From: Di Mikesell di.mikesell@shorelineschools.org &

Subject: Public Records Request Date: September 12, 2019 at 8:19 AM

To: kryptographik@gmail.com

DM

Di Mikesell
Executive Assistant to Deputy Superintendent
Shoreline School District
18560-1st Ave. NE
Shoreline, WA 98155
di.mikesell@shorelineschools.org

ph: 206-393-4366 fx: 206-393-4204



Board of Directors
Heather Fralick
Mike Jacobs
Richard Nicholson
Richard Potter
David Wilson
Rebecca Miner
Superintendent
Secretary to the Board

September 12, 2019

Noah Tippett 19815 55th Ave. NE Lake Forest Park, WA 98155

Sent via email to kryptographik@gmail.com

Dear Mr. Tippett,

This is Shoreline School District's final response to your public records request received August 9, 2019, requesting a copy of the following information:

"Cedarbrook Elementary - PBS Engineering Critical Areas Assessment report."

Since no paper copies were provided in response to your request, there is no charge for copies associated with this response.

If you have any questions, please call me or my assistant, Di Mikesell, at 206-393-4366.

Sincerely,

Marla S. Miller

Deputy Superintendent

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Electronic Enc: Documents found to be responsive to public records request

Administrative Offices, 18560 1st Ave NE, Shoreline, WA 98155-2148, Office (206) 393-4366, Fax (206) 393-4204

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Sincerely,

Marla S. Miller

Deputy Superintendent

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Date: August 27, 2019 at 5:11 PM To: Mike.Bagley@pbsusa.com





Cedarbrook Critical...M).pdf

Marla

Marla S. Miller **Deputy Superintendent** Shoreline School District 206.393.4514 206.393.4204 (fax) marla.miller@shorelineschools.org



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Superintendent
Secretary to the Board

August 27, 2019

Mike Bagley, Project Geologist PBS Seattle 2517 Eastlake Avenue East, Suite 100 Seattle, WA 98102

Sent via email to Mike.Bagley@pbsusa.com

Dear Mike,

Shoreline School District has received a public records request for a copy of the Critical Areas Report for the Cedarbrook School Demolition Site produced for the District by PBS. This letter is a courtesy notice for your information only; you do not need to respond or provide any documents in response to this request. If any documents are required to be released under the law, the District will make every effort to redact all information that is exempt from disclosure prior to release.

Please note that the Public Records Act (RCW 42.56.270) provides an opportunity for a business to seek an injunction to protect certain business information. We have estimated that our response to this request will be released by September 11, 2019. At that time, we intend to transmit all requested information that is not exempt under the Public Records Act, unless you obtain a court injunction that prevents release of the document(s).

If you have any questions, please call me at 206.393.4514.

Sincerely,

Marla S. Miller

Deputy Superintendent

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Noah Tippett		Compa	ny/Organization		
Email* kryptographik@gmai	l.com	Addres 1981	s line 1* 5 55 th Ave N	3	
City* Lake Forest Park	State* WA	Zip code*	Phone* (206)	786-2629	
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Required Fields

From: Di Mikesell di.mikesell@shorelineschools.org &

Subject: Public Records Request
Date: August 14, 2019 at 11:56 AM
To: kryptographik@gmail.com

DIM

Di Mikesell Executive Assistant to Deputy Superintendent Shoreline School District 18560-1st Ave. NE Shoreline, WA 98155 di.mikesell@shorelineschools.org

ph: 206-393-4366 fx: 206-393-4204



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David Wilson
Rebecca Miner
Superintendent
Secretary to the Board

August 14, 2019

Noah Tippett 19815 55th Ave. NE Lake Forest Park, WA 98155

Sent via email to kryptographik@gmail.com

Dear Mr. Tippett,

This is to acknowledge receipt of your public records request on August 9, 2019, requesting a copy of the following information:

"Cedarbrook Elementary - PBS Engineering Critical Areas Assessment report."

The District currently estimates the documents found to be responsive to your request will be available to you within 20 business days from the date of this letter. The additional time required to respond to your request is based upon the need to locate and assemble the information requested, to notify third persons or agencies affected by the request, if any, or to determine whether any of the information requested is exempt from disclosure.

A copy of your full request is enclosed with this response. If you have any questions, please call me or my assistant, Di Mikesell, at 206-393-4366.

Sincerely,

Marla S. Miller

Deputy Superintendent

Musical Jacker

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Records Delivery Options

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Select one option to receive the records*:

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Requester Information (we will honor anonymous request) Name' Company/Crganization Noah Tippett Email' Address line 1* kryptographik@gmail.com 19815 55th Ave NE City* State' Zip code* Lake Forest Park (206) 786-2629 WA 98155 Description of the document(s) you are requesting: Time period of the information you are seeking. Start date: June 1, 2016 End Date December 31, 2017 Please provide enough information that we may identify and locate the records you seek. Attach additional page if necessary. Sometime in 2017 you demolished the buildings on the lot of the old Cedarbrook elementary school (2000 NE Perkins Way). Before doing this you hired PBS Engineering to perform a Critical Areas assessment in which several wetland areas were delineated. I am looking for a copy of this report. When I look at wetland data using the Shoreline iMap viewer I find this report is referred to as "PBS Cedarbrook Rpt 2017_03_29" with an "InventoryDate" of 8/31/2016, 5:00 PM. Thank you. If the request is for a list of individuals, I certify, by checking this box, that the information will not be used for constructed purposes. The district is not authorized to provide public records consisting of a lat of individuals for commercial use (RCW42.56.070(9)).

Printed copies will be 15 cents per page. Mailing cost will be additional (unless copies are picked-



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Secretary to the Board

August 14, 2019

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A copy of your full request is enclosed with this response. If you have any questions, please call me or my assistant, Di Mikesell, at 206-393-4366.

Sincerely,

Marla S. Miller

Deputy Superintendent

Mul A Talled

Electronic Enc: Request for Public Records

From: Kryptographik kryptographik@gmail.com & Subject: Public Records request regarding Cedarbrook lot

Date: August 9, 2019 at 4:09 PM

To: public.records@shorelineschools.org

Hello,

Attached is my completed Public Record Requests form.

Thank you for you time, _Noah Tippett



Please Email This Form To: public.records@shorelineschoo

PUBLIC RECORDS REQUEST

It is the policy of Shoreline School District to make available for inspection and/or copying all district records falling within the classification of public records as defined by laws, except those which are exempted from such disclosure subject to the procedures, limitations, and qualifications set forth in the laws and/or school district regulations.

Name' Noah Tippett		Compa	ny/Organizatio	п	
Email' kryptographik@gmai		Address line 1' 19815 55 th Ave NE			
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Critical Areas ReportCedarbrook School Demolition Site
Shoreline, Washington

Prepared for: Shoreline School District

> Revised March 2017 Project No. 40958.011

Prepared for Shoreline Public Shools Shoreline, Washington



Prepared by:

Katharine Lee, M.S. Ecologist, Professional Wetland Scientist &

> Kate Machata, M.S. Professional Wetland Scientist

PBS Engineering and Environmental 2517 Eastlake Ave East, Suite 100 Seattle, WA 98102 (206) 233-9639

PBS Project No: 40958.011

Revised March, 2017

This report is for the exclusive use of the client for planned development of the property and is not to be relied upon by other parties. It is not to be photographed, photocopied, or similarly reproduced in total or in part without the expressed written consent of the client and PBS.

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SUPPORTING DATA

Appendix A – Figures

Figure 1	Vicinity Map
Figure 2	City of Shoreline Critical Areas Map
Figure 3	Aerial Photograph with 2' Contours
Figure 4	Water/Wetlands Delineation Map
Figure 5	Critical Area Impacts
Figure 6	Site Restoration Plan

Appendix B - Site Photographs

Appendix C – Data Sheets and Wetland Rating Forms

Appendix D – Hydrophytic Vegetation Indicator Categories

Appendix E – Geotechnical Review Letter



Critical Areas Summary

Project Name:

Cedarbrook School Demolition

Location:

2000 NE Perkins Way in Shoreline, WA (King County parcel # 042604-9011)

Legal Description:

SW 1/4 of Section 4, T26N, R04E

Jurisdiction:

City of Shoreline, King County, Washington

Zoning:

Zoned as R-6, residential-6 units per acre.

Project Staff:

Katharine Lee (PWS) and Kate Machata (PWS)

Field Dates:

September 1 and 6, 2016

Study Area:

The study area encompasses 1 tax lot and approximately 10.5 acres.

Owner:

Shoreline School District

Elevation:

225-275 feet above sea level in study area.

Hydrology:

WRIA 8 - Cedar/Sammamish River, McAleer creek watershed. The primary hydrologic input is currently from direct precipitation and surface and shallow

subsurface runoff.

Soils:

NRCS soil survey data not available in City of Shoreline

Geologic Hazard Areas:

Rockery is identified as a steep slope. No other geologic hazard areas

identified on parcel

Floodplain:

The study area is located outside the FEMA 100-year floodplain

Streams:

The study identified 6 streams on or immediately adjacent to the property,

which include Whisper Creek and tributaries to Whisper Creek.

Wetlands:

The study identified six slope wetlands and two riverine wetlands.

Categories and Buffers:

One Category II wetland, six Category III wetlands and one Category IV wetland. Three wetlands have 165 foot standard buffers, three have 105 foot buffers, one has a 75 foot buffer and one has a 40 foot buffer. Buffers are increased by 33 percent if best management practices are not followed.

Previous Delineations:

Watershed Company. 2007. Off-site Wetland and Stream Delineation Study at NE Perkins Way Parcels. Letter Report prepared for City of Shoreline Planning

Department



1.0 INTRODUCTION

The Shoreline School District # 412 operated the Cedarbrook Elementary School from 1954 to 1971. After closing the elementary school, the district used the site for a number of years for special programs and most recently rented the buildings to a private school. For the last several years the buildings have been vacant and boarded up. The district wishes to demolish the buildings before they become a public nuisance or hazard and to prepare the site for eventual reuse, sale or transfer. This report has been prepared to address City of Shoreline identified critical areas at the project site in support of the permits required to remove the buildings and infrastructure and stabilize the site.

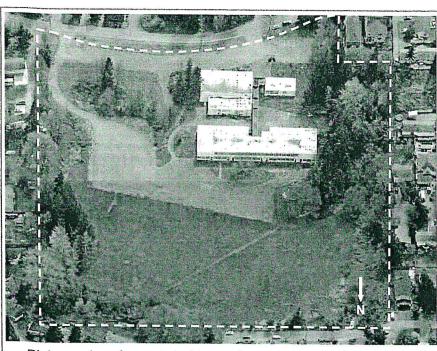
2.0 PROPERTY DESCRIPTION

2.1 Location

The project is located at 2000 NE Perkins Way in Shoreline, WA (King County parcel # 042604-9011) (Figure 1). The project is occurring in the SW ¼ of Section 4, T26N, R04E.

2.2 Site Description

The 10.5 acre project site is the old Cedarbrook Elementary school located in the northwest portion of the City of Shoreline, WA. The school consists of three buildings totaling 34,808 square feet. Parking areas and paved playgrounds cover approximately 2 acres. There is a large grass playing field in the north portion of the property. Wooded areas are present along the north, east and west sides of the property. The school is situated on a northeast facing hillslope and the buildings are built into the hill on two levels. The property borders NE Perkins Way to the south, NE 190th Street to the north, and residential properties to the east and west.



Birds-eye view of property looking south



Elevations on the property range from 275 feet in the southwest corner to 225 in the northeast corner with topography generally sloping from southwest to northeast. The site was graded when the school was constructed such that there is a relatively flat parking area along the south edge and a relatively flat play field to the north. Some short steep slopes and stairs are present in the middle portion of the site.

2.3 Land Use

Land use in the vicinity of the Cedarbrook Elementary School site is mostly residential. The site and surrounding area within the City of Shoreline is zoned as R-6, residential-6 units per acre. Zoning in Lake Forest Park to the east is RS-15,000, single family residential with a minimum lot size of 15,000 square feet. The Shoreline Comprehensive Plan designation for the City of Shoreline is low-density residential. The public has been using the open space surrounding the school as a neighborhood park.

2.4 Hydrology

The project site is in WRIA 8, Cedar/Sammamish River. The site is in the headwaters of Whisper Creek, a tributary to McAleer Creek, which flows into Lake Washington near the north end of the lake. An unnamed stream enters the property in the southwest corner and flows along the west edge past the school buildings and then is piped diagonally across the playfield to connect with Whisper Creek, which flows west to east across the northeast corner of the site. Several small stream segments feed into this stream from the west. Drainage that is picked up in catchbasins from the parking areas on the east side of the site also discharges to Whisper Creek in the northeast corner. Seeps are present in several places on the hillside. A swale along NE Perkins Way drains to the east and discharges to another tributary to Whisper Creek located to the east of the southeast corner of the property.

2.5 Soils

As the site is located in urban Shoreline, NRCS has not mapped soils at this location. Soils north of the project area include Alderwood-urban land complex, Alderwood gravelly sandy loam and Indianola loamy sand. Soils over much of the site have been disturbed through grading.

2.6 Plant Communities

Vegetation around the buildings includes lawns and a few mostly ornamental trees and shrubs. There is a large cedar tree just east of the buildings. The north half of the site has a large grass playfield. Along the east, north and most of the west edges of the property there is a narrow fringe of native forest vegetation with a relatively mature canopy of Douglas fir, western red cedar, big-leaf maple, red alder, black cottonwood, and cherry. Native understory plants include swordfern, salmonberry, red elderberry, creeping blackberry, ladyfern, scouring rush, etc. Non-native and invasive species are prevalent. Himalayan blackberry forms dense thickets in a number of places. Other invasive species include English ivy, holly, cherry laurel, reed canary grass, deadly nightshade and field bindweed.

2.7 Stormwater

Approximately 1/3 of the site is currently impervious surface. Water is collected in a series of catch basins and discharged via pipe directly to Whisper Creek. There is currently no treatment of stormwater.



3.0 PROJECT DESCRIPTION

The Shoreline School District wishes to demolish the aging buildings before they become a safety hazard. Because several of the buildings are built into the hillslope, some grading will be necessary to ensure slope stability after the buildings are removed. All demolition debris will be removed from the site and the disturbed areas will be covered with topsoil or mulch and seeded to grasses.

4.0 IDENTIFICATION AND CLASSIFICATION OF CRITICAL AREAS AND BUFFERS

4.1 Geologic Hazard Areas

Liquefaction susceptibility is rated as low to very low on the WA DNR geologic maps and the seismic site class is ranked as moderate (C-D). Some short steep slopes are present on the school property including a rockery that was constructed east of the buildings where the slope was cut back to allow for a flat parking area, a steep slope in the southwest corner across the stream, and some areas around the buildings where the ground steps down from the upper parking area to the field. Areas over 40% slope are considered potential landslide areas under Section 20.80.210 of the Shoreline Municipal Code, particularly if they are underlain by glacial till. The project will not impact the rockery to the east or the steep slope in the southwest corner. Grading will result in a reduction in slope near the buildings with a resulting maximum slope of 3 to 1.

A geotechnical engineer at PBS reviewed the site and proposed plans and determined that there were no geologic hazards at the site and that the grading would not result in any increase in risk. The geotechnical analysis letter is attached as Appendix E.

4.2 Fish and Wildlife Habitat Conservation Areas

4.2.1 Streams

Whisper Creek, a tributary to McAleer Creek flows onto the property from the north near the intersection of NE 190th St and 20th Ave NE. It flows along the north boundary before exiting near the northeast corner of the property. An unnamed stream flows onto the property in the southwest corner through a culvert under NE Perkins Way. That creek flows north along the west portion of the property, and then enters an 85 foot long culvert near the school buildings. It daylights just west of the main building and continues north to the edge of the playfield where it enters a 300 foot long culvert that carries it diagonally across the playfield to join Whisper Creek. Several very small creeks drain from the west into this unnamed creek, as well as several small seeps. There is another small tributary to Whisper Creek just off property near the southeast corner that flows north through a culvert under NE Perkins Way and then turns east.

Ordinary high water was delineated on Whisper Creek and the unnamed tributary to Whisper Creek on the west edge of the property. The seep features and smaller stream segments were not mapped separately as streams, but were included within the wetlands described in the next section.

McAleer Creek flows into Lake Washington near the town of Lake Forest Park at the north end of the lake. It is shown on WDFW's SalmonScape website as having documented fall Chinook and winter steelhead salmon use up to within 450 feet of the project site. Fall Chinook, winter steelhead, coho and sockeye salmon all spawn in the



lower portion of the creek. The Washington State stream type mapping shows McAleer creek as a Type F stream, but does not rate either Whisper Creek or the smaller tributaries. The City of Shoreline maps Whisper Creek and the unnamed tributary along the west edge of the property as Type III non-fish perennial (Np) streams. However Whisper Creek up to the property has no known complete barriers to fish passage and fish may be present. The small stream just east of the southeast corner of the property is not typed. The McAleer Creek Basin Plan groups Whisper Creek and its tributaries and collectively assigns a DNR Type F (fish) and City Type II designation which they say could be downgraded to a Type III if lack of salmonid use could be definitively documented or a Type IV if there were no fish and the stream was less than 2 feet in width.

The unnamed tributary was realigned and straightened as part of construction of the Cedarbrook School grounds in the 1950s. Thus, the stream is conveyed northward through a series of piped sections which serve as barriers to fish passage. Several reaches of the non-piped sections of this small tributary have fringing wetland. Other reaches are deeply incised with steep banks and no fringing wetland. The tributary flows through approximate 400 feet of pipe before outflowing to Whisper Creek near the north edge of the parcel.

4.2.2 Stream Buffers

Buffers for Whisper Creek, a Type F – non anadramous stream are 75 feet measured horizontally from OHW. The tributary stream along the west edge of the property is a Type Np – non fish, perennial stream. Buffers are 65 feet from OHW. The project area does not include either Whisper Creek or its buffers. Buffers for the tributary stream extend into the project area and include portions of the buildings and paved areas to be demolished.

4.2.3 Habitat Conditions

Habitat conditions of the tributary stream and its buffer in the project area are generally poor. Half of the total length of the stream on the property is culverted. The channel was moved and straightened when the school was constructed. While there is a narrow band of native trees that is 15 to 25 feet wide along most of the above ground channel areas near the buildings, the balance of the buffer is currently paved, grass lawn or buildings. Disturbance of the banks is high throughout the project area due to a number of informal paths, which has led to bank erosion. Invasive species have high cover throughout the buffer and include Himalayan blackberry, English ivy, holly and cherry laurel. Where the stream enters the property at the south end of the project area, the stream is bordered by dense blackberries.

4.3 Wetlands

While no wetlands are identified by The National Wetland Inventory (NWI) on the property, the City of Shoreline Critical Areas mapping identifies several wetlands. A wetland delineation was conducted in September, 2016 to verify the boundaries of all on-site wetlands.

4.3.1 Rationale for Use of the Routine Delineation Methods

The project site occurs in the region defined in the Western Mountains, Valleys and Coast Regional Supplement (WMVC Supplement). Based upon guidance provided in



the Corps of Engineers 1987 Wetland Delineation Manual (1987 Manual) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: WMVC (Version 2.0), it is the best professional judgment of the PBS delineation team that the current wetlands in the study area exist under "normal circumstances" as defined in the 1987 Manual and supplement. Therefore, we delineated waters and wetlands on the project using methods recommended in the manual for routine situations.

4.3.2 Office Methods

Office preparation for the delineation consisted of reviewing a variety of on-line sources and information provided by the client. The review included but was not limited to NWI mapping, soil mapping, topography, regional plant communities, priority habitats, water quality assessments and local regulations.

4.3.3 Field Methods

A site reconnaissance field visit occurred on September 1 and 6 by Professional Wetland Scientists Katharine Lee, and Kate Knox Machata. Wetlands were delineated using the three parameter approach as required in the WMVC Supplement. Wetland boundaries were flagged using wetland delineation pin flags. Plot locations were also marked with pin flags. A professional land survey was completed by HDJ, a division of PBS, to accurately locate wetland boundary and data plots.

4.3.3.1 Hydrology

The presence of wetland hydrology was determined by evaluating a variety of direct and indirect indicators. In addition to hydrologic data and records pertaining directly to the study area, hydrologic indicators can be used to infer satisfaction of the wetland hydrology criterion. Field indicators of wetland hydrology listed in the Regional Supplement include, but are not limited to, visual observation of inundation or saturation, sediment deposition, hydric soil characteristics, watermarks, drift lines, oxidation around living roots and rhizomes, salt or biotic crusts, and water-stained leaves. To satisfy the hydrology criterion for wetlands, soils need to be inundated, saturated to the surface, or have a water table 12 inches or less below the surface for at least 14 consecutive days during the growing season in five years out of ten. The delineation was conducted during the growing season, but past the optimum time for assessing wetland hydrology.

4.3.3.2 Soils

The presence of hydric soils was determined consistent with the WVMC Regional Supplement and current regulatory guidance. The supplement includes a number of hydric soil indicators specific to this region. Soils were evaluated based on these indicators.

4.3.3.3 Vegetation

The existing vegetation was characterized for wetlands and adjacent uplands. Species identifications and taxonomic nomenclature followed the USDA Plants Database. Each species' indicator status was assigned using the WVMC 2016 Regional Wetland Plant List (Lichvar et al. 2016). A species indicator status refers to the relative frequency with which the species occurs in jurisdictional wetlands (Appendix D).



An area satisfies the hydrophytic vegetation criteria when, under normal circumstances, more than 50 percent of the dominant species from each stratum are obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC) species.

4.3.4 Climate

The City of Shoreline has a predominantly temperate marine climate typical of much of the Puget Sound area. Summers are warm and relatively dry, and winters tend to be mild, but rather wet. Mean high temperatures for Shoreline range from 45°F in January to 74°F in August. Mean low temperatures range from 34°F in January to 54°F in August (NRCS 2013). Precipitation is generally light in late spring and summer. Rainfall averages almost 36 inches per year (Seattle Sand Point Station, WA290), most of which typically falls as rain between November and April. Snow is rare and does not remain long on the ground.

