES multiplier is <u>2</u> NO multiplier is 1</p>	(see p. 44) multiplier <u>2</u>
D	TOTAL - Water Quality Functions Multiply the score from D1 by D2 <i>Add score to table on p. 1</i>	24

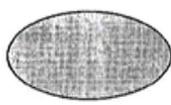
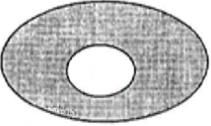
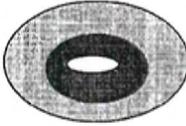
Wetland name or number A

D Depressional and Flats Wetlands		Points (only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation		
D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		(see p.46)
D	<p>D 3.1 Characteristics of surface water flows out of the wetland unit</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 4</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>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</p> <p>(If ditch is not permanently flowing treat unit as "intermittently flowing")</p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</p>	2
D	<p>D 3.2 Depth of storage during wet periods</p> <p>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).</p> <p>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</p> <p>The wetland is a "headwater" wetland" points = 5</p> <p>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5</p> <p>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3</p> <p>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1</p> <p>Marks of ponding less than 0.5 ft points = 0</p>	3
D	<p>D 3.3 Contribution of wetland unit to storage in the watershed</p> <p>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</p> <p>The area of the basin is less than 10 times the area of unit points = 5</p> <p>The area of the basin is 10 to 100 times the area of the unit points = 3</p> <p>The area of the basin is more than 100 times the area of the unit points = 0</p> <p>Entire unit is in the FLATS class points = 5</p>	0
D	Total for D 3	Add the points in the boxes above 5
D	<p>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.</p> <p>Note which of the following indicators of opportunity apply.</p> <ul style="list-style-type: none"> — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems <p>* Other <u>detention pond to NE</u></p> <p>YES multiplier is 2 NO multiplier is 1</p>	(see p. 49) multiplier <u>2</u>
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4	Add score to table on p. 1 10

Wetland name or number A

<i>These questions apply to wetlands of all HGM classes.</i>		Points <small>(only 1 score per box)</small>												
HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat														
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?														
<p>H 1.1 <u>Vegetation structure</u> (see p. 72) Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed <input checked="" type="checkbox"/> Emergent plants <input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover) <input checked="" type="checkbox"/> Forested (areas where trees have >30% cover)</p> <p>If the unit has a forested class check if: <input checked="" type="checkbox"/> The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon</p> <p>Add the number of vegetation structures that qualify. If you have:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">4 structures or more</td> <td style="width: 50%; border: none;">points = 4</td> </tr> <tr> <td style="border: none;">3 structures</td> <td style="border: none;">points = 2</td> </tr> <tr> <td style="border: none;">2 structures</td> <td style="border: none;">points = 1</td> </tr> <tr> <td style="border: none;">1 structure</td> <td style="border: none;">points = 0</td> </tr> </table> <p><u>Map of Cowardin vegetation classes:</u></p>		4 structures or more	points = 4	3 structures	points = 2	2 structures	points = 1	1 structure	points = 0	<p>Figure</p> <p style="font-size: 2em;">4</p>				
4 structures or more	points = 4													
3 structures	points = 2													
2 structures	points = 1													
1 structure	points = 0													
<p>H 1.2. <u>Hydroperiods</u> (see p. 73) Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> Permanently flooded or inundated</td> <td style="width: 25%; border: none;">4 or more types present</td> <td style="width: 25%; border: none;">points = 3</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td style="border: none;">3 types present</td> <td style="border: none;">points = 2</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Occasionally flooded or inundated</td> <td style="border: none;">2 types present</td> <td style="border: none;">point = 1</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Saturated only</td> <td style="border: none;">1 type present</td> <td style="border: none;">points = 0</td> </tr> </table> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland <input checked="" type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland</p> <p><input type="checkbox"/> Lake-fringe wetland = 2 points <input type="checkbox"/> Freshwater tidal wetland = 2 points</p> <p style="text-align: right;"><u>Map of hydroperiods</u></p>		<input checked="" type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2	<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1	<input type="checkbox"/> Saturated only	1 type present	points = 0	<p>Figure</p> <p style="font-size: 2em;">2</p>
<input checked="" type="checkbox"/> Permanently flooded or inundated	4 or more types present	points = 3												
<input checked="" type="checkbox"/> Seasonally flooded or inundated	3 types present	points = 2												
<input type="checkbox"/> Occasionally flooded or inundated	2 types present	point = 1												
<input type="checkbox"/> Saturated only	1 type present	points = 0												
<p>H 1.3. <u>Richness of Plant Species</u> (see p. 75) Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">> 19 species</td> <td style="width: 50%; border: none;">points = 2</td> </tr> <tr> <td style="border: none;">5 - 19 species</td> <td style="border: none;">points = 1</td> </tr> <tr> <td style="border: none;">< 5 species</td> <td style="border: none;">points = 0</td> </tr> </table> <p>List species below if you want to:</p>		> 19 species	points = 2	5 - 19 species	points = 1	< 5 species	points = 0	<p style="font-size: 2em;">1</p>						
> 19 species	points = 2													
5 - 19 species	points = 1													
< 5 species	points = 0													