Precipitation levels are considered normal when the probability of that rainfall amount for a given month is greater than or equal to 30% either side of the mean, as displayed in the table below (Table 1). Rainfall accumulation as estimated at the Seattle weather station in the 3 months prior to the September 1, 2016 field delineation effort (June through August 2016) was 2.1 inches, which is 1.52 inches below average, but within the normal range (Table 1). A total of only 0.01 inches of rain was recorded in the 2 weeks prior to the September 1, 2016 field effort. Precipitation recorded between September 1 and September 6 was 0.23 inches.

Table 1. Monthly precipitation in inches for Seattle, WA and "normal" ranges and averages for Seattle, WA. From: http://agacis.rcc-acis.org/53033/mtot/results.

	Seattle*,	Above or			
Month	WA	30% chan	ce will have	Average	Below
	2015/2016	Less than	More than	Average	Normal
October 2015	3.83	1.85	4.04	3.32	Within
November 2015	7.16	3.59	5.80	4.92	Above
December 2015	9.41	3.86	6.45	5.45	Above
January 2016	7.19	3.07	5.36	4.49	Above
February 2016	4.07	2.43	4.40	3.67	Within
March 2016	5.22	2.95	4.45	3.84	Above
April 2016	1.56	2.04	3.36	2.84	Below
May 2016	1.63	1.49	2.49	2.10	Within
June 2016	1.52	0.99	2.04	1.68	Within
July 2016	0.53	0.49	1.19	0.97	Within
August 2016	0.05	0.43	1.18	0.97	Below
September 2016	1.53	0.59	2.05	1.71	Within
Year Total	43.7	32.57 38.86		35.96	Above
3 Month Prior	2.11	2.97	5.72	4.75	Below

^{*} Monthly totals from: http://agacis.rcc-acis.org/53033/mtot/results. Sand Point WSFO Station #94290

4.3.5 Delineation Results

4.3.5.1 National and Local Wetland Inventories

The National Wetland Inventory (NWI) does not map any wetlands on the property. The City of Shoreline GIS maps show six wetlands distributed across the site (Figure 2). Several mapped tributaries are shown to join together and flow to Whisper Creek in the northeast corner of the site. These mapped features are similar to what was observed during the 2016 site visit.

4.3.5.2 Previous Wetland Delineations and Assessments

A prior delineation was completed on a portion of the property as part of an off-site wetland and stream delineation (Watershed Company 2007). Results of this 2016 delineation closely match findings in the 2007 report.

4.3.5.3 Growing Season

The growing season is generally defined as the portion of the year when soil temperatures at approximately 20 inches below the soil surface are above biological zero or 5 degrees Celsius (US Department of Agriculture – Soil Conservation Service 1985). When soil temperature data are not available, the Wetland Delineation Manual allows using the closest and best available weather station data to estimate the length of the growing season based on a 50% probability of a temperature of 28°F or higher (Ecology 1997, paragraph 46). Using this approximation, the growing season in this region would be 305 days long at least 50% of the time (WETS Station WA233). Generally this translates to the period of February to December. To meet the hydrology criteria at this site, soils would need to be ponded, flooded or have a water table 12 inches or less below the soil surface for at least 14 consecutive days during that interval. The fieldwork was conducted during the growing season.

4.3.6 Characterization of Delineated Wetlands

Six slope wetlands and two riverine wetlands were delineated on the subject property. Table 2 lists the Cowardin classification, HGM classification, and size of these wetlands on the subject property. Figure 5 shows the boundaries of the wetlands and location of data plots. Data sheets are included in Appendix C.

Table 2. Wetland Characteristics. Note that several of the wetlands extend off property and only the area of wetland mapped on the property is included in the area calculation.

Name	Cowardin ¹	HGM	Acres	Sq Ft
Wetland A	PF	Slope	0.57	2,482
Wetland B	PEM/PSS	Slope	0.17	759
Wetland C	PF	Slope	0.01	355
Wetland D	PSS	Riverine	0.26	1,157
Wetland E	PSS/PEM PF	Slope	0.76	33,131
Wetland F	PSS	Riverine	0.27	11,661
Wetland G	PSS/PF/PEM	Slope	0.32	13,774
Wetland H	PEM	Slope	0.06	2,600
Total			1.67	65,919

Notes: TPF = Palustrine Forested, PSS = Palustrine Scrub Shrub, PEM = Palustrine Emergent



Wetland A

Wetland A is a slope wetland which receives hydrologic inputs from several hillslope seeps. Parts of this wetland could be considered riverine or depressional, but the vast majority is slope wetland. The unnamed tributary to Whisper Creek flows to Wetland A where it loses bed and bank features in this broad shallow slope. Another indistinct channel flows through the northwestern portion of this wetland. Water leaves the wetland at its north east edge where it flows into a culvert. Surface water is present in much of the wetland. Dominant vegetation in Wetland A includes red alder, willows, salmonberry, Himalayan blackberry, English ivy, cherry laurel and skunk cabbage. Much of the wetland has an overstory of western red cedar rooted outside the wetland. Very dark low chroma (10YR 3/1) organic or mucky modified soils were observed in this wetland.

Wetland B

Wetland B is a small hillslope seep wetland located between two of the buildings. The north edge of the wetland abuts an asphalt playground. The eastern portion of Wetland B is mowed herbaceous vegetation with a mix of grasses and herbs (*Juncus effusus*, *Plantago spp., Carex spp., Ranunculus repens*, etc). The western portion of Wetland B is dominated by Himalayan blackberry and cottonwood saplings. Soils are low chroma with prominent redox concentrations starting at the surface. The water table was observed within 12 inches of the surface near the edge of the wetland. Water flows out of the wetland across the paved area.

Wetland C

Wetland C is a hillslope seep wetland that starts as a small depression at the crest of a slope. Vegetation in this area includes a canopy of cottonwood and alder with shrub canopy of western mountain ash (*Sorbus sitchensis*), Himalayan blackberry and holly (*Ilex aquifolium*). English ivy (*Helix hedera*) covers much of the ground surface and is creeping up many of the trees. Herbaceous vegetation includes bittersweet nightshade (*Solanum dulcamara*), creeping buttercup, and field horsetail (*Equisetum arvense*). Water spills from the depression to the bare hillslope where it seeps near the surface to the northeast to intercept the unnamed tributary near the upstream edge of Wetland D. The hillslope is dominated by western red cedar (Thuja plicata) canopy, but has a nearly unvegetated understory. This area is near the school building along an informal path to the forest and has likely received extensive recreational use and disturbance in the past.

Wetland D

Wetland D is a fringing wetland along the unnamed tributary to Whisper Creek. The creek was realigned when the school buildings were constructed. This wetland extends from the creek to the edge of the sidewalk along one of the school buildings. Dominant vegetation includes Himalayan blackberry, bindweed, salmon berry, and field horsetail. Most of this narrow wetland has a tree canopy which is rooted in adjacent uplands. Soils are saturated to the surface with evidence of surface flow across the sidewalk to the east to the adjacent building. Soils exhibit hydric indicators with a gley matrix and prominent redox concentrations (7.5YR 4/4) starting at 5 inches from the surface and increasing with depth.

Wetland E

Wetland E is a large wetland complex along the northern part of the west edge of the parcel. This wetland is fed by a series of hillslope seeps. Several inches of water was observed in the upslope portion of this wetland. Vegetation in Wetland E includes a



portion of the mowed field with grasses (*Agrostis* spp., *Schedonorus arundinaceus*) and creeping buttercup (*Ranunculus repens*). The portion of Wetland E at the toe of the slope has been mowed at some times in the past but is likely too wet to mow regularly and is now dominated by a mix of grasses (mostly reed canary grass), sedges, and rushes (*Juncus effusus*) with some Himalayan blackberry. The upslope portion of the wetland is dominated by a shrub community dominated by salmonberry and Himalayan blackberry. Alders are present in the southwestern portion of the wetland and a few willows are present near the northwest corner. A surface drain collects surface water on the playfield at the toe of slope along the northeast edge of Wetland E. Soils in the wetland are silt loam to sandy loam with low chroma matrix (10YR 4/1) and prominent redox concentrations starting at the surface.

Wetland F

Wetland F is a riverine wetland associated with Whisper Creek. The creek enters the property midway along the northern edge of the property and exits just south of the northeast corner. Wetland F borders the creek along the north bank and portions of the south bank within the property, extending off property to the north and east. Much of Wetland F has shallow surface flow associated with the creek. Wetland vegetation includes black cottonwood, western red cedar, red alder, willow species, salmonberry, skunk cabbage, yellow iris, horsetail and reed canarygrass. Himalayan blackberry is also present.

Wetland G

Wetland G is a slope wetland fed by a series of hillslope seeps. The hillslope at this location was cut back to create a flat asphalt parking lot for the school, which intercepted subsurface flows and formed a wetland. Water from the seeps sheet-flows across the asphalt parking surface to the east. Water was flowing up to several inches in depth on the parking lot in September 2016 despite a recent period of unusually dry conditions. Lack of maintenance on the parking lot has resulted in growth of herbaceous wetland vegetation across much of the inundated area, however soils have not developed on the surface of the asphalt beyond a film of moss and organic matter present in localized parts of the parking lot. Dominant vegetation on the hillslope portion of this wetland includes willow and red alder with an understory of salmonberry and other wetland shrubs, Himalayan blackberry, and reed canarygrass. East of the parking lot the wetland extends a short distance, but then the water goes subsurface so hydric soil and hydrology indicators are lost. Wetland G did not have a visible surface connection to downstream waters but likely has a shallow subsurface connection to Whisper Creek to the north and east.

Wetland H

Wetland H is a constructed roadside swale along NE Perkins way. Much of the swale is regularly mowed and maintained by the City. This wetland is actually in the right-of way to NE Perkins Way. Vegetation consists of lawn grasses (e.g. *Agrostis* spp. and *Holchus lanatus*) and herbaceous plants including *Equisetum arvense*, *Ranunculus repens* and several sedge and rush species. The swale ends in a catchbasin to a culvert under the driveway. Water flows through the culvert to join a small tributary stream that flows east towards Whisper Creek. Soils in the wetland are sandy loam with lower chroma matrix than adjacent upland soils and prominent redox features at 10YR 4/6 starting within 3 inches of the surface. Soils were moist throughout the profile within the wetland in comparison to dry soils throughout the profile in the adjacent upland.



4.4 Wetland Functional Assessment

The City of Shoreline code uses the 2014 version of the Washington State Wetland Rating System for Western Washington (Ecology Publication #014-06-029) to assess wetland functions and values. Wetlands can be rated from Category I (highly functioning) to Category IV (low functioning). Prior to rating, wetlands are classified according to landscape position. The rating system relies on a combination of field observations and office research to evaluate wetland functions and values. A variety of sources are used to obtain local information on water quality, hydrology, priority species presence and surrounding land use. The scoring and rating forms and figures for the rating system are located in Appendix C.

The Wetland Categories derived from the rating system are then used by the local jurisdictions to set buffers and mitigation ratios. Table 3 lists ratings and associated buffer widths determined for each wetland (see rating forms in Appendix C). The City of Shoreline has a standard minimum buffer width that requires the implementation of the mitigation measures in Table 20.80.330(A)(2), where applicable, to minimize the impacts of the adjacent land uses. If these mitigation measures are not implemented, buffer widths must be increased by 33 percent.

Table 3. Scores Obtained from the Wetland Rating System for Western Washington

	Wetland Name							
Function	Α	В	C	D	Е	F	G	Н
Water Quality	6	. 6	6	7	6	7	6	6
Hydrology	5	5	5	7	5	7	6	5
Habitat	6	5	5	5	6	6	4	3
Total	17	16	15	19	17	20	16	14
Category	III	- 111	101	111	III	11-	Ш	IV
Category Based on Special Characteristics	NA	NA	NA	NA	NA	NA	NA	NA
Minimum Standard Buffer Width (SMC 20.80.330)	165	105	105	105	165	165	75	40
Buffer Width with no Mitigation Measures (per Table 20.80.330(A)(2) R)	219	140	140	140	219	219	100	53

4.4.1 Water Quality

Water quality functions scored moderate for each of the slope wetlands and moderately high for the riverine wetlands. Water quality functions include nutrient cycling, filtering of pollutants, and retention of sediment and particulates. Because each of these wetlands receives stormwater inputs from the adjacent neighborhood and from recreational uses including dogs, there is potential to improve water quality. These wetlands are connected to downstream waterways by adjacency and/or proximity to Whisper Creek. McAleer Creek is on the 303d list of impaired waterbodies.



4.4.2 Hydrology

The slope wetlands are rated as having moderate level of hydrology functions. The slope wetlands on the site are predominantly fed by groundwater seeps. Hydrologic functions of slope wetlands include short- and long-term water storage and groundwater recharge. The riverine wetlands provide similar functions, but also provide flood storage. They two riverine wetland rated moderately high for hydrologic functions. There are known flooding concerns for downstream waters in McAleer Creek.

4.4.3 Habitat

Habitat functions were rated as moderate to low. These wetlands lie within an urban residential neighborhood with little available habitat in the vicinity. No priority species are known to occur in the area. Cutthroat trout may inhabit Whisper Creek but use of this tributary to McAleer Creek by other salmonids is not documented (City of Shoreline 2015). Invasive weeds including reed canarygrass and Himalayan blackberry dominate several of the wetlands. Some of the wetlands had priority habitats in the form of riparian and instream habitats and logs and snags in the immediate vicinity.

5.0 REGULATORY CONTEXT

5.1 Federal

The Army Corps of Engineers has jurisdiction over all non-isolated wetlands and water bodies under Section 404 of the Clean Water Act. All of the wetlands are likely to fall under Corps of Engineers jurisdiction, and impacts within the water/wetland boundary would require a permit from the Corps. Permits for impacts to waters/wetlands would also be subject to review under Section 7 of the Threatened and Endangered Species Act and Section 106 of the National Historic Preservation Act.

5.2 Washington State

The Washington State Department of Ecology will review permits for impacts to waters/wetlands under Section 401 of the Clean Water Act, which regulates water quality. A 401 permit is generally not required unless a Corps permit is triggered. Any work below ordinary high water of a stream, or work in an adjacent wetland that could impact stream hydrology would trigger an Hydraulic Projects Approval (HPA) from Washington Department of Fish & Wildlife. The project should not need an HPA permit. Construction activities will be covered under the state National Pollution Discharge Elimination System (NPDES) general permit for construction projects since more than 1 acre will be disturbed.

5.3 City of Shoreline

Figure 4 shows ordinary high water, wetland boundary and extent of wetland buffer and riparian management areas on the subject property. The City sets minimum 60 foot buffers from the edge of Category III wetlands with a habitat score of 4, 105 foot buffers for Category III wetlands with a habitat score of 5 and 165 foot buffers for Category II or III wetlands with a habitat score of 6. Buffers are increased by 33 percent if mitigation measures to reduce impacts are not followed. Since the project involves no development, the minimum buffers would apply.

Stream buffer widths are based on stream typing. Whisper Creek is considered a fish bearing stream (Type F) and the unnamed tributary is typed as a non-fish perennial stream (Np). Cutthroat trout are expected to be present in Whisper Creek (City of



Shoreline 2015), but other fish presence is not documented in these tributaries to McAleer Creek (WDFW 2016: SalmonScape 2016). The nearest documented presence of listed salmonid species is in McAleer Creek, approximately 0.5 miles south and east, downstream of the project area.

For a Type Np stream, the buffer extends 65 feet landward from the Ordinary High Water mark. For a Type F – non-anadromous fish bearing stream, the buffer extends 75 feet landward from OHW. Clearing, grading, building, vegetation removal and topping of trees is prohibited in the wetland and stream buffers. There are exemptions and variances possible under certain conditions. Mitigation is required for non-exempt activities.

If no development were proposed within these setbacks, the City would not require the school district to remove the existing infrastructure. New buildings could be built on the same footprint if the redevelopment occurred within one year of demolition. It the property is not developed within one year, redevelopment will be subject to all critical areas restrictions. Under the City of Shoreline Municipal Code 20.80.040 C2, demolition of structures located within critical areas or their buffers is allowed with approval of a stormwater pollution prevention plan provided that clearing limits will adequately protect the critical areas.

6.0 IMPACTS TO CRITICAL AREAS

The three school buildings and surrounding infrastructure will be demolished and removed, including foundations, sidewalks, asphalt areas and utilities. Figure 5 shows the project footprint. The project will have no direct impacts to wetlands or streams. Impacts will occur to portions of the buffer for the tributary to Whisper Creek along the west side and several of the wetlands near the project area. Approximately 1 acre of buffer will be impacted. All buffer areas to be impacted have been previously disturbed and are currently occupied by buildings, other impervious surfaces, grass lawns or landscaped areas. No undisturbed native vegetation or native trees will be removed. As mentioned in the previous section, demolition activities are allowed in critical area buffers. Figure 5 shows impacts to the Critical Area buffers

7.0 SITE STABILIZATION/ MITIGATION MEASURES

Following demolition, the foundations will be filled using on-site borrow or imported clean fill and the slope will be graded to a stable condition with slopes no greater than 3:1.. The areas of disturbance will be hydroseeded with a native grass seed mixed with a cellulose fiber mulch and tackifier. Where the sidewalk and building are being removed adjacent to Wetland D, a low berm will be constructed to prevent the Whisper Creek tributary from eroding into this area and to provide a buffer between the slope and the stream and wetland. The berm will be planted with native Douglas-fir and western red-cedar trees to provide additional protection to the stream and Wetland D. Several western red-cedar will also be planted around Wetland B following grading. The site stabilization measures are shown on Figure 6.

8.0 CONCLUSION

The Shoreline School District plans to demolish all buildings at the old Cedarbrook Elementary School site. Eight wetlands, two streams, and several small tributaries were delineated on or immediately adjacent to the project site. Wetlands were rated using the most recent (2104)



version of the Washington State Wetland Rating System as Category II, III and IV wetlands. Streams were rated using the Washington State Stream Typing System and the City of Shoreline designations as F (fish bearing – non anadramous) and Np (non-fish perennial) streams. Buffers are set by the City of Shoreline depending on stream type, wetland category. No geologic hazard areas will be impacted by the project. The project will have no direct impact to any of the identified wetlands or streams and no federal or state permit will be required except for coverage under the NPDES Construction Stormwater General Permit during construction. Buffer impacts are all occurring to previously disturbed surfaces. Approximately 41,010 square feet of impervious surface will be removed. Impervious surfaces will be reduced from 2.78 acres to 1.84 acres. This a 34 percent reduction in impervious surface. All disturbed areas will be graded to a stable slope and seeded with a native grass seed mix. A dozen native trees will be planted adjacent to the wetlands.



9.0 REFERENCES

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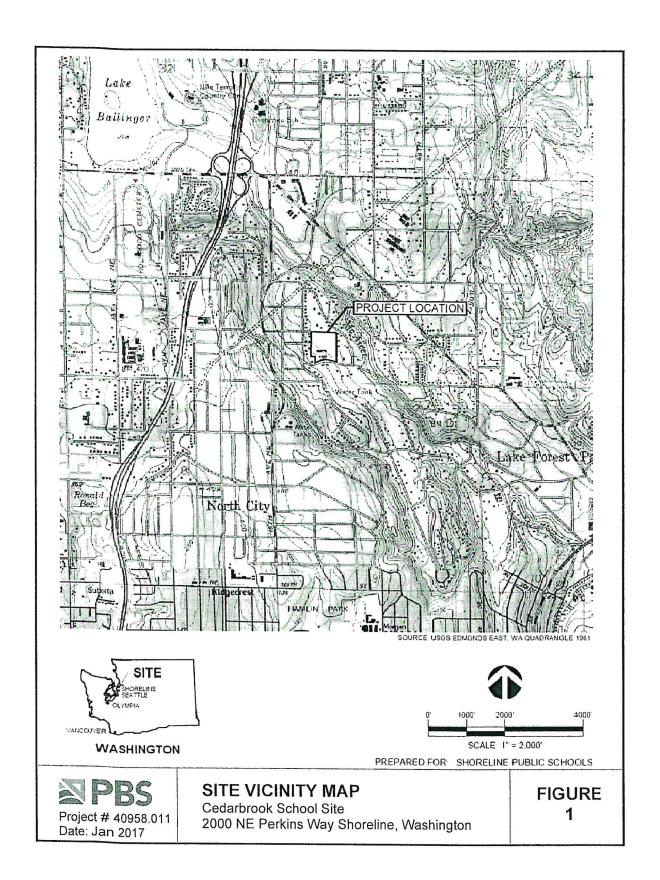


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APPENDIX A
Figures





KEY:

Property Boundary

City of Shoreline Mapped Wetlands

Np - Perennial non-fish streams

Not Typed

Culverted streams

Steep slopes

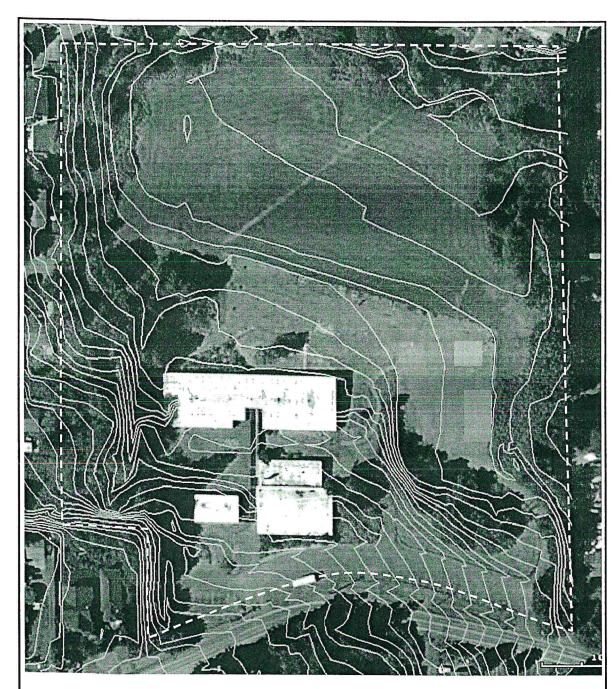
Note: Data from City of Shoreline Surface Water GIS layer



Project # 40958.011 Date: Jan 2017

SHORELINE MAPPED CRITICAL AREAS

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington FIGURE 2



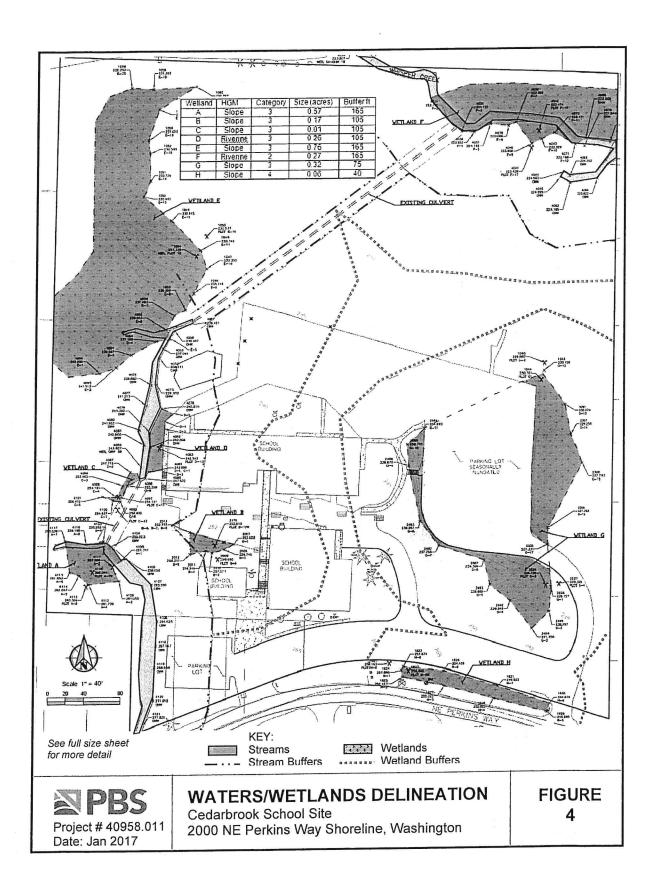
Topography from City of Shoreline GIS database - 2' contours

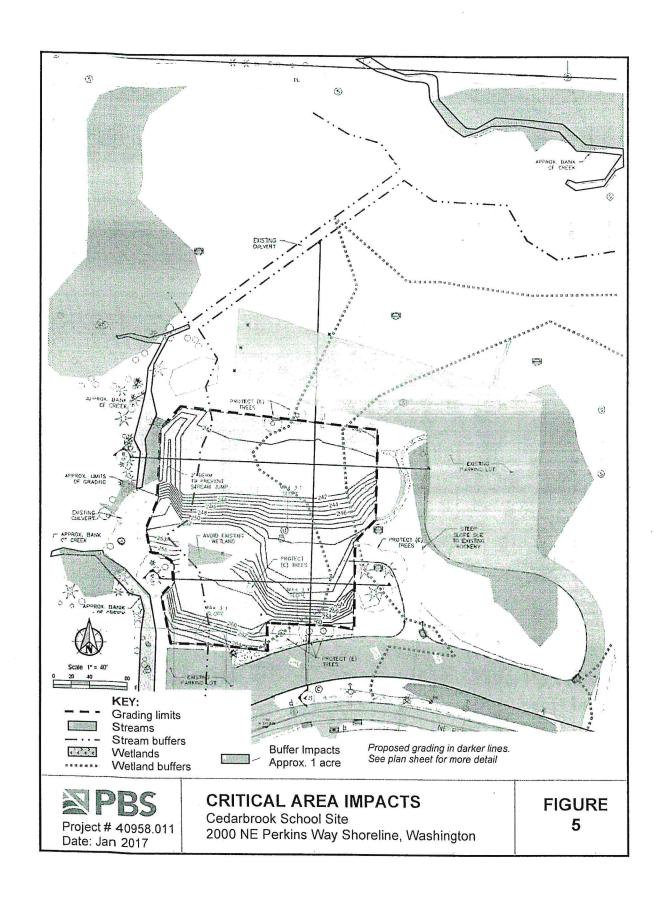


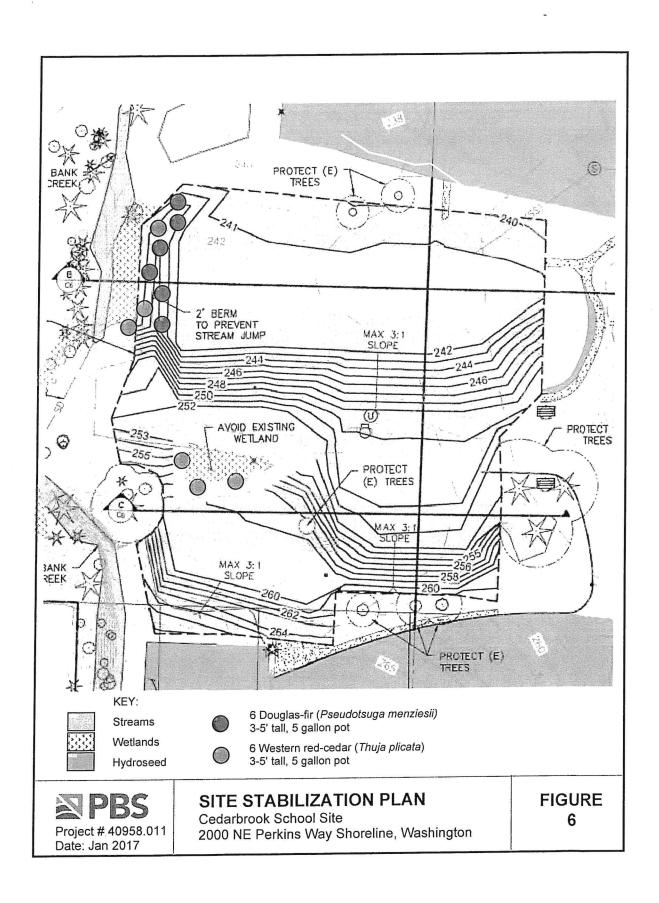
Project # 40958.011 Date: Jan 2017

PARCEL AERIAL / TOPOGRAPHY

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington FIGURE 3







APPENDIX B
Site Photographs



Photo 1. Wetland A looking north



Photo 3. Wetland B looking north along east edge of wetland.



<u>Photo 5</u>. Wetland C seeps downslope to unnamed tributary and Wetland D.



Photo 2. Wetland A wetland plot

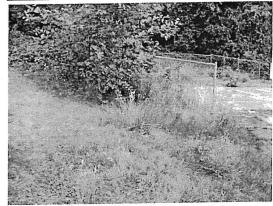


Photo 4. Wetland B looking west



<u>Photo 6</u>. Wetland D looking north. Wetland extends to sidewalk along building



Photo 9. Wetland D looking south. Wetland extends to sidewalk along building. Creek is on photo right.



Photo 10. Wetland E looking southwest

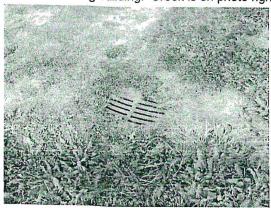


Photo 11. Surface drain in playfield at base of Wetland E



Photo 12. Wetland E looking south. Greener vegetation is approximate extent of wetland.



Photo 13. Wetland F fringing wetland on Whisper Creek

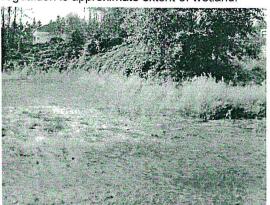


Photo 14. Wetland G starts as hillslope seeps along the cut slope and flows across asphalt parking area.

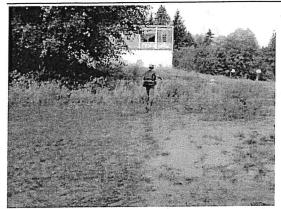


Photo 15. Looking west from middle of Wetland G across water flowing over asphalt parking area.



Photo 17. Wetland H. Looking southeast along wetland H roadside swale along Perkins Way.



Photo 19. Upper (southern) reach of unnamed tributary as it enters wetland A.



Photo 16. Looking southwest across wetland G from northeast corner of wetland.

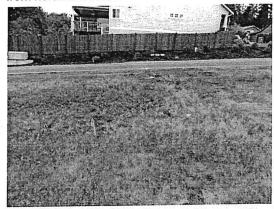


Photo 18. Wetland H. Plots and wetland boundary along west end of Wetland H.

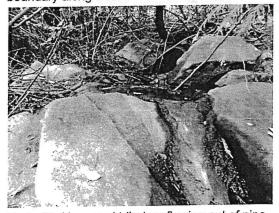


Photo 20. Unnamed tributary flowing out of pipe near upstream section of Wetland D.



Photo 21. Unnamed tributary flowing to piped reach under playfields.



Photo 22. Outfall of east unnamed tributary pipe to Whisper Creek

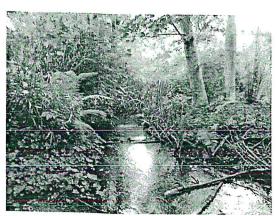


Photo 23. Whisper Creek near northeast corner of property

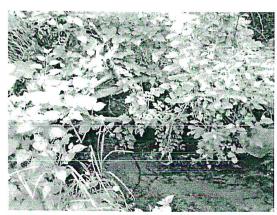


Photo 24. Whisper Creek has fringing wetland.

APPENDIX C

Data Sheets and Wetland Rating Form

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region Project/Site: Cedarbrook Site City/County: King Sampling Date: 9/6/2016 Applicant/Owner: Seattle Public Schools State: WA Sampling Point: G-1 Investigator(s): Katharine Lee, Kate Machata Section/Township/Range: S4 T26N R4E Landform (hillslope, terrace etc.): graded field Local relief: Slope (%): 2 none Subregion (LRR): Α Lat: 47.765575 Long: -122.307092 Datum: WGS 84 Soil Map Unit Name: Not Mapped NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes X (If no, explain in Remarks) No Are "Normal Circumstances" Are Vegetation ,Soil , or Hydrology significantly disturbed? present? (If needed, explain any Are Vegetation ,Soil , or Hydrology naturally problematic? answers in remarks) Yes X No SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? Yes X No within a wetland? Wetland Hydrology Present? Yes X No Yes X Remarks: VEGETATION Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: 30 ft) % Cover Species? Status Number of Dominant Species (A) That Are OBL, FACW, or FAC: 2 3. Total Number of Dominant Species Across All Strata: (B) Total Cover: 0 Sapling/Shrub Stratum (Plot size: 30 ft) Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 2. Prevalence Index worksheet: 3. Total % Cover of: Multiply by: OBL species $0 \times 1 =$ FACW species $0 \times 2 =$ Total Cover: 0 FAC species 87 x 3 = 261 Herb Stratum (Plot size: 5 ft) FACU species 16 x 4 = 64 Agrostis species 85 Yes FAC **UPL** species $0 \times 5 =$ 2. Hypochaeris radicata 15 **FACU** No Column Totals: 103 (A) 325 (B) 3. Holcus lanatus 2 Prevalence Index = B/A = 3.16 No FAC Plantago lanceolata 1 Rapid Test for Hydrophytic Vegetation No **FACU** 5. Trifolium species 1 FACW to UPL Dominance Test is >50% X 6 Prevalence Index is ≤3.01 Morphological Adaptations¹ (Provide supporting 8. data in Remarks or on a separate sheet) Total Cover: 104 Wetland Non-Vascular Plants¹ Woody Vine Stratum (Plot Size: 5 ft) Problematic Hydrophytic Vegetation¹ (Explain) 1 Indicators of hydric soil and wetland hydrology must be Total Cover: 0 Hydrophytic Vegetation % Bare Ground in Herb Stratum Present?

Remarks:

SOIL								Sampling Point:	G-1
Profi	- ile Description: (Descri	ibe to the d	epth needed to	document	the indicator	or confirm th	e absence of indicato	rs.)	
Depth	Matrix				Features				
(in.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Re	emarks
0-4	10YR 3/2	100	None				sandy silty loam		
4-9	10YR 5/2	97	10YR 4/4	3	С	M	sandy silty loam	much grave	el
9-18	10YR 4/2	80	10YR 4/6	20	С	M	sandy silty loam	much grave	el
_									
_			-						
				_			W-10-10-10-10-10-10-10-10-10-10-10-10-10-		
								_	
¹ Tvpe:	C=Concentration, D=Deplet	tion, RM=Red	uced Matrix. ² Loc	cation: PL=F	Pore Lining, RC=F	Root Channel, M	1=Matrix.		
3.5	c Soil Indicators: (Appli						Indicators for Prob	lematic Hydric Soil:	s³:
Try arr.		10001		dy Redox (uck (A10)	
	Histosol (A1)			oped Matrix	A			rent Material (TF2)	
	Histic Epipedon (A2)				Mineral (F1) (e	xcept MLRA		allow dark surface (T	ΓF12)
	Black Histic (A3)		-			хоор		Explain in Remarks)	
	Hydrogen Sulfide (A4)				Matrix (F2)			_Apioni iii i	
X	Depleted Below Dark S	- E		leted Matri					
	Thick Dark Surface (A1	7-			urface (F6)	31	Indicators of hydrophytic	c vegetation and	
	Sandy Mucky Mineral (S				Surface (F7)		wetland hydrology mus		
	Sandy Gleyed Matrix (S	34)	Kea	ox Depress	sions (F8)		Welland Hydrology mad		
Restrice: Type: Depth	ctive Layer (if present):	:					Hydric Sol Yes	il Present? X No	
Remar	ks:								
	ROLOGY								
	nd Hydrology Indicators		(C - 1 - mA)				_ Secondary Indicators	~ /2 or more required	ı,
	y Indicators (any one ind	licator is sui			(DO) (avcor	- LANA/ gooet)		ned Leaves (B9) (NV	
	Surface Water (A1)		4		eaves (B9) (excep	of NVV Coasi,		atterns (B10)	235 4221 4.
	High Water Table (A2)		P	Crust (B11				n Water Table (C2)	
	Saturation (A3)				ebrates (B13)			Visible on Aerial Imag	acn/(C9)
	Water Marks (B1)				ide Odor (C1)			c Position (D2)	Jery (Oa)
	Sediment Deposits (B2)	1			heres along Livin				
	Drift Deposits (B3)	,			educed Iron (C4		Shallow Aq	×-	
	Algal Mat or Crust (B4)				eduction in Tille			e Hummocks (D4)	
	Iron Deposits (B5)				essed Plants (D	1) (LRR A)		al Test (D5) Mounds (D6) (LRR /	Δ١
	Surface Soil Cracks (B6)				in Remarks)	- (00)		10001100 (20) (20)	7)
	Inundation Visible on Aerial	Imagery (B7)	Spars	ely Vegetate	ed Concave Surfa	ace (88)			
Field O	bservations:								
Surface	e Water Present?	Yes	No	X	Depth (in):				
Water T	Table Present?	Yes	No	X	Depth (in):		1	ydrology Present?	
	tion Present?	Yes	No	X	Depth (in):	>18	Yes/	No	
(include	es capillary fringe) be Recorded Data (strea		itariag woll go	rial photor	s previous insr	pections) if av	vailable:		
Descri								ist starting from	O inchas and
Remark	ks: Thi	is is the drie below. Plo	st time of year. To	op 1 inch of asphall	of soil profile is t parking lot. As	s moist from re erial imagery s	ecent rainfall. The soil is shows many year record	a moist starting from	er asphalt.

Project/Site:	Cedarbrook Si	ite			(City/County:	King	Sampling	Date:	9/6/2	016
Applicant/Owner:	Seattle Public	Schools				State:		Sampling	0.	G-:	
Investigator(s):	Katharine Lee	, Kate Machata			,		nship/Range:	S4 T26N R4E			
Landform (hillslope, terrace			flat				Local relief:	none	Slope (%	6)· O	
Subregion (LRR):	, A -	Lat:		65629		l ona:	-122.307083	110110	Datu	_	GS 84
Soil Map Unit Name:	Not Mapped	-		00020			classification:	upland	Datu	II	30 04
Are climatic / hydrologic co	nditions on the	site typical for th	is time of v	ear?		Yes	X No		oplain in R	omarke)	
Are Vegetation	•	or Hydrology			ntly dis	sturbed?	Are "Normal (Circumstances" eded, explain any	(pialii ili K	siliai ks)	
Are Vegetation	,Soil ,	or Hydrology		naturally	proble	ematic?	answers	in remarks)	Yes	X No)
SUMMARY OF FIND	NGS - Attac	ch site map sho	wing sami	od pailc	int loc	ations, tran	sects importa	nt features etc			
Hydrophytic Vegetation Pr	esent?	Yes	X	No		1	.cooto, importar	re reactives, etc.			
Hydric Soil Present?		Yes			X		Sampled Area				
Wetland Hydrology Preser	it?	Yes		_	X	withir	a wetland?	Yes	No	X	
Remarks:						<u> </u>					=
VEGETATION											
_			Absolute	Don	ninant	Indicator	Dominanc	e Test worksheet:			
Tree Stratum (Plot size: 3	30 ft)		% Cover	Spe	cies?	Status	Number of	Dominant Species			
1.							That Are O	BL, FACW, or FAC:		1	(A)
2.				-			-				-
3.		-					Total Numb	er of Dominant			
4.		-					•			4	(D)
		Total Covers		-			- Species Ad	ross All Strata:	_	1	- ^(B)
Sapling/Shrub Stratum (Pl	ot size: 30 ft)	Total Cover:	0								
1.	5t 3126, 30 It)						Percent of	Dominant Species			
2.				c :			That Are O	BL, FACW, or FAC:		100%	(A/B)
						-	Prevalence	e Index worksheet	:		
3.							Total S	% Cover of:		Multi	ply by:
4.				, x			OBL specie	es 0 x	1 =		
5.				0 2			FACW spe		2 =	*********	-
		Total Cover:	0	0 0		-	FAC specie			255	-
Herb Stratum (Plot size: 5		rotal Gover.		ä							-
Agrostis species	10		22				FACU spec		4 =		-
			85	-	es	FAC	UPL specie		5 =	-	-
			2		No	FACU	Column To	tals: 90 (A)	275	(B)
3. Taraxacum officinale			2	1	No	FACU		Prevalence Index	= B/A =	3	3.06
 Hypochaeris radicata 			1	1	No	FACU		Rapid Test for Hy	drophytic	Vegetal	ion
5.		_					×	Dominance Test is	s >50%		
6.							-	Prevalence Index			
7.							-				
8.							-	Morphological Adapt data in Remarks or o			
o							_	data in Remarks or c	n a separ	ate sneet)	
		Total Cover:	90					Wetland Non-Vas	cular Pla	nts ¹	
Woody Vine Stratum (Plo	t Size: 5 ft)							Problematic Hydroph	ytic Vegel	ation¹ (Ex	plain)
1.							¹ Indicators of	hydric soil and wetlan	d hydroloc	ny must h	Α.
2.			-			•	present.	riyana son ana nonan	a 11, a. 5.5 g	, maor z	
		Total Cover:	0				Hydrophyt	tic Vegetation			
% Bare Ground in Herb Str	atum	0 %		•.5		•6	Present?	Yes	ΧN	lo	
						***************************************	I resenti			<u> </u>	
Remarks:											
				D	oes no	ot meet Prev	alence Index				e-