Total for page 7

<p>H 1.4. Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  None = 0 points </div> <div style="text-align: center;">  Low = 1 point </div> <div style="text-align: center;">  Moderate = 2 points </div> <div style="text-align: center;">  High = 3 points </div> </div> <p style="text-align: center;">NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p>Figure</p> <p style="text-align: center; font-size: 2em;">3</p>
<p>H 1.5. Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) <input checked="" type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input checked="" type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants <p style="text-align: center;">NOTE: The 20% stated in early printings of the manual on page 78 is an error.</p>	<p style="text-align: center; font-size: 2em;">3</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	<p>12</p>

Comments

Wetland name or number A

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	Figure
<p>H 2.1 <u>Buffers</u> (see p. 80) Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</p> <ul style="list-style-type: none">— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5— 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. Points = 4— 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . Points = 3— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none">— No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2— No paved areas or buildings within 50m of wetland for >50% circumference. Points = 2— Light to moderate grazing, or lawns are OK. Points = 2— <input checked="" type="checkbox"/> Heavy grazing in buffer. Points = 1— Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 0.— Buffer does not meet any of the criteria above. Points = 1 <p style="text-align: center;"><small>Aerial photo showing buffers</small></p>	1
<p>H 2.2 <u>Corridors and Connections</u> (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>). YES = 4 points (go to H 2.3) <input checked="" type="radio"/> NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) <input checked="" type="radio"/> NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? <input checked="" type="radio"/> YES = 1 point NO = 0 points</p>	1

Total for page 2

<p>H 2.3 <u>Near or adjacent to other priority habitats listed by WDFW (see p. 82)</u> Which of the following priority habitats are within 330ft (100m) of the wetland unit? <i>NOTE: the connections do not have to be relatively undisturbed.</i> <i>These are DFW definitions. Check with your local DFW biologist if there are any questions.</i></p> <p><input type="checkbox"/> Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.</p> <p><input type="checkbox"/> Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).</p> <p><input type="checkbox"/> Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.</p> <p><input type="checkbox"/> Old-growth forests: (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age.</p> <p><input type="checkbox"/> Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest.</p> <p><input type="checkbox"/> Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.</p> <p><input type="checkbox"/> Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.</p> <p><input type="checkbox"/> Caves: A naturally occurring cavity, recess, void, or system of interconnected passages</p> <p><input type="checkbox"/> Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.</p> <p><input type="checkbox"/> Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i>, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.</p> <p><input type="checkbox"/> Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.</p> <p><input type="checkbox"/> Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).</p> <p style="margin-left: 40px;">If wetland has 3 or more priority habitats = 4 points If wetland has 2 priority habitats = 3 points If wetland has 1 priority habitat = 1 point No habitats = 0 points</p> <p><i>Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)</i></p>	<p>0</p>
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Wetland name or number _____

<p>H 2.4 <u>Wetland Landscape</u> (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile . points = 5</p> <p>→ There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p>There is at least 1 wetland within ½ mile. points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	<p>3</p>
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	<p>5</p>
<p>TOTAL for H 1 from page 14</p>	<p>11</p>
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	<p>16.</p>

Wetland name or number _____

<p>SC 2.0 Natural Heritage Wetlands (see p. 87) Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.</p> <p>SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? (this question is used to screen out most sites before you need to contact WNHP/DNR) S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___</p> <p>YES ___ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO <input checked="" type="checkbox"/></p> <p>SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO ___ not a Heritage Wetland</p>	<p>Cat. I</p>
<p>SC 3.0 Bogs (see p. 87) Does the wetland unit (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key below to identify if the wetland is a bog. If you answer yes you will still need to rate the wetland based on its functions.</p> <p>1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2</p> <p>2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 No - Is not a bog for purpose of rating</p> <p>3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the “bog” species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Is a bog for purpose of rating No - go to Q. 4</p> <p>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16” deep. If the pH is less than 5.0 and the “bog” plant species in Table 3 are present, the wetland is a bog.</p> <p>1. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann’s spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover (> 30% coverage of the total shrub/herbaceous cover)?</p> <p>2. YES = Category I No <input checked="" type="checkbox"/> Is not a bog for purpose of rating</p>	<p>Cat. I</p>