epth	le Description: (Describ	4 41 - 1-						pling Point: G-2
Depth in.)		se to the de	pth needed to o			or confirm th	e absence of indicators.)	
in.)					Features Type ¹	Loc ²	Texture	Remarks
•	Color (moist)	%	Color (moist)	%	Туре	LOC	Sandy loam	1.0
	10YR 3/1	100	None				Sandy loam	some gravel.
2-18 —	10YR 4/2	90	7.5YR 4/4	10	C	IVI	Salidy Idaili	Boile gravei.
					,			
_			_					-
_								
_								
	C=Concentration, D=Depletion				ore Lining, RC=	Root Channel, N		in Hudria Saila ³ :
ydrio	Soil Indicators: (Applie	cable to all	LRRs, unless o	therwise i	noted.)		Indicators for Problema	
	Histosol (A1)		Sand	dy Redox ((S5)		2 cm Muck (A	
78 100000	Histic Epipedon (A2)			ped Matrix			Red Parent N	
	Black Histic (A3)		Loar	ny Mucky	Mineral (F1) (e	xcept MLRA		dark surface (TF12)
	Hydrogen Sulfide (A4)		Loar	ny Gleyed	Matrix (F2)		Other (Explai	n in Remarks)
	Depleted Below Dark Sເ	urface (A11)	Depl	eted Matri	ix (F3)			
	Thick Dark Surface (A12	2)	Red	x Dark Su	urface (F6)			
	Sandy Mucky Mineral (S	;1) .	Depl	eted Dark	Surface (F7)	3	Indicators of hydrophytic vege	
	Sandy Gleyed Matrix (S	4)	Redo	x Depres	sions (F8)		wetland hydrology must be p	oresent.
octri	ctive Layer (if present):							
ype:	cuve Layer (ii present).						Hydric Soil Pres	
epth							Yes	NoX
emar	ke.						2 1 5 1 - 1 4011	
Ciliai				Some ev	ridence of mixir	ng in soil profil	e. Garbage found at 12".	-
	ROLOGY							
IYDF								
	d Hydrology Indicators	:						
etlar			cient)				Secondary Indicators (2 o	
etlar	nd Hydrology Indicators y Indicators (any one indi			-Stained Le	eaves (B9) (excep	ot NW coast)		r more required) eaves (B9) (NW coast)
etlar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1)		Water	-Stained Le		ot NW coast)		eaves (B9) (NW coast)
letlar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2)		Water Salt	Crust (B11	1)	ot NW coast)	Water-Stained Lo	eaves (B9) (NW coast) is (B10)
etlar	id Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2) Saturation (A3)		Water Salt (Crust (B11 tic Inverte	l) brates (B13)	ot NW coast)	Water-Stained Lo Drainage Patterr Dry-Season Wat	eaves (B9) (NW coast) is (B10)
/etlar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Water Salt (Aqua	Crust (B11 tic Inverte ogen Sulfi	l) ebrates (B13) de Odor (C1)		Water-Stained Lo Drainage Patterr Dry-Season Wat	eaves (B9) (NW co ast) is (B10) er Table (C2) e on Aerial Imagery (C9
/etlar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Water Salt (Aqua Hydr	Crust (B11 tic Inverte ogen Sulficed Rhizosp	l) brates (B13) de Odor (C1) bheres along Livir	ng Roots (C3)	Drainage Pattern Dry-Season Wat Saturation Visible	eaves (B9) (NW co ast) is (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2)
fetlar rimar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Water Salt (Aqua Hydr Oxidiz	Crust (B11 tic Inverte ogen Sulficed Rhizosp ence of Re	l) brates (B13) de Odor (C1) bheres along Livir educed Iron (C	ng Roots (C3)	Drainage Patterr Dry-Season Wat Saturation Visible	eaves (B9) (NW coast) as (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3)
/etlar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water Salt (Aqua Hydr Oxidiz Press	Crust (B11 tic Inverte ogen Sulfic ed Rhizosp ence of Re nt Iron Re	l) brates (B13) de Odor (C1) brees along Livir educed Iron (C- duction in Tille	ng Roots (C3) 4) d Soils (C6)	Drainage Patterr Dry-Season Wat Saturation Visible Geomorphic Pos Shallow Aquitard Frost-Heave Hur	eaves (B9) (NW co ast) as (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3) nmocks (D4)
/etlar	d Hydrology Indicators y Indicators (any one indi Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	cator is suffi - - - - - -	Water Salt (Aqua Hydr Oxidia Press Rece	Crust (B11 tic Inverte ogen Sulfic ed Rhizosp ence of Re nt Iron Re ed or Stre	brates (B13) de Odor (C1) cheres along Livir educed Iron (Country and Iron (Country	ng Roots (C3) 4) d Soils (C6)	Water-Stained Le Drainage Pattern Dry-Season Wat Saturation Visible Geomorphic Pos Shallow Aquitard	eaves (B9) (NW coast) as (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3) nmocks (D4) t (D5)
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Vetlar riman	Indicators (any one indicators of Indicators (any one indicators (any one indicators (any one indicators (any one indicators (A1)) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Interpretations: Water Present?	cator is suffii	Water Salt of Aqua Hydr Oxidiz Preso Rece Stund Othe Spars	Crust (B11 tic Inverte ogen Sulfic ed Rhizosp ence of Re nt Iron Re ed or Stre r (Explain ely Vegetate X	brates (B13) de Odor (C1) wheres along Livir educed Iron (C- eduction in Tille essed Plants (D in Remarks) ed Concave Surf Depth (in): Depth (in):	ng Roots (C3) 4) d Soils (C6) 1) (LRR A) ace (B8)	Water-Stained Le Drainage Pattern Dry-Season Water Saturation Visible Geomorphic Pose Shallow Aquitand Frost-Heave Hur FAC-Neutral Tese Raised Ant Mour	eaves (B9) (NW coast) as (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3) nmocks (D4) t (D5) nds (D6) (LRR A)
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eld Courface	Indicators (any one indicators of Indicators (any one indicators (any one indicators (any one indicators (any one indicators (A1)) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Interpretations: Water Present?	cator is suffi	Water Salt of Aqua Hydr Oxidiz Presc Recce Stunt Othe Spars No No No	Crust (B11 tic Inverte ogen Sulfic ted Rhizosp ence of Re nt Iron Re ed or Stre r (Explain ely Vegetate X X X	brates (B13) de Odor (C1) cheres along Livir educed Iron (C- eduction in Tille essed Plants (D in Remarks) ed Concave Surf Depth (in): Depth (in):	ng Roots (C3) 4) d Soils (C6) 1) (LRR A) ace (B8)	Water-Stained Le Drainage Pattern Dry-Season Water Saturation Visible Geomorphic Pos Shallow Aquitand Frost-Heave Hur FAC-Neutral Tes Raised Ant Mour Wetland Hydrol Yes	eaves (B9) (NW coast) as (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3) nmocks (D4) t (D5) nds (D6) (LRR A)

Project/Site:	Cedarbrook Site	е	1	City/County:	King	Sampling I	Date:	9/6/20	016	
Applicant/Owner:	Seattle Public S	Schools			State:		Sampling F	-	G-3	
Investigator(s):	Katharine Lee, I	Kate Machata				nship/Range:	S4 T26N R4E			
Landform (hillslope, terrace			hillslope			Local relief:		Slope (%):	0.04	
Subregion (LRR):	Α —	Lat:		764920	Lona:	-122.307020		Datum:	-	GS 84
Soil Map Unit Name:	Not Mapped	MANONEN S		0.02-		classification:	upland	Duta		JO 0 .
Are climatic / hydrologic co	onditions on the s	ite typical for th	nis time of y	ear?		X No		lain in Rem	arks)	
Are Vegetation	6	or Hydrology		significantly dis		Are "Normal C present? (If need	ircumstances"	Idii ii, i to	aino,	
Are Vegetation	,Soil , c	or Hydrology		naturally proble	ematic?	answers in	remarks)	Yes X	No	
SUMMARY OF FIND	INGS - Attach	h site map sho	owing sam	pling point loc	cations, tran	sects, importan	t features, etc.			***************************************
rivuroprivite vegetation Pr	resent?	Yes	X	No						
Hydric Soil Present?	A Service	Yes	Х	No	3	Sampled Area				
Wetland Hydrology Preser	nt?	Yes	Х	No	Within	a wetland?	Yes X	No		
Remarks:										-
VEGETATION					**					
			Absolute	Dominant	Indicator	Dominance	Test worksheet:			
Tree Stratum (Plot size: 3	30 ft)	1	% Cover	Species?	Status	A recognition described and a second	Dominant Species			
1. Alnus rubra			10	Yes	FAC	That Are OB	BL, FACW, or FAC:		6	(A)
2.	200 00000000000000000000000000000000000	-				A Million Court of the Court of	27 73 75 00000 25 750 major non no money.			. ' '
3.		-	***************************************			Total Number	er of Dominant			
4.				-					•	(D)
	т	Catal Cayor	40	3		. Species Acr	oss All Strata:		6	- ^(B)
Sapling/Shrub Stratum (Pl	lot size: 30 ft)	Total Cover:	10	c						
1	ot 3126. 30 ft)					Percent of D	ominant Species			
Rubus armeniacus 2.			100	Yes	FAC	That Are OB	BL, FACW, or FAC:	<u>10</u>	00%	(A/B)
				-		Prevalence	Index worksheet:			The state of the s
3.						Total %	Cover of:		Multir	oly by:
4						OBL species	5 5 x 1	1 =	5	
5.			***************************************	1 1		FACW speci	-		10	•
	Т	Total Cover:	100	1		FAC species			375	•
Herb Stratum (Plot size: 5		014. 00.2		e.		FACU species		3		•
Equisetum arvense			10	Vas	E40		•	9		•
Ranunculus repens			10	Yes Yes	FAC	UPL species	-	9		•
			5	Yes	FAC	Column Tota			390	•
- Indicodipus			5	Yes	OBL		Prevalence Index =	B/A =	· <u>2</u>	2.89
4. Phalaris arundinacea			5	Yes	FACW		Rapid Test for Hydr	ophytic Ve	egetati	ion
5.						X	Dominance Test is	>50%		
6.						X	Prevalence Index is	s ≤3.0 ¹		
7.						•	Morphological Adaptat			- ortina
8.					-		data in Remarks or on			
	7	Total Cover:	25					(5)		
Woody Vine Stratum (Plo		Olai Covei.	25				Wetland Non-Vascu			
1.	it Size. 5 itj						Problematic Hydrophy	tic Vegetation	on' (Exp	plain)
			-	• •			hydric soil and wetland	hydrology n	nust be	е
2.						present.				
43 ±		Total Cover:	0			Hydrophytic	c Vegetation			
% Bare Ground in Herb St	ratum	75 %	1			Present?	Yes	X No		200
Remarks:										•
				A)	4					
				Alnus n	ubra appears	to be dying.				

SOIL					-		Samp	ing Point: G-3
Profil	le Description: (Descr	ibe to the d	lepth needed to	documer	nt the indicator	or confirm t	he absence of indicators.)	
Depth	Matrix			Redox	x Features			
(in.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-1"	10YR 2/2	100			_		sandy loam	
1-6"	7.5YR 3/2	98	10YR 5/2	2	D	M	sandy loam	
6-18"	10YR 5/2	80	7.5YR 4/6	20	С	М	sandy loam	
_	-							
_	-							
		*					1	
<u> </u>								
¹ Type:	C=Concentration, D=Deplet	tion, RM=Red	uced Matrix. ² Lo	cation: PL	=Pore Lining, RC=F	Root Channel, I	M=Matrix.	
2.5	Soil Indicators: (Appl			otherwise	e noted.)		Indicators for Problematic	: Hydric Soils ³ :
	Histosol (A1)		Sa	ndy Redox	(S5)		2 cm Muck (A1	0)
	Histic Epipedon (A2)		Str	pped Mat	rix (S6)		Red Parent Ma	iterial (TF2)
	Black Histic (A3)		Loa	my Muck	y Mineral (F1) (e	xcept MLRA	Very shallow d	ark surface (TF12)
-	Hydrogen Sulfide (A4)		Loa	my Gleye	d Matrix (F2)		Other (Explain	in Remarks)
	Depleted Below Dark S	Surface (A11		oleted Mat				
	Thick Dark Surface (A1				Surface (F6)			
	Sandy Mucky Mineral (-			k Surface (F7)	3	Indicators of hydrophytic vegeta	ation and
	Sandy Gleyed Matrix (S		Red	dox Depre	ssions (F8)		wetland hydrology must be pre	esent.
	ctive Layer (if present)	:					Hydric Soil Prese	nt?
Type: Depth							Yes X	No
Remark	ks:							
	ROLOGY							
	d Hydrology Indicator		(Caiaa4)				Secondary Indicators (2 or r	more required)
	/ Indicators (any one ind	licator is sui			(50) (L NIM/ annah)		ives (B9) (NW coast)
	Surface Water (A1)				_eaves (B9) (excep	i NVV Coasi)	Drainage Patterns	
	High Water Table (A2)			Crust (B1			Dry-Season Water	
	Saturation (A3)				tebrates (B13)		-	on Aerial Imagery (C9)
	Water Marks (B1)				fide Odor (C1)	5 (00)		
	Sediment Deposits (B2)				spheres along Livin	-		
	Drift Deposits (B3)				Reduced Iron (C4		Shallow Aquitard (
	Algal Mat or Crust (B4)				eduction in Tilled		Frost-Heave Humr	
	Iron Deposits (B5)				ressed Plants (D	1) (LKK A)	X FAC-Neutral Test	s (D6) (LRR A)
	Surface Soil Cracks (B6				n in Remarks)	ice (BR)	,	
	Inundation Visible on Aerial	imagery (B7)	Spar	sely vegeta	ated Concave Surfa	(00)		
Field O	bservations:					_		
Surface	Water Present?	Yes	No	Х	Depth (in):		144-1-116-1-1-1	ur Drogant?
	able Present?	Yes	XNo		Depth (in):	15"	Wetland Hydrolog	
	on Present?	Yes	X No_		Depth (in):	6"	Yes X	No
(include	es capillary fringe) ne Recorded Data (strea	m nauge m	onitoring well a	erial photo	os, previous insp	ections), if a	vailable:	
Describ								y feet unsland of this plat
Remark	ks: S	aturation to	6 inches during	dry seaso	n. There is an u	pweiling spri	ing about 20 feet west and a fev	v icet upsiope of tills piot.

Project/Site:	Cedarbrook S	ite			City/County: I	Kina	Samplir	ng Date:	9/6/2016
Applicant/Owner:	Seattle Public	Schools			State: \		· · · · · · · · · · · · · · · · · · ·	ng Point:	G-4
Investigator(s):		, Kate Machat	a		Section/Town		S4 T26N R4		
Landform (hillslope, terrace	e etc.):		hillslope		-	Local relief:	concave	Slope (%	i)· 4
Subregion (LRR):	Α -	Lat:	47.7	764921	- Lona: -	-122.306970		Datun	
Soil Map Unit Name:	Not Mapped					lassification:	upland		
Are climatic / hydrologic co	nditions on the	site typical for	this time of y	ear?	Yes			explain in Re	emarks)
Are Vegetation	O	, or Hydrology		significantly d	isturbed?	Are "Normal Ci present? (If need	rcumstances"	AND PROPERTY. COMMANDE	30000000000000 .
Are Vegetation	,Soil_	, or Hydrology		naturally prob	lematic?	answers in	remarks)	Yes X	K No
SUMMARY OF FIND	INGS - Atta	ch site map s	howing sam	pling point lo	cations, trans	ects, important	features, etc.		
Hydrophytic vegetation Pr	resent?	Yes	Х	No	W 1777 NO.				****
Hydric Soil Present? Wetland Hydrology Preser	-10	Yes_		No X		ampled Area a wetland?			
		Yes _		No X	_		Yes	No	X
Remarks:	Plot is located	d east of plot G	6-3 about 15 fe	eet at about th	e same elevat	ion, thus it is 15 t	feet further from	the upwelling	ng spring.
VEGETATION							· · · · · · · · · · · · · · · · · · ·		
Tree Stratum (Plot size:	30 ft)		Absolute <u>% Cover</u>	Dominan Species?		All recommendations and production of	Test worksheet ominant Species		
1.					_	That Are OB	L, FACW, or FAC	O:	2 (A)
3.								()	
4.						Total Numbe	r of Dominant		
7.						Species Acro	oss All Strata:		2 (B)
Conline/Charle Ct.		Total Cover:	0						
Sapling/Shrub Stratum (PI	ot size: 30 ft)					Percent of De	ominant Species	k	
1. Rubus armeniacus			15	Yes	FAC	That Are OB	L, FACW, or FAC	D :	100% (A/B)
2.					_	Prevalence	Index workshee	et:	
3.						Total %	Cover of:		Multiply by:
4				-	-	OBL species	0	x 1 =	
5				<i>y</i>	- (FACW specie	es 0	x 2 =	
		Total Cover:	15			FAC species		x 3 =	324
Herb Stratum (Plot size: 5	ft)			•		FACU specie	-	x 4 =	16
Agrostis species			88	Yes	FAC	UPL species		x 5 =	
2. Hypochaeris radicata			2	No No	FACU	Column Tota			340 (B)
3. Schedonorus arundina	CAUS		5	-					-
4. Taraxacum officinale				. No	FAC		Prevalence Index		3.04
Trifolium species			2	. <u>No</u>	FACU		Rapid Test for H		Vegetation
6.			3	. <u>No</u>	FACW to UPI		Dominance Test		
							Prevalence Inde	x is ≤3.0 ¹	
7.							Morphological Ada		
8.					_		data in Remarks or	on a separa	te sheet)
		Total Cover:	100				Wetland Non-Va	scular Plan	ıts ¹
Woody Vine Stratum (Plo	ot Size: 5 ft)						Problematic Hydro	phytic Vegeta	ation ^I (Explain)
1.				t.		Indicators of h	ydric soil and wetla	and hydrology	v must he
2.				-	•	present.	yano son ana none	ina nyarologi	indot bo
		Total Cover:	0		_	Hydrophytic	: Vegetation		
% Bare Ground in Herb St	ratum	0	%	-		Present?	Yes	XNo	0
Remarks:									
		8		Does r	not meet Preva	lence Index			
				_ 555 (

SOIL	•							mpling Point: G-4
Profil	le Description: (Descr	ribe to the d	epth needed to	documen	t the indicator	or confirm th	he absence of indicators.)	
Depth	Matrix				Features			
in.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 3/3	100					sandy loam	many fine roots
-11	10YR 4/2	100					sandy loam	much gravel
	10YR 4/2	95	10YR 4/6	5		M	sandy loam	much gravel
- 14	1011(4/2		101111110		-			. *
							9	
_								
					_			
					-			
					_			
	C=Concentration, D=Deple				Pore Lining, RC=F	Root Channel, N		
ydric	Soil Indicators: (App	licable to all	LRRs, unless of	therwise	noted.)		Indicators for Problems	atic Hydric Soils*:
	Histosol (A1)		San	dy Redox	(S5)		2 cm Muck	(A10)
	Histic Epipedon (A2)		Strip	ped Matri	ix (S6)		Red Parent	Material (TF2)
	Black Histic (A3)		Loa	my Mucky	/ Mineral (F1) (e	xcept MLRA	1) Very shallow	v dark surface (TF12)
	Hydrogen Sulfide (A4)				d Matrix (F2)			ain in Remarks)
				leted Matr				*
	Depleted Below Dark S							
	Thick Dark Surface (A1		***************************************		Surface (F6)	3	Indicators of hydrophytic veg	etation and
	Sandy Mucky Mineral (k Surface (F7)			
-	Sandy Gleyed Matrix (S	S4)	Red	ox Depres	ssions (F8)		wetland hydrology must be	present.
emarl	<s:< th=""><th></th><th>Shovel re</th><th>fusal due</th><th>to dry soils and</th><th>gravel at 14</th><th>inches. Gravel increases wi</th><th>th depth.</th></s:<>		Shovel re	fusal due	to dry soils and	gravel at 14	inches. Gravel increases wi	th depth.
YDR	ROLOGY							
etlan	d Hydrology Indicator	rs:			-			
imary	/ Indicators (any one inc	dicator is suff	icient)				Secondary Indicators (2	
	Surface Water (A1)		Wate	r-Stained L	eaves (B9) (excep	it NW coast)	Water-Stained I	_eaves (B9) (NW coast)
	High Water Table (A2)		Salt	Crust (B1	1)		Drainage Patter	ns (B10)
	Saturation (A3)				ebrates (B13)	5	Dry-Season Wa	ter Table (C2)
	Water Marks (B1)				fide Odor (C1)		Saturation Visib	le on Aerial Imagery (C9)
		- ;			pheres along Livin	n Roots (C3)	Geomorphic Po	
	Sediment Deposits (B2)	,			leduced Iron (C4		Shallow Aquitar	-
	Drift Deposits (B3)	,					Frost-Heave Hu	
	Algal Mat or Crust (B4)	,			eduction in Tille		- Constant	
	Iron Deposits (B5)				essed Plants (D	1) (LKK A)	FAC-Neutral Te	st (D5) inds (D6) (LRR A)
	Surface Soil Cracks (B6				in Remarks)	(00)		, ,
!	Inundation Visible on Aerial	I Imagery (B7)	Spars	ely Vegetai	ited Concave Surfa	ice (Bp)		
eld O	bservations:							100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Water Present?	Yes	No	X	Depth (in):			
ater T	able Present?	Yes	No	X	Depth (in):		Wetland Hydro	
aturati	ion Present?	Yes	No	X	Depth (in):		Yes	No X
clude	es capillary fringe)	•						
scrib	e Recorded Data (stream							
emark	(6.	So	il profile is dry al	the way	to bottom. Top	approximatel	y 1/2 inch is slightly moist fro	om recent rainfall.

Project/Site:	Cedarbrook Si	te			City/County:	Kina	Sampling	Date:	9/6/2	016
Applicant/Owner:	Seattle Public	Schools			State:		Sampling		H-	
Investigator(s):	Katharine Lee	, Kate Machata	3		Section/Town		S4 T26N R4E			
Landform (hillslope, terrace			swale		•	Local relief:		Slope (%	%): 0.01	
Subregion (LRR):	Α -	Lat:	47.7	764662	Lona:	-122.307687		Datu		GS 84
Soil Map Unit Name:	Not Mapped					classification:	upland			
Are climatic / hydrologic co	nditions on the	site typical for	this time of y	ear?	•	X No		plain in R	emarks)	
Are Vegetation	2	or Hydrology		significantly d	isturhed?	Are "Normal Ci				
Are Vegetation	'					present? (If need		V	v	
SUMMARY OF FIND		or Hydrology	howing com	naturally prob	iematic?	answers in	remarks)	Yes _	X No	,
Hydrophytic Vegetation Pr	esent?	Yes	X	No Point io	cations, trans	sects, important	reatures, etc.			
Hydric Soil Present?	00011(;	Yes _	<u>x</u>	No	Is the S	Sampled Area				
Wetland Hydrology Preser	nt?	Yes	X	No	- within	a wetland?	Yes X	No		
Remarks:	Plot is located	in a roadside	ditch or swale		s Way					
				a diding i diniii	o rray.					
VEGETATION		***************************************	M9000000000000000000000000000000000000							
			Absolute	Dominan	t Indicator	Dominance	Test worksheet:			
Tree Stratum (Plot size:	30 ft)		% Cover	Species?		Company and the company of the compa	ominant Species			
1					-	That Are OB	L, FACW, or FAC:		1	(A)
2.			(_,	-		- ` ′
3.			•		-	Total Numba	r of Dominant			
4.			2 						4	(D)
		Total Causan			-	Species Acro	ss All Strata:		1	– ^(B)
Sapling/Shrub Stratum (P		Total Cover:	0							
1.	0120. 00 10					1	ominant Species			
2.						That Are OB	L, FACW, or FAC:		100%	(A/B)
3.			-			Company of the Compan	Index worksheet:	(
			-		-	Total %	Cover of:		Multi	iply by:
4						OBL species	0 x	1 =		
5						FACW speci	es 0 x	2 =	-	_
		Total Cover:	0			FAC species	91 x	3 =	273	_
Herb Stratum (Plot size: 5	ft)			•		FACU specie	es 3 x	4 =	12	-
Agrostis species			85	Yes	FAC	UPL species		5 =	-	-
2. Trifolium species			8	No	FACW to UF	. 1			285	- (B)
3. Ranunculus repens			2	No	FAC		Prevalence Index			3.03
Equisetum arvense		***************************************	2							
5. Holcus lanatus				No No	FAC		Rapid Test for Hy		; vegeta	lion
			2	No	FAC	-	Dominance Test is			
6. Hypochaeris radicata 7.	-		3	No	FACU		Prevalence Index	is ≤3.01		
				-	-		Morphological Adapt			
8.		THE STATE OF THE S	***	-			data in Remarks or o	n a separ	ate sheet)
		Total Cover:	102	_			Wetland Non-Vas	cular Pla	ants 1	
Woody Vine Stratum (Plo	ot Size: 5 ft)			-			Problematic Hydroph	ytic Vege	etation ¹ (E:	xplain)
1						Indicators of h	ydric soil and wetlan	d hydrolo	av must 1	ne
2.			,	-	_	present.	yane son and wedan	a myarolo	gy maor i	,,
		Total Cover:	0	7	-	Hydrophytic	Vegetation			
% Bare Ground in Herb SI	tratum		%	=		Present?	Yes	X	No	
Remarks:										
ixemains.				i i						
		*	V	Vetland is alon	ig roadside an	nd is regularly mov	ved.			
1										

SOIL	79 0 5 7						mpling Point: H-5
		pth needed to			or confirm th	he absence of indicators.)	
epthMatri				Features Type ¹	Loc ²	Toyturo	Remarks
.) Color (moist)	%	Color (moist)	%	Туре	LUC	Texture sandy loam	remarks
0-3 10YR 3/1	100					sandy loam	some gravel
10 10YR 4/1	95	10YR 4/6	5	<u> </u>	M		some gravel
18 10YR 4/2	80	10YR 5/6	20		M	sandy loam	Some graver
e: C=Concentration, D=D	epletion, RM=Redu	ced Malrix. ² Loo	cation: PL=F	Pore Lining, RC=F	Root Channel, M	M=Matrix.	
dric Soil Indicators: (A			therwise	noted.)		Indicators for Problem	atic Hydric Soils³:
Histosol (A1)			dy Redox (2 cm Muck	(A10)
Histic Epipedon (A2	2)		ped Matrix			Red Parent	Material (TF2)
	-/			Mineral (F1) (e:	cept MLRA	1) Very shallow	w dark surface (TF12)
Black Histic (A3)	ΔΔ)			Matrix (F2)			ain in Remarks)
Hydrogen Sulfide (/		Printers Yangi	leted Matri			, — · · ·	*2 *2
Depleted Below Da							
Thick Dark Surface			ox Dark Su	Surface (F7)	3	Indicators of hydrophytic veg	getation and
Sandy Mucky Mine						wetland hydrology must be	
Sandy Gleyed Matr	ix (S4)	Red	ox Depress	sions (F6)		welland flydrology must be	procent
neth						Yes X	No
/DROLOGY		iciont)	-			Secondary Indicators (2)	or more required)
mary Indicators (any one			. Otaland I a	auga (PO) (ayaan	(tagest)		Leaves (B9) (NW coast)
Surface Water (A1)	•			aves (B9) (excep	LINV COASI)	X Drainage Patte	
High Water Table (A	1 2)		Crust (B11			Dry-Season Wa	
Saturation (A3)	1-			brates (B13)			ole on Aerial Imagery (C9)
Water Marks (B1)) -			de Odor (C1)			
Sediment Deposits	(B2)			heres along Livin		X Geomorphic Po	
Drift Deposits (B3)	-			educed Iron (C4		Shallow Aquitai	
Algal Mat or Crust (I	B4)			duction in Tilled		Frost-Heave Hu	
Iron Deposits (B5)	2			ssed Plants (D	1) (LRR A)	FAC-Neutral Te	est (D5) unds (D6) (LRR A)
Surface Soil Cracks				in Remarks)	(DC)		(50) (2.1117)
Inundation Visible on A	erial Imagery (B7)	Spars	sely Vegetate	ed Concave Surfa	ce (88)		
d Observations:				2000			
face Water Present?	Yes _	No	X	Depth (in):		141-11	Jamy Brannia
ter Table Present?	Yes	No	X	Depth (in):	>18	Wetland Hydro	
uration Present?	Yes	No	X	Depth (in):	>18	Yes X	No
cludes capillary fringe)		sulfaring wall as	rial photos	nravious insp	ections) if a	vailable:	
scribe Recorded Data (s	stream gauge, mo	onitoring well, a					
marks:				Moist througho	ut entire dep	th of soil profile.	

Project/Site:	Cedarbrook S	Site			City/County:	King	Sampling	Date:	9/6/2	2016
Applicant/Owner:	Seattle Public	c Schools	***************************************		State:		Sampling	_	C	
Investigator(s):		e, Kate Machat	a	Carrier o		/nship/Range:	S4 T26N R4E	_		-
Landform (hillslope, terrace	etc.):		swale		b	Local relief:	concave	Slope (%	%)· 0 01	
Subregion (LRR):	Α .	Lat:	47.7	64673	Lona:	-122.307769		Datu		/GS 84
Soil Map Unit Name:	Not Mapped	•				classification:	upland	Duta		
Are climatic / hydrologic co	nditions on the	e site typical for	this time of ye	ear?	Yes			oplain in R	emarks)	
Are Vegetation	_	, or Hydrology		significantly di		Are "Normal C present? (If need	ircumstances"			
Are Vegetation	,Soil	, or Hydrology		naturally probl	lematic?	answers in	remarks)	Yes	X No	0
SUMMARY OF FIND	NGS - Atta	ach site map s	howing sam	pling point lo	cations, tran	sects, importan	t features, etc.	1		-
riyuropriytic vegetation Pr	esent?	Yes	Х	No						
Hydric Soil Present?		Yes _	Х	No	10 SUPPLE DOL	Sampled Area				
Wetland Hydrology Preser	nt?	Yes		No X	Within	ra welland?	Yes	No	X	
Remarks:	Plot is locate	d near edge of	roadside swa	le between roa	ad and parkin	ng lot. Plot H-6 is	about 15 feet west	of plot h	1-5	
VEGETATION										
Tree Stratum (Plot size: 3	20.60		Absolute	Dominant		200	Test worksheet:			
1.	30 π)		% Cover	Species?	Status	Number of D	Oominant Species			
2.						That Are OB	L, FACW, or FAC:	_	1	_ (A)
3.				-		_				
4.					-	Total Numbe	er of Dominant			
7.						Species Acre	oss All Strata:		1	(B)
0 1 101		Total Cover:	0					-		_
Sapling/Shrub Stratum (PI	ot size: 30 ft)					Percent of D	ominant Species			
1						That Are OB	L, FACW, or FAC:		100%	(A/B)
2.	0.00					-	Index worksheet:			
3.						Total %	Cover of:		Multi	iply by:
4.						- OBL species	. 0 v	1 =		
5.			***************************************			FACW species	-	2 =	*	-
		Total Cover:	0			- FAC species			0.40	_
Herb Stratum (Plot size: 5	ft)	rotal cover,					-		246	-
Agrostis species			0.0			FACU specie				_
2. Holcus lanatus		· · · · · · · · · · · · · · · · · · ·	80	Yes	FAC	UPL species		5 =	-	_
			2	No	FAC	- Column Tota	als: 100 (A	4)	318	(B)
- Type of talloata			10	NoNo	FACU	_	Prevalence Index	= B/A =		3.18
4. Rumex acetosella			8	No	FACU		Rapid Test for Hyd	drophytic	Vegeta	tion
5						X	Dominance Test is	\$ >50%		
6.			No.				Prevalence Index	is ≤3.0 ¹		
7							Morphological Adapta	ations ¹ (Pu	rovida cur	pporting
8.		•	-			- 1	data in Remarks or o	The state of the s	COLUMN TO STATE OF THE STATE OF	
		Total Cover:	100	-		-	Wetland Non-Vaso	las Dia	1	
Woody Vine Stratum (Plo	t Size: 5 ft)	Total Cover.							a care and	
1.	. 0.20. 0 10						Problematic Hydroph	ytic Veget	ation' (Ex	(plain)
2.						Indicators of h present.	nydric soil and wetland	d hydrolog	ly must b)e
		Total Cover:	0	-		Hydrophytic	c Vegetation			
% Bare Ground in Herb Str	ratum	0	%			Present?	Yes	ΧN	lo	
Remarks:										
a		9	Ara = !	n soquiloski == ==	wad D					
			Area I	s regularly mo	wea. Does n	not meet Prevalend	ce index			
l										

OIL								ampling Point: 0
rofil		be to the d	epth needed to			or confirm th	e absence of indicators.)
epth			1,	Redox F		Loc ²	T :	Pomorks
n.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc-	Texture	Remarks many fine roots
8-0	10YR 4/2	100					sandy loam	much gravel
-12	10YR 5/2	99	10YR 4/6	1	C	M	sandy loam	much graver
_								
_					31			
_		14.351						
						, ' · · · · · ·		
-	C=Concentration, D=Deplet				ore Lining, RC=R	oot Channel, M		3
ydric	Soil Indicators: (Appli	cable to al	I LRRs, unless	otherwise n	oted.)		Indicators for Problem	
	Histosol (A1)		Sar	dy Redox (S	S5)		2 cm Muc	
	Histic Epipedon (A2)		Stri	oped Matrix	(S6)			nt Material (TF2)
	Black Histic (A3)		Loa	my Mucky N	Aineral (F1) (ex	cept MLRA	1) Very shall	ow dark surface (TF12)
	Hydrogen Sulfide (A4)		Loa	my Gleyed I	Matrix (F2)		Other (Ex	olain in Remarks)
	Depleted Below Dark S	urface (A11) X Dep	leted Matrix	(F3)			
	Thick Dark Surface (A1)	2)	Red	ox Dark Sur	rface (F6)			
	Sandy Mucky Mineral (S	S1)	Dep	leted Dark S	Surface (F7)	3	Indicators of hydrophytic v	egetation and
	Sandy Gleyed Matrix (S	4)	Red	ox Depress	ions (F8)		wetland hydrology must b	e present.
emark	(S:			Shovel	refusal at 12 in	ches due to v	very dry soil and gravel.	
YDR	OLOGY							
-	d Hydrology Indicators	:		***************************************			-	
	Indicators (any one indi		ficient)				Secondary Indicators (2	2 or more required)
	Surface Water (A1)		Wate	r-Stained Lea	ves (B9) (except	NW coast)	Water-Stained	d Leaves (B9) (NW coast)
	High Water Table (A2)		Salt	Crust (B11)			Drainage Patt	erns (B10)
	Saturation (A3)			atic Inverteb			Dry-Season V	Vater Table (C2)
	Water Marks (B1)		· .		e Odor (C1)	·	Saturation Vis	ible on Aerial Imagery (C9)
	Sediment Deposits (B2)			_	eres along Living	Roots (C3)	Geomorphic F	Position (D2)
	Orift Deposits (B3)	9			duced Iron (C4		Shallow Aquit	ard (D3)
	Algal Mat or Crust (B4)	9			uction in Tilled		Frost-Heave H	lummocks (D4)
					sed Plants (D1		FAC-Neutral 1	Test (D5)
	ron Deposits (B5) Surface Soil Cracks (B6)			r (Explain ir	and the second s	,		ounds (D6) (LRR A)
-	nundation Visible on Aerial I				d Concave Surfa	ce (B8)		
	oservations:	V	N-	~	Depth (in):			
	Water Present? able Present?	Yes.	No No	<u> </u>	Depth (in):	>12"	Wetland Hyd	rology Present?
	on Present?	Yes Yes	No		Depth (in):	>12"	Yes	No X
	es capillary fringe)	1 62						
escrib	e Recorded Data (stream	m gauge, m	onitoring well, as	erial photos,	previous inspe	ections), if av	ailable:	
emark				.,		is very dry th		
Jillai N							-	

roject/Site: Cedarbrook Site					City/County:	King	Sampling [Date:	9/6/20	016
Applicant/Owner:	Seattle Public S	Schools			State:	WA	Sampling F	oint:	A-7	7
Investigator(s):	Katharine Lee,	Kate Machata				/nship/Range:	S4 T26N R4E			
Landform (hillslope, terrace	etc.):	to	e of slope		•	Local relief:		Slope (%)): <1%	
Subregion (LRR):	Α	Lat:		7.765	Lona:	-122.309134		Datum		SS 84
Soil Map Unit Name:	Not Mapped					classification:	upland	Datan		
Are climatic / hydrologic cor		ite typical for th	is time of v	ear?	. Yes	-	(If no, exp	lain in Re	marks)	
Are Vegetation		or Hydrology		significantly di		Are "Normal C present? (If need	ircumstances"	idiii ii i i i i	marks)	
Are Vegetation	,Soil , c	r Hydrology		naturally prob	lematic?	answers in	remarks)	Yes X	(No	
SUMMARY OF FINDI	NGS - Attack	n site map sho	wing sam	pling point lo	cations, trar	nsects, important	t features, etc.		_	
mydrophytic vegetation Pro	esent?	Yes	Х	No						
Hydric Soil Present?		Yes	Х	No		Sampled Area				
Wetland Hydrology Presen	t?	Yes	Х	No	Within	n a wetland?	Yes X	No		_
Remarks:	Plot is located a	at toe of slope t	etween two	creeks.						
VEGETATION			***************************************							
			Absolute	Dominant	Indicator	IDominanco	Test worksheet:			
Tree Stratum (Plot size: 3	0 ft)		% Cover	Species?			ominant Species			
1. Alnus rubra		u ž	60	Yes	FAC	1	L, FACW, or FAC:		6	(A)
2.					- 170	- Illiat Ale Ob	SE, FACVV, OF FAC.			(A)
3.						-				
4.				-	-	- Total Numbe	er of Dominant			
						Species Acre	oss All Strata:	-	7	(B)
C1'101- 1 0:	T	otal Cover:	60							
Sapling/Shrub Stratum (Ple	ot size: 30 ft)					Percent of D	ominant Species			
1. Rubus armeniacus			20	Yes	FAC	That Are OB	L, FACW, or FAC:		86%	(A/B)
Rubus spectabilis		•	20	Yes	FAC	-	Index worksheet:	-		(, , _ /
3.					-	-	Cover of:		Multir	oly by:
4.					-	-		i en		.,, .,, .
5.				-		OBL species				.
				-	-	FACW speci	ies10 x 2	:=		
11-1-01-1-1-1-1		otal Cover:	40			FAC species	117 x 3	; =	351	
Herb Stratum (Plot size: 5	<u>ft)</u>					FACU specie	es 30 x 4	, =	120	
Lysichiton americanus			10	Yes	OBL	UPL species	0 x 5	; =		
2. Equisetum telmateia			10	Yes	FACW	Column Tota	als: 167 (A))	501	(B)
3. Athyrium filix-femina		,	2	No	FAC	-	Prevalence Index =	B/A =		.00
4.				-			Rapid Test for Hydr			
5.			A	-		-			vegetati	1011
6.				-	-	_ <u> </u>	Dominance Test is			
7.				·	-	X	Prevalence Index is	≤3.0'		
						_	Morphological Adaptat			porting
8.							data in Remarks or on	a separat	e sheet)	
		Total Cover:	22				Wetland Non-Vascu	ular Plan	its ¹	
Woody Vine Stratum (Plo	Size: 5 ft)			•		-	Problematic Hydrophyl	tic Vegeta	ation ¹ (Ext	olain)
1. Solanum dulcamara			15	Yes	FAC				•••••••••••••••••••••••••••••••••••••••	•
2. Hedera helix			30	Yes	FACU	present.	nydric soil and wetland	hydrology	must be	9
		Fotal Course			- FACU	_	a Managara da			
% Bare Ground in Herb Str		Fotal Cover: 78 %	45	-		1	c Vegetation			
		78 %				Present?	Yes	X No	<u> </u>	
Remarks:										
										- 1

	le Description: (Describe to the	depth needed to	document the indica	ator or confirm th	e absence of indicate	ors.)	
	Matrix		Redox Features	AVAIL TO AVA			
epth in.)	Color (moist) %	Color (moist)	% Type	e ¹ Loc ²	Texture		Remarks
0-6	10YR 3/1 100	Color (molos)			mucky loam		
-18	2.5N 100				mucky loam	_	
-							
_							
-					A STATE OF THE STA		
-							
_							
- vpe:	C=Concentration, D=Depletion, RM=R	educed Matrix. ² Loc	cation: PL=Pore Lining, I	RC=Root Channel, N	1=Matrix.		
	Soil Indicators: (Applicable to		otherwise noted.)		Indicators for Pro	blematic Hy	dric Soils³:
	Histosol (A1)		dy Redox (S5)		2 cm N	/luck (A10)	
	Histic Epipedon (A2)	Strip	oped Matrix (S6)		Red P	arent Materi	al (TF2)
	Black Histic (A3)		my Mucky Mineral (F	1) (except MLRA	1) Very s	hallow dark	surface (TF12)
	Hydrogen Sulfide (A4)	Loai	my Gleyed Matrix (F2	!)	Other	(Explain in F	temarks)
	Depleted Below Dark Surface (A	11) Dep	leted Matrix (F3)				
	Thick Dark Surface (A12)	·	lox Dark Surface (F6)				
	Sandy Mucky Mineral (S1)		leted Dark Surface (F		ndicators of hydrophyt	ic vegetatior	and
	Sandy Gleyed Matrix (S4)		lox Depressions (F8)		wetland hydrology mu	st be preser	nt.
							A STATE OF THE STA
estri /pe:	ctive Layer (if present):				Hydric So	il Present?	
epth		***************************************			Yes	X	No
emar	KS:						
VDE	ROLOGY						5
	d Hydrology Indicators:						
	y Indicators (any one indicator is s	ufficient)			Secondary Indicato	rs (2 or more	e required)
	Surface Water (A1)		r-Stained Leaves (B9) (e	except NW coast)			(B9) (NW coast)
	High Water Table (A2)	Salt	Crust (B11)		Drainage	Patterns (B1	0)
_	Saturation (A3)		atic Invertebrates (B1	3)	Dry-Seaso	n Water Tal	ole (C2)
	Water Marks (B1)		rogen Sulfide Odor (C		Saturation	Visible on A	erial Imagery (C9)
	Sediment Deposits (B2)		zed Rhizospheres along		Geomorph	ic Position (D2)
	Drift Deposits (B3)		ence of Reduced Iron	-	Shallow A	quitard (D3)	
	Algal Mat or Crust (B4)		ent Iron Reduction in		Frost-Hea	ve Hummocl	(S (D4)
			ted or Stressed Plant			al Test (D5)	
	Iron Deposits (B5) Surface Soil Cracks (B6)		er (Explain in Remarks			t Mounds (D	
	Inundation Visible on Aerial Imagery (B	7) Spars	sely Vegetated Concave	Surface (B8)			
	30000				Т		
			X Depth	(in):			
eld O	bservations:	s No		4/*	1		
eld O	e Water Present? Ye				Wetland H	lydrology P	resent?
eld Ourface	Water Present? Ye Sable Present? Ye	s X No	Depth Depth	(in): 6"	1	lydrology P X	resent? No
eld Ourface ater Taturat	Water Present? Ye Table Present? Ye tion Present? Ye es capillary fringe)	es X No	Depth Depth	(in): 6" (in): surface	Yes		
eld Ourface ater Taturat	Water Present? Ye Fable Present? Ye fon Present? Ye	es X No	Depth Depth	(in): 6" (in): surface	Yes		

Project/Site:	Cedarbrook Si	te		COLCI		City/County:	-	u Coast	Sampling D	Jate.	9/6/2016	
Applicant/Owner:	Seattle Public				,	State:			— Sampling D		A-8	
Investigator(s):		, Kate Machata				Section/Towr			T26N R4E	OII II	A-0	
Landform (hillslope, terrace			steep slope			occion row	Local relief		TOTAL CONTRACTOR OF STREET	 lope (%)	. 0.35	
Subregion (LRR):	Α -	Lat:		764901		Long	-122.309205		S	Datum		1
Soil Map Unit Name:	Not Mapped	Lut.		104301		_	lassification:			Datum		4
Are climatic / hydrologic co		site typical for t	his time of v	ear?		Yes	X No		pland (If no, expl	ain in Par	nacks)	
Are Vegetation	-				U I'-	-	-	nal Circums		alli ili iXeli	iai ks)	
-		or Hydrology	-				present? (If					
Are Vegetation	,Soil	or Hydrology		naturall	ly proble	ematic?	answe	ers in rema	rks)	Yes X	No	
SUMMARY OF FINDI Hydrophytic Vegetation Pro	NGS - Attac	ch site map sh	owing sam		oint loc	ations, trans	sects, impo	rtant featu	res, etc.			
Hydric Soil Present?	esent?	Yes	X	No		Is the S	ampled Are	ea .				
Wetland Hydrology Preser	12	Yes Yes		No	X	1	a wetland?				v	
Remarks:		***************************************				<u> </u>		Ye		No	<u>X</u>	
Tomanio.	feet but at leas	on very steep st 5 feet higher	in elevation	5 feet in	n elevati	on above we	tland. Plot is	s located s	outh from Plot	7 аррго	ximately 10	
VECETATION			III CICVATION.									
VEGETATION												
Tree Stratum (Plot size: 3	10 EV		Absolute		minant	Indicator	-1- 2000		worksheet:			
1. Thuja plicata	ю пу		% Cover		ecies?	Status		r of Domina				
2. Alnus rubra			50		Yes	FAC	That Are	e OBL, FAC	CW, or FAC:		4 (A)	
3.		-	30		Yes	FAC						
		***************************************					Total Nu	umber of D	ominant			
4.							Species	Across All	Strata:		5 (B)	
		Total Cover:	80							(-		
Sapling/Shrub Stratum (Ple	ot size: 30 ft)		-	•			Percent	of Domina	nt Species			
1. Acer circinatum			50		Yes	FAC			CW, or FAC:		80% (A/E	21
2. Prunus laurocerasus			5	-	No	NOL			worksheet:		3070 (AVE	2)
3. Thuja plicata					N 1993			tal % Cove			Multiply b	
4. Aesculus species			10		No	FAC		×			Multiply b	Y
5.			1		No	NOL	OBL spe		0 x 1	=		
J							FACW	species	0 x 2	=		
		Total Cover:	66	•			FAC spe	ecies	160 x 3	=	480	
Herb Stratum (Plot size: 5	ft)						FACU s	pecies	80 x 4	=	320	
Athyrium filix-femina			20		Yes	FAC	UPL spe	ecies	0 x 5	=		
2				-			Column	Totals:	240 (A)		800 (B)	
3.				-			- 1	Preval	ence Index =		3.33	
4.			-						Test for Hydro			
5.						-	×	-	nance Test is >		ogotation	
6.		-	***************************************					-				
7.								– Preva	lence Index is	≤3.01		
8.			-						ological Adaptation			ıg
0.								data in -	Remarks or on a	a separate	sneet)	
		Total Cover:	20	_				Wetla	nd Non-Vascu	lar Plant	.s ¹	
Woody Vine Stratum (Plo	Size: 5 ft)							Probler	matic Hydrophyti	c Vegetat	ion ^l (Explain))
Hedera helix			80		Yes	FACU	1 Indicator	– rs of hydric s	oil and wetland h	nydrology	must he	,
2			***************************************				present.	io oi ilyano o	on and modalia i	iyarology	must bo	
		Total Cover:	80				Hydrop	hytic Vege	etation			
% Bare Ground in Herb Str	atum	5 %	-	-			Present			X No		
Remarks:	-							=4				
Remarks:	Also about 5	percent cover	hy an unida	atified or	rnamani	علائين طيعطم لما		ere co	C 2 28		0	
	about 3	percent cover	by an unitel	imed Of	пашеп	the herb lay		o iisting. H	euera nelix ma	ikes up t	ne majority	Οľ

SOIL							Sampl	ing Point: A-8
Profi	e Description: (Describe	to the depth n	eeded to doci	ument the	e indicator	or confirm the	absence of indicators.)	
	Matrix			Redox Fea				
Depth (in.)	Color (moist)	% Color	(moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/1	100					silt loam	
—							-	
_						B-11		
_								. 1
				1				
1	C=Concentration, D=Depletion	PM=Peduced Ma	atrix 21 ocation	n: PL=Pore	Lining, RC=F	Root Channel, M=	=Matrix.	
	Soil Indicators: (Applica						Indicators for Problematic	: Hydric Soils ³ :
пуата		DIC to all Elvis		Redox (S5			2 cm Muck (A1	
	Histosol (A1)			Matrix (S			Red Parent Ma	iterial (TF2)
	Histic Epipedon (A2)		The second secon			xcept MLRA 1		ark surface (TF12)
	Black Histic (A3)						Other (Explain	
	Hydrogen Sulfide (A4)			Gleyed Ma				#####################################
	Depleted Below Dark Surf	ace (A11)	· ·	d Matrix (I				
	Thick Dark Surface (A12)			ark Surfa		3 _{lm}	ndicators of hydrophytic veget	ation and
	Sandy Mucky Mineral (S1)				ırface (F7)		wetland hydrology must be pro	
	Sandy Gleyed Matrix (S4)		Redox L	Depression	IIS (FO)		Wettaria flydrology maet 20 p.	
Restri	ctive Layer (if present):						Hadria Cail Broom	unt?
Type:							Hydric Soil Prese	No X
Depth								
Remar	ks:	. :- III	any ataon alan	o Soilis	very dry wit	h many roots	It was too difficult to excavate	soil pit beyond 8 inches
	pio	t is located on v	ery steep stop	e. 30ii is	very dry wit	Trinding roote.		
HYDF	ROLOGY							
	d Hydrology Indicators:							
Primar	y Indicators (any one indica	tor is sufficient)					Secondary Indicators (2 or	
	Surface Water (A1)		Water-Sta	ined Leave	es (B9) (excep	t NW coast)		aves (B9) (NW coast)
	High Water Table (A2)		Salt Crus	st (B11)			Drainage Patterns	
	Saturation (A3)		Aquatic	Invertebra	ates (B13)		Dry-Season Water	
	Water Marks (B1)		Hydroge	n Sulfide	Odor (C1)			on Aerial Imagery (C9)
	Sediment Deposits (B2)		Oxidized I	Rhizospher	es along Livin	g Roots (C3)	Geomorphic Posit	on (D2)
	Drift Deposits (B3)	-	Presence	e of Redu	iced Iron (C	4)	Shallow Aquitard (D3)
	Algal Mat or Crust (B4)				ction in Tille		Frost-Heave Humi	mocks (D4)
	Iron Deposits (B5)				ed Plants (D		FAC-Neutral Test	(D5)
	Surface Soil Cracks (B6)	-	Other (E	xplain in l	Remarks)		Raised Ant Mound	ls (D6) (LRR A)
	Inundation Visible on Aerial Ima	agery (B7)	Sparsely \	√egetated (Concave Surfa	ace (B8)		
rial-10	bacquations						T	
	bservations: Water Present?	Yes	No >	(Depth (in):			
	Fable Present?	Yes	No >		Depth (in):		Wetland Hydrolo	
	ion Present?	Yes	No >		Depth (in):		Yes	NoX
(includ	es capillary fringe)							
Descri	be Recorded Data (stream	gauge, monitori	ng well, aerial	photos, p	orevious insp	ections), if ava	allable:	
Remar	ks:	Soil is v	ery dry. Plot i	s located	on very stee	p slope about	5 feet in elevation above wet	and boundary.

Project/Site:	Cedarbrook S	Site			City/County:	King	Sampling	Date:	9/6/2	2016
Applicant/Owner:	Seattle Public	Schools			State:		Sampling	_	B-	
Investigator(s):	Katharine Lee	e, Kate Machata				/nship/Range:	S4 T26N R4E			
Landform (hillslope, terraci	e etc.):		hillslope			Local relief:		Slope (%	۵۱· 15	
Subregion (LRR):	Α -	Lat:		764993	l ona:	-122.308632		Datu		GS 84
Soil Map Unit Name:	Not Mapped					classification:	upland	Satu		
Are climatic / hydrologic co		site typical for t	his time of y	ear?		X No		plain in Re	emarks)	
Are Vegetation	0 "	, or Hydrology		significantly d		Are "Normal Cir present? (If neede	cumstances"	piant in th	omarkoj	
Are Vegetation	,Soil_	, or Hydrology		naturally prob	lematic?	answers in	remarks)	Yes 2	X No	0
SUMMARY OF FIND	INGS - Atta	ich site map sh	owing sam	pling point lo	cations, tran	sects, important	features, etc.			
riyaropriyac vegetallori Pi	resent?	Yes	Х	No	1					***************************************
Hydric Soil Present?		Yes	Х	No		Sampled Area				
Wetland Hydrology Prese	nt?	Yes		No X	- Willin	n a wetland?	Yes	No	Χ	
Remarks:	Plot 9 is about	ut 4 feet higher in	n elevation a	nd about 15 fe	et south of F	Plot 10.				=
VEGETATION										
			Absolute	Dominani	t Indicator	Dominance T	est worksheet:			
<u>Tree Stratum</u> (Plot size: 1.	30 ft)		% Cover	Species?			minant Species			
2.						That Are OBL	, FACW, or FAC:		1	(A)
3.					-	-				
4.						Total Number	of Dominant			
						Species Acros	ss All Strata:	_	1	_ (B)
Sapling/Shrub Stratum (P	lot size: 30 ft)	Total Cover:								
1.	or 3126. 30 H)					Percent of Do	minant Species			
2.			***************************************			That Are OBL	, FACW, or FAC:		<u>100%</u>	(A/B)
3.						Prevalence Ir	ndex worksheet:			
					- 001 //	Total % (Cover of:		Multi	iply by:
4						OBL species	0 ×	1 =		
5.						FACW specie	s 0 x :	2 =		-
		Total Cover:	0		•	FAC species	86 x	3 =	258	_
Herb Stratum (Plot size: 5	ft)					FACU species	-		56	-
 Agrostis species 			86	Yes	FAC	UPL species	0 x			-
2. Taraxacum officinale			4	No	FACU	-				- (5)
Hypochaeris radicata				-	-	- Column Totals				(B)
4.			10	No	FACU	- P	revalence Index =	= B/A =		3.14
5.					-	. R	Rapid Test for Hyd	rophytic	Vegeta	tion
						X	ominance Test is	>50%		
6.						P	revalence Index i	s ≤3.0 ¹		
7.							lorphological Adapta	tions ¹ (Pr	ovide sur	norting
8.					-		ata in Remarks or or			
		Total Cover:	100			- _\	Vetland Non-Vasc	udar Plai	nte 1	
Woody Vine Stratum (Plo	t Size: 5 ft)			•					1000	!-:->
1.						P	roblematic Hydrophy	/tic veget	ation (E)	(plain)
2.						Indicators of hy present.	dric soil and wetland	i hydrolog	y must b	e
				-						
% Bare Ground in Herb St	ratum	Total Cover:	0			Hydrophytic	•			
The Country of the Country of	aturi	0 %)			Present?	Yes	<u>X</u> N	٥	-
Remarks:										
				Does n	ot meet Prev	alence Index				
9					4500 457					

SOIL								Sampling Point:	B-9
Profil	le Description: (Describ	e to the de	pth needed to	document	the indicator of	r confirm th	e absence of indicator	s.)	
Depth	Matrix				Features				
(in.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Rema	
0-6	10YR 4/2	100					sandy loam	many fine roots	S
6-13	10YR 5/2	98	10YR 4/4	2	С	M	sandy loam	some gravel	
		-							4
						,			
			_					-	
1Type:	C=Concentration, D=Depletion	n, RM=Reduc	ced Matrix. ² Loc	cation: PL=F	Pore Lining, RC=R	oot Channel, M	/I=Matrix.		
	Soil Indicators: (Applic			therwise	noted.)		Indicators for Prob	lematic Hydric Soils ³ :	
•	Histosol (A1)			dy Redox			2 cm M	uck (A10)	
	Histic Epipedon (A2)	-	Strip	ped Matri	x (S6)		Red Pa	rent Material (TF2)	
	Black Histic (A3)	-	Loa	my Mucky	Mineral (F1) (ex	cept MLRA	1) Very sh	allow dark surface (TF1:	2)
	Hydrogen Sulfide (A4)		Loa	my Gleyed	Matrix (F2)		Other (E	Explain in Remarks)	
	Depleted Below Dark Sur	- face (A11)		leted Matr					
	Thick Dark Surface (A12)		·		urface (F6)				
	Sandy Mucky Mineral (S				Surface (F7)	3	Indicators of hydrophytic	vegetation and	
	Sandy Gleyed Matrix (S4	-	Red	ox Depres	sions (F8)		wetland hydrology mus	t be present.	
		<u>-</u>					П		
	ctive Layer (if present):						Hydric Soi	I Present?	
Type: Depth			221	***************************************				K No	
	ROLOGY								
	y Indicators (any one indic		cient)				Secondary Indicators	(2 or more required)	
	Surface Water (A1)			r-Stained Le	eaves (B9) (except	NW coast)	Water-Stair	ned Leaves (B9) (NW c o	oast)
	High Water Table (A2)	-		Crust (B1		*	Drainage P	atterns (B10)	
	Saturation (A3)	-			ebrates (B13)		Dry-Seasor	n Water Table (C2)	
	Water Marks (B1)	_			ide Odor (C1)		Saturation '	Visible on Aerial Imager	y (C9)
	Sediment Deposits (B2)	-			oheres along Living	Roots (C3)	Geomorphi	c Position (D2)	
	Drift Deposits (B3)	-			educed Iron (C4		Shallow Aq	uitard (D3)	
	Algal Mat or Crust (B4)				eduction in Tilled		Frost-Heav	e Hummocks (D4)	
	Iron Deposits (B5)	-			essed Plants (D1		FAC-Neutra	al Test (D5)	
	Surface Soil Cracks (B6)	-			in Remarks)		Raised Ant	Mounds (D6) (LRR A)	
	Inundation Visible on Aerial In	nagery (B7)	Spar	sely Vegetal	ted Concave Surfa	ce (B8)			
:iold 0	Observations:								
	Water Present?	Yes	No	X	Depth (in):				
	Table Present?	Yes	No _	×	Depth (in):		Wetland H	ydrology Present?	
	ion Present?	Yes _	No	X	Depth (in):		Yes	No X	
(include	es capillary fringe)	-					l labeled		
Describ	be Recorded Data (stream	gauge, mo	onitoring well, a	erial photo	s, previous insp	ections), if av	valiable:		
Domar	lia.					soil dry			

Project/Site:	Cedarbrook S	Site			City/County:	Kina	Sampling	Date:	9/6/2	016
Applicant/Owner:	Seattle Public	c Schools			State: 1		Sampling		B-1	
Investigator(s):		e, Kate Machata			Section/Town		S4 T26N R4E	_		
Landform (hillslope, terrace	e etc.):		0		•	Local relief:	0	Slope (%	%): 0	
Subregion (LRR):	Α .	Lat:	47.	765035	Long:	-122.308627		Datu	-	GS 84
Soil Map Unit Name:	Not Mapped					lassification:	upland			
Are climatic / hydrologic co	onditions on the	site typical for the	nis time of y	ear?	Yes	X No		xplain in R	emarks)	
Are Vegetation	,Soil	, or Hydrology		significantly d	isturbed?	Are "Normal Cir				
Are Vegetation	,Soil	, or Hydrology		naturally prob	lematic?	present? (If need answers in	remarks)	Yes	X No)
SUMMARY OF FIND	INGS - Atta	ach site map sh	owing sam	pling point lo	cations, trans	sects, important	features, etc.	_		
hydrophytic vegetation Pi	resent?	Yes	Х	No	100000000000000000000000000000000000000					
Hydric Soil Present?		Yes	Х	No		ampled Area a wetland?				
Wetland Hydrology Preser	nt?	Yes	Х	No	. Widini	a wettand:	Yes X	No_		
Remarks:										***************************************
VEGETATION										
Tree Stratum (Plot size:	30 ft)		Absolute <u>% Cover</u>	Dominant Species?		(i) (in-10)-(months)(min) (i)	Test worksheet: ominant Species			
1.						That Are OBL	, FACW, or FAC	:	3	(A)
2.								_		_
3.						Total Number	of Dominant			
T					•	Species Acro	ss All Strata:	_	3	(B)
Sapling/Shrub Stratum (P	lat - to a day	Total Cover:	0							
1.	iot size: 30 ft)					Percent of Do	minant Species			
2.						That Are OBL	, FACW, or FAC:	i.	<u>100%</u>	(A/B)
•						Prevalence I	ndex worksheet	:		
3.			Variable			Total %	Cover of:		Multi	ply by:
4						OBL species	0 ×	1 =		
5					-	FACW specie	es 5 x	2 =	10	-
		Total Cover:	0			FAC species	135 ×	3 =	405	-
Herb Stratum (Plot size: 5	ft)			•		FACU specie	s 15 x	4 =	60	-
1. Ranunculus repens			40	Yes	FAC	UPL species		5 =	-	-
2. Juncus tenuis			50	Yes	FAC	Column Total			475	- (B)
3. Taraxacum officinale			5	No No	FACU		revalence Index			3.06
4. Holcus lanatus	,	***************************************	35	Yes	FAC		Rapid Test for Hy			
5. Hypochaeris radicata		***************************************	5	No	FACU		Dominance Test is			
6. Juncus effusus			5	No	FACW		Prevalence Index			
7. Trifolium pratense			5	No No	FACU					
8. Agrostis species			10	No No	FAC		Norphological Adapt lata in Remarks or c			
		Total Cover:	155	- 110		 	Vetland Non-Vas	aulas Dis	mto 1	
Woody Vine Stratum (Plo	ot Size: 5 ft)	Total Gover.		-			Problematic Hydroph			
1.										
2.			1	-		Indicators of hy present.	dric soil and wetlan	d hydrolog	gy must b	e
		Total Cover:	0	-		Hydrophytic	Vegetation			
% Bare Ground in Herb St	ratum	0 %		-		Present?	Yes	X	lo	
Remarks:		-					, and			
*			Alea 10/	gover cook to	Dlanta 1-					
			AISO 1%	cover each by	riantago land	ceolata and Planta	igo major.			

Depth			icptii necucu to	uocument n	ile indicator	or committee	e absence of indicators	7
рертп	Matrix		•	Redox Fe				
in.)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7	10YR 4/1	99	7.5YR 4/4	1	С	PL	silt loam	some organic matter
-11	10YR 4/1	98	10YR 4/4	2	C	M	sandy loam	many roots
	10YR 4/1	95	7.5YR 4/4	5	С	М	sandy loam	more sand
								1
_								
_								
_			21	-ti DI-Da	Lisias BC=E	Post Channel M	I-Matrix	
	C=Concentration, D=Deplet : Soil Indicators: (Appl	and the second second				Root Channel, M	Indicators for Proble	matic Hydric Soils ³ :
yarıc		icable to a		dy Redox (S			2 cm Muc	
	Histosol (A1) Histic Epipedon (A2)			oped Matrix (nt Material (TF2)
	Black Histic (A3)				2 2	cept MLRA	()	low dark surface (TF12)
	Hydrogen Sulfide (A4)			my Gleyed M		•		plain in Remarks)
	Depleted Below Dark S	urface (A11	-	leted Matrix			(Company)	
	Thick Dark Surface (A1		·	ox Dark Surf				
	Sandy Mucky Mineral (-	leted Dark S	(E. (C.)	3	ndicators of hydrophytic v	regetation and
	Sandy Gleyed Matrix (S		Red	ox Depressio	ons (F8)		wetland hydrology must l	be present.
aatri	ative Layer (if present):							1
ype:	ctive Layer (if present):						Hydric Soil F	Present?
							i iyano oon i	
							Yes X	No
YDF retlan	kS: ROLOGY d Hydrology Indicators		(faloat)				Yes X	No
YDF etlan	ROLOGY d Hydrology Indicators v Indicators (any one ind			Chinal	See (PO) (except	NIW coast)	Yes X Secondary Indicators (No 2 or more required)
YDF etlan	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1)		Wate		res (B9) (except	t NW coast)	Yes X Secondary Indicators (Water-Staine	No
YDF etlan	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2)		Wate	Crust (B11)		t NW coast)	Yes X Secondary Indicators (Water-Staine Drainage Pat	No
YDF etlan iman	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3)		Wate Salt Aqua	Crust (B11) atic Invertebr	rates (B13)	t NW coast)	Secondary Indicators (Water-Staine Drainage Pat	2 or more required) d Leaves (B9) (NW coast) terns (B10) Nater Table (C2)
YDF etlan iman	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Wate Salt Aque Hydr	Crust (B11) atic Invertebr ogen Sulfide	rates (B13) Odor (C1)		Secondary Indicators (Water-Staine Drainage Pat	2 or more required) d Leaves (B9) (NW coast) terns (B10) Vater Table (C2) sible on Aerial Imagery (C9)
YDF retlan	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)		Wate Salt Aqua Hydr	Crust (B11) atic Invertebr ogen Sulfide zed Rhizosphe	rates (B13) Odor (C1) eres along Living	g Roots (C3)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis	No
emar YDF Yetlan riman X	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Wate Salt Aqua Hydr Oxidi:	Crust (B11) atic Invertebr rogen Sulfide zed Rhizosphe ence of Redu	rates (B13) Odor (C1) eres along Living uced Iron (C4	g Roots (C3)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	No
YDF Vetlan	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Wate Salt Aqua Hydr Oxidi Pres	Crust (B11) atic Invertebr ogen Sulfide zed Rhizosphe ence of Redu	rates (B13) Odor (C1) eres along Living	g Roots (C3)) I Soils (C6)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit	No
YDF /etlan X X	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	icator is suf	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun	Crust (B11) atic Invertebr ogen Sulfide zed Rhizosphe ence of Redu	rates (B13) c Odor (C1) cres along Living uced Iron (C4 uction in Tilled sed Plants (D	g Roots (C3)) I Soils (C6)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral	No
YDF YDF etlan X X	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	icator is suf	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun Othe	Crust (B11) atic Invertebr ogen Sulfide zed Rhizosphe ence of Redu ent Iron Redu ted or Stress r (Explain in	rates (B13) c Odor (C1) cres along Living uced Iron (C4 uction in Tilled sed Plants (D	g Roots (C3)) I Soils (C6) I) (LRR A)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral	No
YDF Yetlan X X	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	icator is suf	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun Othe	Crust (B11) atic Invertebr ogen Sulfide zed Rhizosphe ence of Redu ent Iron Redu ted or Stress r (Explain in	rates (B13) c Odor (C1) eres along Living uced Iron (C4 uction in Tilled and Plants (D1 Remarks)	g Roots (C3)) I Soils (C6) I) (LRR A)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral	No
YDF/etlanniman	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Irron Deposits (B5) Surface Soil Cracks (B6) nundation Visible on Aerial	icator is suf	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun Othe	Crust (B11) atic Invertebr ogen Sulfide zed Rhizosphe ence of Redu ent Iron Redu ted or Stress r (Explain in	rates (B13) c Odor (C1) eres along Living uced Iron (C4 uction in Tilled and Plants (D1 Remarks)	g Roots (C3)) I Soils (C6) I) (LRR A)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral Raised Ant M	No
IYDF /etlan X X	ROLOGY d Hydrology Indicators r Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) nundation Visible on Aerial	i <u>cator is suf</u>	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun Othe	Crust (B11) atic Invertebr rogen Sulfide zed Rhizosphe ence of Redi ent Iron Redu ted or Stress r (Explain in rely Vegetated	rates (B13) c Odor (C1) cres along Living uced Iron (C4 uction in Tillec sed Plants (D' Remarks) Concave Surfa	g Roots (C3)) I Soils (C6) I) (LRR A)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral Raised Ant M	No
Nemari Netian X X X	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) nundation Visible on Aerial bservations: Water Present? iable Present?	icator is suf	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun Othe Spars	Crust (B11) atic Invertebr rogen Sulfide zed Rhizosphe ence of Redi ent Iron Redu ted or Stress r (Explain in rely Vegetated	rates (B13) c Odor (C1) cres along Living uced Iron (C4 uction in Tillec sed Plants (D' Remarks) Concave Surfa	g Roots (C3)) I Soils (C6) I) (LRR A) ce (B8)	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral Raised Ant M	No
X X X ield O urfacee vater T aturati	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) nundation Visible on Aerial bservations: Water Present?) Imagery (B7) Yes Yes Yes	Wate Salt Aqua Hydr Oxidi: Pres Rece Stun Othe Spars No X No X No	Crust (B11) atic Invertebr rogen Sulfide zed Rhizosphe ence of Redu ent Iron Redu ted or Stress r (Explain in rely Vegetated	rates (B13) c Odor (C1) cres along Living uced Iron (C4 uction in Tilled sed Plants (D' Remarks) Concave Surfa Depth (in): Depth (in):	g Roots (C3)) I Soils (C6) I) (LRR A) ce (B8) 2" and rising 7"	Secondary Indicators (Water-Staine Drainage Pat Dry-Season V Saturation Vis Geomorphic I Shallow Aquit Frost-Heave I FAC-Neutral Raised Ant M Wetland Hyd Yes X	No

Project/Site:	Cedarbrook Sil	e			City/County:	Kina	Samplin	o Date:	9/6/	2016
Applicant/Owner:	Seattle Public	Schools			State:		Sampling	-		-11
Investigator(s):	Katharine Lee,	Kate Machata				/nship/Range:	S4 T26N R4E	-		
Landform (hillslope, terrace			hillslope		-	Local relief:	concave	Slope ((%)· 1	
Subregion (LRR):	Α .	Lat:		765183	- Lona:	-122.309108		Dat		VGS 84
Soil Map Unit Name:	Not Mapped					classification:	upland	Dut		
Are climatic / hydrologic co	nditions on the s	site typical for t	his time of y	ear?	-			explain in l	Remarks)	
Are Vegetation		or Hydrology		significantly d	listurhed?	Are "Normal Ci			3.5	
Are Vegetation			2			present? (If need				
AND		or Hydrology		naturally prob	nematic?	answers in	remarks)	Yes_	<u> </u>	lo
SUMMARY OF FIND Hydrophytic Vegetation Pr	esent?	Yes	X X	No No	cations, trar	isects, important	features, etc.			
Hydric Soil Present?	Cocinti	Yes		No	- Is the	Sampled Area				
Wetland Hydrology Preser	nt?	Yes	X	No	- withir	n a wetland?	Yes X	No		
Remarks:					- 1					
VEGETATION										
TEGETATION			Absolute	Danis	·			***************************************		
Tree Stratum (Plot size: 3	30 ft)		% Cover	Dominan Species?			Test worksheets ominant Species			
1. Populus balsamifera			60	Yes	FAC	1	L, FACW, or FAC		7	/A)
2. Alnus rubra			30	Yes	FAC	- Illiat Ale Ob	L, FACVV, 01 FAC	·· -	7	— ^(A)
3.						- L				
4.						- Total Numbe	er of Dominant			
						Species Acro	oss All Strata:	_	8	_ ^(B)
Sanling/Shrub Stratum (D)	-1	Total Cover:	90							
Sapling/Shrub Stratum (Pl	ot size: 30 ft)					Percent of D	ominant Species			
1. Sorbus sitchensis			10	No	FAC	That Are OB	L, FACW, or FAC	5 ;	88%	(A/B)
2. Prunus laurocerasus			10	No	NOL	Prevalence	Index workshee	t:		
 Rubus spectabilis 			5	No	FAC	Total %	Cover of:		Mul	tiply by:
4. Populus balsamifera			15	Yes	FAC	OBL species		x 1 =		
5. Rubus armeniacus			25	Yes	FAC	FACW specie			,	_
		Total Cover:	-	165	FAC			x 2 =		_
Herb Stratum (Plot size: 5		Total Cover.	65	•		FAC species		x 3 =	52	 -
Ranunculus repens	1117					FACU specie		x 4 =	300	<u>) </u>
			20	Yes	FAC	UPL species	0	x 5 =		_
2. Equisetum arvense			5	Yes -	FAC	_ Column Tota	ıls: 250	(A)	82	5 (B)
3.						F	Prevalence Index	= B/A =	ŧ	3.30
4.				11 11 11 11 11 11 11 11 11 11 11 11 11			Rapid Test for Hy	/drophyti	c Veget	ation
5				-		X	Dominance Test	is >50%		
6.			-	-			Prevalence Index	c is <3.0 ¹		
7.			-	-	-	•				
8.				-			Morphological Adap data in Remarks or			
		Total Course	0.5	-	-	-		***		7
Woody Vine Stratum (Plo		Total Cover:	25	-			Wetland Non-Vas			
	Colze: 5 ft)						Problematic Hydrop	hytic Veg	etation ¹ (E	xplain)
Solanum dulcamara			5	Yes	FAC	Indicators of h	ydric soil and wetla	nd hydrold	ogy must	be
2. Hedera helix			75	Yes	FACU	present.				
		Total Cover:	80	_		Hydrophytic	Vegetation			
% Bare Ground in Herb Str	atum _	10 %	6			Present?	Yes	X	No	
Remarks:										_
	Woody vine s	tratum coverin	g herb layer	so no bare gro	ound. Helix h	nedera is also in tre	e canopy vertica	llv climbi	na trunk	s. There
					are 2 varieties	s of ivy.		5		

	e Description: (Describe	to the dep	itii needed to			0. 00	e absence of indicators.)	
epth	Matrix			Redox F				5 .
n.)	Color (moist)	% (Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	7.5YR 2.5/1	100					sandy loam	mucky modified
15	Gley 2 4/10B	98	10YR 5/4	2	M	C	sandy loam	
_							2	
_								
_								
							c s	
_								
-								
	C=Concentration, D=Depletion,				ore Lining, RC=F	Root Channel, M		
dric	Soil Indicators: (Applica	ble to all L	RRs, unless	otherwise n	oted.)		Indicators for Problema	atic Hydric Soils*:
	Histosol (A1)		Sar	ndy Redox (S5)		2 cm Muck (15 1 TENNESSES
	Histic Epipedon (A2)	_	Stri	pped Matrix	(S6)			Material (TF2)
	Black Histic (A3)		X Loa	my Mucky N	Mineral (F1) (e:	xcept MLRA		v dark surface (TF12)
	Hydrogen Sulfide (A4)	_	X Loa	my Gleyed	Matrix (F2)		Other (Expla	ain in Remarks)
	Depleted Below Dark Surfa	ace (A11)	Dep	leted Matrix	(F3)			
	Thick Dark Surface (A12)	_	Red	lox Dark Su	rface (F6)			
	Sandy Mucky Mineral (S1)	_	Dep	leted Dark	Surface (F7)		ndicators of hydrophytic veg	
	Sandy Gleyed Matrix (S4)	-	Red	lox Depress	ions (F8)		wetland hydrology must be	present.
oe: .	tive Layer (if present):						Hydric Soil Pre Yes X	esent? No
pe: pth		sur	face is very bl	ack. Area is	s saturated yea	ar round with s		No
pe: pth mark	KS:	sur	face is very bl	ack. Area is	s saturated yea	ar round with s	Yes X	No
pe: pth mark		sur	face is very bl	ack. Area is	s saturated yea	ar round with s	Yes X	No
pe: epth emark	ROLOGY			ack. Area is	s saturated yea	ar round with s	Yes X spring/seep. Profile gets sa Secondary Indicators (2.0)	Nondier with depth.
pe: pth mark	SOLOGY d Hydrology Indicators:		ient)		s saturated yea		Yes X spring/seep. Profile gets sa Secondary Indicators (2.0)	No
pe: mark YDR etlan	COLOGY d Hydrology Indicators: Indicators (any one indicators) Surface Water (A1)		ient)Wate		aves (B9) (excep		Yes X spring/seep. Profile gets sa Secondary Indicators (2.0)	ndier with depth. or more required) Leaves (B9) (NW coast)
pe: pth mark	cs: COLOGY d Hydrology Indicators:		ient) Wate Salt	er-Stained Lea Crust (B11)	aves (B9) (excep		Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained L	ndier with depth. or more required) Leaves (B9) (NW coast) ns (B10)
pe: pth mark	COLOGY d Hydrology Indicators: Indicators (any one indicators) Surface Water (A1) High Water Table (A2)		wate	er-Stained Lea Crust (B11) atic Inverteb	aves (B9) (excep		Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained Land Drainage Patter Dry-Season Wa	ndier with depth. or more required) Leaves (B9) (NW coast) ns (B10)
pe: pth mark	ROLOGY d Hydrology Indicators: Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3)		wate Salt Aqu Hyd	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid	aves (B9) (excep) prates (B13)	t NW coast)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained Land Drainage Patter Dry-Season Wa	ndier with depth. or more required) Leaves (B9) (NW coast) rns (B10) ter Table (C2) le on Aerial Imagery (C9)
y DR	COLOGY d Hydrology Indicators: Indicators (any one indicators (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		wate Salt Aqu Hyd	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph	aves (B9) (excep) prates (B13) le Odor (C1)	t NW coast)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained L Drainage Patter Dry-Season Water-Stained Visib	ndier with depth. or more required) Leaves (B9) (NW coast) ons (B10) ter Table (C2) le on Aerial Imagery (C9) sition (D2)
pe:	ROLOGY d Hydrology Indicators: Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Salt Aqu Hydi	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph ence of Rec	aves (B9) (excep orates (B13) le Odor (C1) neres along Livin	t NW coast) g Roots (C3)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 or Water-Stained Indicators (2 o	ndier with depth. or more required) Leaves (B9) (NW coast) Ins (B10) Iter Table (C2) Ile on Aerial Imagery (C9) sition (D2) d (D3)
ppe: epth emark YDR etlan imary	COLOGY d Hydrology Indicators: Indicators (any one indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		ient) Wate Salt Aqui Hydi Oxidi Pres	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec	aves (B9) (excep orates (B13) le Odor (C1) neres along Livin duced Iron (C4	g Roots (C3)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained L Drainage Patter Dry-Season Water-Stained Visib Geomorphic Po Shallow Aquitar Frost-Heave Hu FAC-Neutral Te	ndier with depth. or more required) Leaves (B9) (NW coast) rns (B10) ter Table (C2) le on Aerial Imagery (C9) sition (D2) d (D3) mmocks (D4) st (D5)
pe:	ROLOGY d Hydrology Indicators: Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		ient) Wate Salt Aqu Hyd Oxidi Pres Recc	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec	aves (B9) (except) orates (B13) de Odor (C1) deres along Living duced Iron (C4) duction in Tilled ssed Plants (D	g Roots (C3)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained L Drainage Patter Dry-Season Water-Stained Visib Geomorphic Po Shallow Aquitar Frost-Heave Hu FAC-Neutral Te	ndier with depth. or more required) Leaves (B9) (NW coast) rns (B10) ter Table (C2) le on Aerial Imagery (C9) sition (D2) d (D3) mmocks (D4)
YDR etlan mary	COLOGY d Hydrology Indicators: Indicators (any one indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	tor is suffici	ient) Wate Salt Aqu Hyd Oxidi Pres Recc Sturn	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec ent Iron Rec et (Explain in	aves (B9) (except) orates (B13) de Odor (C1) deres along Living duced Iron (C4) duction in Tilled ssed Plants (D	g Roots (C3)) d Soils (C6) 1) (LRR A)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained L Drainage Patter Dry-Season Water-Stained Visib Geomorphic Po Shallow Aquitar Frost-Heave Hu FAC-Neutral Te	ndier with depth. or more required) Leaves (B9) (NW coast) rns (B10) ter Table (C2) le on Aerial Imagery (C9) sition (D2) d (D3) mmocks (D4) st (D5)
pe: peth	COLOGY d Hydrology Indicators: Indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image	tor is suffici	ient) Wate Salt Aqu Hyd Oxidi Pres Recc Sturn	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec ent Iron Rec et (Explain in	aves (B9) (except) prates (B13) le Odor (C1) heres along Living duced Iron (C4 duction in Tilled sed Plants (Di	g Roots (C3)) d Soils (C6) 1) (LRR A)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 of Water-Stained L Drainage Patter Dry-Season Water-Stained Visib Geomorphic Po Shallow Aquitar Frost-Heave Hu FAC-Neutral Te	ndier with depth. or more required) Leaves (B9) (NW coast) rns (B10) ter Table (C2) le on Aerial Imagery (C9) sition (D2) d (D3) mmocks (D4) st (D5)
pe: ppth mark	COLOGY d Hydrology Indicators: r Indicators (any one indicators (Surface Water (A1)) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Fron Deposits (B5) Surface Soil Cracks (B6)	tor is suffici	ient) Wate Salt Aqu Hyd Oxidi Pres Recc Sturn	er-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec ent Iron Rec et (Explain in	aves (B9) (except) prates (B13) le Odor (C1) heres along Living duced Iron (C4 duction in Tilled sed Plants (Di	g Roots (C3)) d Soils (C6) 1) (LRR A)	Secondary Indicators (2 of Water-Stained It Drainage Patter Dry-Season Water-Stained It Saturation Visib Geomorphic Potential Shallow Aquitar Frost-Heave Huter FAC-Neutral Te Raised Ant Mou	ndier with depth. or more required) Leaves (B9) (NW coast) Ins (B10) Iter Table (C2) Ile on Aerial Imagery (C9) Isition (D2) Id (D3) Immocks (D4) Ist (D5) Inds (D6) (LRR A)
pe: pth mark /DR /DR /dr /dr /dr /dr /dr /dr /dr /d	COLOGY d Hydrology Indicators: Indicators (any one indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Fron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Images	otor is suffici	Salt Aqu Hydi Oxidi Pres Recci Sturn Othe	cr-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec ent Iron Rec etted or Stres er (Explain in sely Vegetate	aves (B9) (except) prates (B13) de Odor (C1) deres along Living duced Iron (C4) duction in Tilled seed Plants (Din Remarks) d Concave Surfa	g Roots (C3)) d Soils (C6) 1) (LRR A)	Yes X spring/seep. Profile gets sa Secondary Indicators (2 control of the contr	ndier with depth. or more required) Leaves (B9) (NW coast) Ins (B10) Iter Table (C2) Ile on Aerial Imagery (C9) sition (D2) d (D3) mmocks (D4) st (D5) inds (D6) (LRR A)
pe: ppth mark	COLOGY d Hydrology Indicators: r Indicators (any one indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) nundation Visible on Aerial Imates	agery (B7)	ient) Wate Salt Aqu Hyd Oxidi Pres Recc Stun Othe Spars	cr-Stained Lea Crust (B11) atic Inverteb rogen Sulfid zed Rhizosph sence of Rec ent Iron Rec ent Iron Rec etted or Stres er (Explain in sely Vegetate	aves (B9) (except) prates (B13) le Odor (C1) heres along Living duced Iron (C4 duction in Tilled lised Plants (Den Remarks) d Concave Surfa	g Roots (C3)) I Soils (C6) (LRR A) ce (B8)	Secondary Indicators (2 of Water-Stained It Drainage Patter Dry-Season Water-Stained It Saturation Visib Geomorphic Potential Shallow Aquitar Frost-Heave Huter FAC-Neutral Te Raised Ant Mou	ndier with depth. or more required) Leaves (B9) (NW coast) Ins (B10) Iter Table (C2) Ile on Aerial Imagery (C9) Isition (D2) Id (D3) Immocks (D4) Ist (D5) Inds (D6) (LRR A)

	CKIVIINA	ION DATA	FURIVI - VV	estern Wou	ntains, Va	lleys and Co	ast Region			
	Cedarbrook S	ite			ity/County: K	(ing	Sampling	Date:	9/6/2	2016
	Seattle Public				State: V	VA	Sampling	Point:	C-	-12
Investigator(s):	Katharine Lee	, Kate Macha	ta	S	Section/Towns	ship/Range:	S4 T26N R4E	_		
Landform (hillslope, terrace	etc.):		0			Local relief:	0	Slope (%): 0	
Subregion (LRR):	Α	Lat:	47.76	55141	Long: -	122.309086		Datu	ım: V	/GS 84
	Not Mapped				NWI cla	assification:	upland		-	
Are climatic / hydrologic cond	ditions on the	site typical for	this time of ye	ar?	Yes	X No	(If no, ex	olain in F	Remarks)	
Are Vegetation	.Soil	, or Hydrology	s	significantly dis	turbed?	Are "Normal Cir				
Are Vegetation	-	, or Hydrology		naturally proble	P	present? (If needs		V	v	(4)
SUMMARY OF FINDIN	IGS - Atta	ch site man s	howing samp	ling point loss	mauc?	answers in	remarks)	Yes_	<u>X</u> N	٥
Hydrophytic Vegetation Pres	sent?	Yes		No	T	ects, important	reatures, etc.			
Hydric Soil Present?		Yes -		No X	Is the Sa	impled Area				
Wetland Hydrology Present	?	Yes		No X	within a	wetland?	Yes	No	Х	
Remarks:	Plot is located	about 15 fee	south and abo	out 10 inches a	hove plot 11w	v -				=
					oovo piot i iv	•.				
VEGETATION										
			Absolute	Dominant	Indicates	Th				
Tree Stratum (Plot size: 30) ft)		% Cover	Species?	Indicator Status	2 - 2000000 W W W	Test worksheet: ominant Species			
1. Alnus rubra	- q		30	Yes	FAC		the programmer of the second		c	(4)
2. Prunus avium			20	Yes	FACU	That Ale Obl	., FACW, or FAC:	1	6	– ^(A)
3. Populus balsamifera										
4.			30	Yes	FAC	Total Number	of Dominant			
						Species Acros	ss All Strata:	_	10	_ (B)
Sanling/Shrub Strature (Dis		Total Cover:	80							
Sapling/Shrub Stratum (Plot	size: 30 ft)					Percent of Do	minant Species			
1. Ilex aquifolium			25	Yes	FACU	That Are OBL	, FACW, or FAC:		60%	(A/B)
2. Prunus laurocerasus			5	No	NOL		ndex worksheet:			
 Sorbus sitchensis 			5	No	FAC		Cover of:		Mult	tiply by:
4. Rubus spectabilis			30	Yes	FAC	OBL species	0 x	1 -	-	
5. Rubus armeniacus			30						•	
		T-1-1 0		Yes	FAC	FACW specie			-	_
Herb Stratum (Plot size: 5 ft	۸.	Total Cover:	95			FAC species	150 ×		450	<u>) </u>
	1				**	FACU species	s 135 x	4 =	540)
1. Ranunculus repens			5	Yes	FAC	UPL species	0 ×	5 =		
2. Calystegia sepium			10	Yes	FAC	Column Totals	s: 285 (A	()	990	(B)
3.						Р	revalence Index :	= B/A =		3.47
4						F	Rapid Test for Hyd	rophytic	c Vegeta	ation
5						X	Dominance Test is	>50%	_	
6.							Prevalence Index i			
7.			***************************************			·				
8.							lorphological Adapta ata in Remarks or or			
										,
Woody Vino Stratum (Dlate	0:	Total Cover:	15		8	v	Vetland Non-Vasc	ular Pla	ants'	
Woody Vine Stratum (Plot	Size: 5 ft)					P	roblematic Hydrophy	tic Vege	tation ^t (E	xplain)
1. Hedera helix			90	Yes	FACU	Indicators of hy	dric soil and wetland	hydrolo	gy must 1	be
2. Solanum dulcamara			10	Yes	FAC	present.				
		Total Cover:	100			Hydrophytic	Vegetation			
% Bare Ground in Herb Stra	tum	20	%			Present?	Yes	X	No	
Remarks:										
and the second s	Plant comm	unity is similar	in plot 11 and	12. There is m	ore ivy and le	ess Ranunculus r	epens in the upla	nd plot	Does n	ot meet
			The second secon		revalence Inc		-,- z a.o apia	- p.ot.		_,

SOIL							npling Point: C-12
Profil		e to the depth need			or confirm th	e absence of indicators.)	
Depth	Matrix			ox Features	. 2		Domesto
(in.)	Color (moist)	% Color (m	ioist) %	Type ¹	Loc ²	Texture	Remarks
0-14	10YR 3/2	100				sandy loam	
14-18 —	10YR 4/2	90 10YR 4	/610	_ <u> </u>	M	sandy loam	more sand with depth
-		1					
_							
_							and the second s
_				_			
 Гуре:	C=Concentration, D=Depletion	n, RM=Reduced Matrix	. ² Location: Pl	_=Pore Lining, RC=F	Root Channel, M		
ydric	Soil Indicators: (Applica	able to all LRRs, ur	nless otherwis	e noted.)		Indicators for Problems	itic Hydric Soils³:
	Histosol (A1)		Sandy Redo	ox (S5)		2 cm Muck	A10)
	Histic Epipedon (A2)		Stripped Ma	trix (S6)		Red Parent	Material (TF2)
	Black Histic (A3)		Loamy Muck	ky Mineral (F1) (e	xcept MLRA		dark surface (TF12)
	Hydrogen Sulfide (A4)		Loamy Gley	ed Matrix (F2)		Other (Expla	in in Remarks)
	Depleted Below Dark Surf	face (A11)	Depleted Ma	atrix (F3)			
	Thick Dark Surface (A12)		Redox Dark	Surface (F6)			
	Sandy Mucky Mineral (S1			rk Surface (F7)	્રા	ndicators of hydrophytic veg	
	Sandy Gleyed Matrix (S4)		_ Redox Depr	essions (F8)		wetland hydrology must be	present.
epth emark				soil profile ap	opears to have	Yese some mixing.	NoX
IVDE	ROLOGY						
	d Hydrology Indicators:						
	Indicators (any one indica	ator is sufficient)				Secondary Indicators (2 of	or more required)
)	Surface Water (A1)		Water-Stained	Leaves (B9) (excep	t NW coast)	Water-Stained L	eaves (B9) (NW coast)
	High Water Table (A2)		— Salt Crust (B	311)		Drainage Patter	ns (B10)
	Saturation (A3)		Aquatic Inve	rtebrates (B13)		Dry-Season Wa	ter Table (C2)
	Water Marks (B1)		– Hydrogen Su	ulfide Odor (C1)		Saturation Visib	le on Aerial Imagery (C9)
	Sediment Deposits (B2)		Oxidized Rhizo	spheres along Livin	g Roots (C3)	Geomorphic Po	sition (D2)
	Drift Deposits (B3)	•	Presence of	Reduced Iron (C4	1)	Shallow Aquitar	d (D3)
,	Algal Mat or Crust (B4)		Recent Iron I	Reduction in Tille	d Soils (C6)	Frost-Heave Hu	mmocks (D4)
	Iron Deposits (B5)		and the second s	tressed Plants (D	1) (LRR A)	FAC-Neutral Te	• •
	Surface Soil Cracks (B6)		_ ` ` ` `	in in Remarks)			nds (D6) (LRR A)
	nundation Visible on Aerial Im-	agery (B7)	Sparsely Vege	tated Concave Surfa	ace (B8)		
eld O	bservations:						
	Water Present?	Yes	No X	Depth (in):		M-Alexa Divides	logy Procent?
	able Present?	Yes	_NoX	Depth (in):		Wetland Hydro Yes	No X
aturati	on Present?	Yes	No X	Depth (in):	-	Tes	
	e canillant fringe						
nclude	es capillary fringe) e Recorded Data (stream	gauge, monitoring v	well, aerial pho	tos, previous insp	ections), if av	ailable:	

Project/Site:	Cedarbrook S	Site			City/County: K	King	Sampling	Date:	9/6/2016
Applicant/Owner:	Seattle Public	Schools			State: V	VA	Sampling		D-13
Investigator(s):		e, Kate Machata		-	Section/Town:	ship/Range:	S4 T26N R4E	_	
Landform (hillslope, terrace	etc.):		0			Local relief:		Slope (%	%): 0
Subregion (LRR):	Α -	Lat:	47.76	55311		122.308855		Datu	Andrews Communication
Soil Map Unit Name:	Not Mapped					assification:	upland	5000	
Are climatic / hydrologic co	nditions on the	site typical for t	his time of ye	ar?	Yes	-		plain in R	emarks)
Are Vegetation		, or Hydrology		ignificantly dis	sturbed?	Are "Normal	Circumstances" eded, explain any		,
Are Vegetation		, or Hydrology	n	aturally probl	ematic?	answers	in remarks)	Yes	X No
SUMMARY OF FIND	INGS - Atta	ch site map sh	owing samp	ling point loc	ations, trans	ects, importa	nt features, etc.	-	
riydrophylic vegetation Pr	esent?	Yes	X 1	No	100 000 68				
Hydric Soil Present?		Yes		No	ASS 25 15	ampled Area a wetland?			
Wetland Hydrology Preser		Yes		No	. 1		Yes X	No_	
Remarks:	There is no u	pland paired plo	t for wetland I	D as it is wetla	and up to edge	e of concrete s	idewalk adjacent to l	ouilding.	
VEGETATION									
T 0			Absolute	Dominant	Indicator	Dominano	e Test worksheet:	***************************************	
Tree Stratum (Plot size: 1	30 ft)		% Cover	Species?	Status	Number of	Dominant Species		
				-2000		That Are O	BL, FACW, or FAC:		3 (A)
2.									
3						Total Numl	ber of Dominant		
4.					-	1	cross All Strata:		3 (B)
		Total Cover:	0		-	Openies //c	oroso rai otrata.	-	(b)
Sapling/Shrub Stratum (Pl	ot size: 30 ft)	Total Gover.							
Rubus armeniacus				14714			Dominant Species		
2.			35	Yes	FAC_	That Are O	BL, FACW, or FAC:		100% (A/B)
3.				-		1	e Index worksheet:		
				-		Total	% Cover of:		Multiply by:
4						OBL specie	es 0 x	1 =	
5.						FACW spe	cies 30 x	2 =	60
		Total Cover:	35	-		FAC specie	es 75 x	3 =	225
Herb Stratum (Plot size: 5	ft)		,			FACU spec	cies 0 x	4 =	
1. Ranunculus repens			20	Yes	FAC	UPL specie			
2. Calystegia sepium			10	No	FAC	Column To			285 (B)
3. Athyrium filix-femina			5			Column	Prevalence Index		
Epilobium ciliatum			****	No	FAC				2.71
Equisetum telmateia			5	No	FACW		Rapid Test for Hyd		Vegetation
			15	Yes	FACW	X	Dominance Test is	>50%	
			10	No	FACW	X	Prevalence Index i	s ≤3.0 ¹	
7. Holcus lanatus			5	No	FAC		Morphological Adapta	ations ¹ (Pr	ovide supporting
8							data in Remarks or or	n a separa	ale sheet)
		Total Cover:	70				Wetland Non-Vaso	ular Pla	nts ¹
Woody Vine Stratum (Plo	t Size: 5 ft)						Problematic Hydrophy		100 miles
1.	•								
2.						'Indicators o present.	f hydric soil and wetland	i hydrolog	y must be
		Tabal Cassass							***
% Bare Ground in Herb St	ratum	Total Cover:	. — 0			1	tic Vegetation		
7 Jan Croand III Herb St	atum	0 %	0			Present?	Yes	<u> </u>	·
Remarks:									
				*					

SOIL							ng Point:	D-13	
Profile Description: (Describe to the	depth needed to	document tl	he indicator	or confirm th	he absence of indicate	ors.)			
DepthMatrix		Redox Fe							
(in.) Color (moist) %	Color (moist)	%	Type ¹	Loc ²	Texture		Re	marks	
0-5 10YR 3/1 100	And the state of t				sandy loam	_	mucky		
5-13 Gley 2 4/10B 95	7.5YR 4/4	5			sandy loam	_			
13-18 10YR 5/1 80	7.5YR 4/4	20			sandy loam	_	mixed		
10110 101103/1	- 7.011								
			M			_			
						-			
			-					***************************************	
						_			
					M. Madain	-		***************************************	
¹ Type: C=Concentration, D=Depletion, RM=Re				Root Channel, M		. 1 4	Hudria Caile	_3.	
Hydric Soil Indicators: (Applicable to	all LRRs, unless o	therwise no	oted.)		Indicators for Prof			5 ;	
Histosol (A1)	San	dy Redox (S	5)			2 cm Muck (A10)			
Histic Epipedon (A2)	Strip	ped Matrix (S6)		Red Pa	Red Parent Material (TF2)			
Black Histic (A3)	Loai	my Mucky M	ineral (F1) (e	xcept MLRA	1) Very sl	nallow da	irk surface (T	F12)	
Hydrogen Sulfide (A4)	X Loai	my Gleyed M	latrix (F2)		Other (Explain i	n Remarks)		
Depleted Below Dark Surface (A	11) X Dep	leted Matrix	(F3)						
Thick Dark Surface (A12)		ox Dark Surf	ace (F6)						
Sandy Mucky Mineral (S1)		leted Dark S		3	Indicators of hydrophyti	ic vegeta	tion and		
Sandy Gleyed Matrix (S4)		ox Depressio			wetland hydrology mu	st be pre	sent.		
Canay croyed mann (c i)									
Restrictive Layer (if present):					Hydric So	il Prose	nt?		
Type:					Yes	X	No		
Depth									
Remarks:		Soil prof	ilo annoare t	o ha disturbed	d with mixing evidence.				
		Soli proi	ile appears i	o be distarbed	a with mixing origeness				
HYDROLOGY									
Wetland Hydrology Indicators:									
Primary Indicators (any one indicator is s	ufficient)				Secondary Indicator	s (2 or m	nore required)	
Surface Water (A1)	Wate	r-Stained Leav	es (B9) (exce	ot NW coast)	Water-Stai	ned Leav	ves (B9) (NW	l coast)	
High Water Table (A2)		Crust (B11)			Drainage F	Patterns	(B10)		
		atic Invertebr	ates (B13)		X Dry-Seaso	n Water	Table (C2)		
X Saturation (A3) Water Marks (B1)		ogen Sulfide			Saturation	Visible o	n Aerial Imag	gery (C9)	
**************************************		zed Rhizosphe		na Poots (C3)	Geomorph	ic Positio	on (D2)		
Sediment Deposits (B2)					Shallow Ad				
Drift Deposits (B3)		ence of Red	25.		Frost-Heav		- 5		
Algal Mat or Crust (B4)		ent Iron Redu							
Iron Deposits (B5)		ted or Stress	- A - C - C - C - C - C - C - C - C - C	11) (LKK A)	X FAC-Neutr		ບອ) s (D6) (LRR A	A)	
Surface Soil Cracks (B6)		r (Explain in		aaa (P.O)			(/	,	
Inundation Visible on Aerial Imagery (B	7) Spars	ely Vegetated	Concave Suri	ace (Do)					
Field Observations:									
Surface Water Present? Ye	s No	X	Depth (in):						
Water Table Present? Ye	s X No		Depth (in):	15"	1		y Present?		
Saturation Present? Ye	s X No		Depth (in):	surface	Yes	X	. No		
(includes capillary fringe)			and a set to	nostions\ if	vailable:				
	manitoring wall ac	mal photos	Dravious inci	ACTIONS) IT AL	ranable.				
Describe Recorded Data (stream gauge,	monitoring well, ac	mai priotos, į	previous iris)ections), ii at					

Project/Site:	Cedarbrook Site				City/County: King		Sampling Date:		9/6/2016	
Applicant/Owner:	Seattle Public	Schools			State:		Sampling I	D-0-1	E-1	
Investigator(s):		, Kate Machata				vnship/Range:	S4 T26N R4E			
Landform (hillslope, terrace	etc.):	tc.): graded field			•	Local relief:		Slope (%): 0		
Subregion (LRR):	A	Lat:	47.7	766025	Long:	: -122.308691		Datur		GS 84
Soil Map Unit Name:	Not Mapped	-			•	classification:	upland			
Are climatic / hydrologic co	nditions on the	site typical for th	is time of yo	ear?	Yes			plain in Re	emarks)	
Are Vegetation	,Soil	, or Hydrology		significantly di	isturbed?	Are "Normal Cir present? (If need	rcumstances"			
Are Vegetation	,Soil	, or Hydrology		naturally prob	lematic?	answers in	remarks)	Yes _	X No	
SUMMARY OF FIND	NGS - Atta	ch site map sho	wing samp	oling point lo	cations, trar	nsects, important	features, etc.	_		
Hydrophytic Vegetation Pr Hydric Soil Present?	esent?	Yes	X	No	1	Sampled Area				
Wetland Hydrology Preser	nt?	Yes	X	No		n a wetland?	wa		v	
Remarks:		Yes		No X	<u> </u>		Yes	No_	X	-
Nomano.	Plot is located	beyond toe of si	lope in grad	ed playfield.	A surface dra	ain is located at toe	of slope about 10	feet sou	ith of plo	ot.
VEGETATION				-						
Tree Stratum (Plot size: 3	30 ft)		Absolute <u>% Cover</u>	Dominant Species?			Test worksheet: ominant Species			
1.					•	ı	., FACW, or FAC:		1	(A)
2.						-	51 S			- ' '
3. 4.						Total Number	of Dominant			
4.						Species Acro	ss All Strata:		1	(B)
Sapling/Shrub Stratum (Pl	ot size: 3() ff)	Total Cover:	0					-		
1.	or 5126. 55 11,						ominant Species			
2.							., FACW, or FAC:		100%	(A/B)
3.			-			- 1	ndex worksheet: Cover of:		Multi	ply by:
4.					-	-		191	With	<u> </u>
5.					-	OBL species	0 ×	1 =		-
J						_ FACW specie	es <u>0</u> x 2	2 =		.
Illanta Charterina (Di La an		Total Cover:	0	in .		FAC species	80 x 3	3 =	240	_
Herb Stratum (Plot size: 5	<u>ft)</u>					FACU species	s 50 x 4	4 =	200	
Agrostis species			80	Yes	FAC	UPL species	0 x	5 =		
2. Taraxacum officinale			25	No	FACU	Column Total	ls: 130 (A	()	440	(B)
3. Trifolium pratense			25	No	FACU	- P	revalence Index =			3.38
4.		•	-	-		- F	Rapid Test for Hyd	rophytic		
5.		-					Dominance Test is			
6.					-					
7.				(-	Prevalence Index is			
8.							Morphological Adapta			
·							data in Remarks or or			
Woody Vine Stratum (Plo	t Size 5 ft)	Total Cover:	130	•			Wetland Non-Vasc			
1.	(CIZE, 5 II)					ļ ^F	Problematic Hydrophy	tic Veget	ation' (Ex	plain)
2.				-		Indicators of hy present.	ydric soil and wetland	l hydrolog	y must b	е
		Total Cover:	0		_	Hydrophytic	Vegetation			
% Bare Ground in Herb Str	atum	%				Present?	Yes	X N	o	
Remarks:							enangen/ months			
*				Does r	not meet Prev	valence Index				
				D000	iot moder to:	Adence index				

pth		ii iicoucu to	aocument	the indicator c	r commin ui	e absence of indicators.)	
.) Color (moist) -6 10YR 4/1.5				Features			
0-6 10YR 4/1.5	% C	olor (moist)	%	Type ¹	Loc ²	Texture	Remarks
5 10YR 5/2	100					silt loam	many fine roots
	85 7	.5YR 5/4	15	С	M	sandy loam	some gravel
					X I		
		81,					
pe: C=Concentration, D=Depletion		7 St. 10		ore Lining, RC=R	oot Channel, M		
dric Soil Indicators: (Applic	cable to all LF	Rs, unless o	therwise i	noted.)		Indicators for Problemat	
Histosol (A1)	San	dy Redox (S5)		2 cm Muck (A10)		
Histic Epipedon (A2)		ped Matrix			Red Parent Material (TF2)		
Black Histic (A3)	Loa	my Mucky I	Mineral (F1) (ex	cept MLRA			
Hydrogen Sulfide (A4)		Loa	my Gleyed	Matrix (F2)		Other (Explain	n in Remarks)
Depleted Below Dark Su	ırface (A11)	X Dep	leted Matri	k (F3)			
Thick Dark Surface (A12	.)	Red	ox Dark Su	rface (F6)			
Sandy Mucky Mineral (S	Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)					ndicators of hydrophytic vege	
Sandy Gleyed Matrix (S4	4)	Red	ox Depress	sions (F8)		wetland hydrology must be p	resent.
narks:		Possi	bly relic hyd	dric soil indicate	rs from gradi	ing to make school site and fi	eld.
DROLOGY		×*					
tland Hydrology Indicators	:						
		nt)	9			Secondary Indicators (2 or	more required)
nary Indicators (any one indic		Wate	r-Stained Le	aves (B9) (except	NW coast)	Water-Stained Le	
					1111 00001,		eaves (B9) (NW coast)
Surface Water (A1)		Salt	Crust (B11)	,,,,,	Drainage Pattern	C2= 6
Surface Water (A1) High Water Table (A2)	_) orates (B13)	, tri dodoty	Drainage Pattern Dry-Season Water	s (B10)
Surface Water (A1)		Aqua	atic Inverte	orates (B13)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Dry-Season Wate	s (B10)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)		Aqua Hydr	atic Invertel rogen Sulfic	8		Dry-Season Wate	s (B10) er Table (C2) e on Aerial Imagery (C9
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 	Aqua Hydr Oxidi	atic Invertel rogen Sulfic zed Rhizospl	orates (B13) de Odor (C1)	Roots (C3)	Dry-Season Wate	s (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Aqua Hydr Oxidi: Pres	atic Inverted rogen Sulfice zed Rhizospl ence of Re	orates (B13) de Odor (C1) neres along Living	Roots (C3)	Dry-Season Wate Saturation Visible Geomorphic Posi	s (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	 	Aqua Hydr Oxidi: Pres Rece	atic Inverted rogen Sulfice zed Rhizospl ence of Re ent Iron Rec	orates (B13) de Odor (C1) neres along Living duced Iron (C4)	Roots (C3) Soils (C6)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes	s (B10) er Table (C2) e on Aerial Imagery (C9 tition (D2) (D3) nmocks (D4) t (D5)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)		Aqua Hydr Oxidi Pres Rece Stun	atic Inverted rogen Sulfice zed Rhizospl ence of Re ent Iron Red ted or Street	orates (B13) de Odor (C1) meres along Living duced Iron (C4) duction in Tilled	Roots (C3) Soils (C6)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun	s (B10) er Table (C2) e on Aerial Imagery (C9 tition (D2) (D3) nmocks (D4) t (D5)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)		Aqua Hydr Oxidi: Pres Rece Stun	atic Invertel rogen Sulfic zed Rhizospl ence of Re ent Iron Re ted or Stre er (Explain i	orates (B13) de Odor (C1) neres along Living duced Iron (C4) duction in Tilled ssed Plants (D1	Roots (C3) Soils (C6)) (LRR A)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes	s (B10) er Table (C2) e on Aerial Imagery (C9 tition (D2) (D3) nmocks (D4) t (D5)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial In		Aqua Hydr Oxidi: Pres Rece Stun	atic Invertel rogen Sulfic zed Rhizospl ence of Re ent Iron Re ted or Stre er (Explain i	orates (B13) de Odor (C1) neres along Living duced Iron (C4) duction in Tilled ssed Plants (D1 n Remarks)	Roots (C3) Soils (C6)) (LRR A)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes	s (B10) er Table (C2) e on Aerial Imagery (C9 tition (D2) (D3) nmocks (D4) t (D5)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Ind		Aqua Hydr Oxidi: Pres Rece Stun	atic Invertel rogen Sulfic zed Rhizospl ence of Re ent Iron Re ted or Stre er (Explain i	orates (B13) de Odor (C1) neres along Living duced Iron (C4) duction in Tilled ssed Plants (D1 n Remarks)	Roots (C3) Soils (C6)) (LRR A)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes	s (B10) er Table (C2) e on Aerial Imagery (C9 tition (D2) (D3) nmocks (D4) t (D5)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6)	magery (B7)	Aqua Hydr Oxidi: Pres Rece Stun Othe	atic Invertel rogen Sulfic zed Rhizospl ence of Re ent Iron Rec ted or Stres er (Explain i sely Vegetate	orates (B13) de Odor (C1) heres along Living duced Iron (C4) duction in Tilled assed Plants (D1 n Remarks) d Concave Surface	Roots (C3) Soils (C6)) (LRR A)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes	s (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3) nmocks (D4) t (D5) ds (D6) (LRR A)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Indeposits (B5) d Observations: face Water Present? uration Present?	Yes	Aqua Hydr Oxidi: Pres Rece Stun Othe Spars	atic Invertel rogen Sulfic zed Rhizospi ence of Re ent Iron Rec ted or Stres er (Explain i sely Vegetate	orates (B13) de Odor (C1) neres along Living duced Iron (C4) duction in Tilled assed Plants (D1 n Remarks) d Concave Surface	Roots (C3) Soils (C6)) (LRR A)	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes Raised Ant Moun	s (B10) er Table (C2) e on Aerial Imagery (C9 dition (D2) (D3) emocks (D4) t (D5) ds (D6) (LRR A)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Indeposits (B5) d Observations: face Water Present?	Yes Yes Yes	Aqua Hydr Oxidi: Pres Rece Stun Othe Spars No No No	atic Invertel rogen Sulfic zed Rhizospi ence of Re ent Iron Rec ted or Stree er (Explain i sely Vegetate X X X	prates (B13) de Odor (C1) meres along Living duced Iron (C4) duction in Tilled assed Plants (D1 n Remarks) d Concave Surface Depth (in): Depth (in):	Soils (C6)) (LRR A) ee (B8) >15" >15"	Dry-Season Wate Saturation Visible Geomorphic Posi Shallow Aquitard Frost-Heave Hun FAC-Neutral Tes Raised Ant Moun Wetland Hydrold Yes	s (B10) er Table (C2) e on Aerial Imagery (C9 ition (D2) (D3) nmocks (D4) t (D5) ds (D6) (LRR A)

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

Project/Site:	Cedarbrook	Site			City/County:	: King	Sampling	Date:	9/6/2	2016
Applicant/Owner:	Seattle Publi	c Schools			State:		Sampling	-	E-	
Investigator(s):	Katharine Le	e, Kate Macha	ta	-		vnship/Range:	S4 T26N R4E			
Landform (hillslope, terrace			hillslope			Local relief:	convex	Slope (%)· 3	
Subregion (LRR):	Α	Lat:		765973	Long:	: -122.308750	CONVEX	Datu	-	GS 84
Soil Map Unit Name:	Not Mapped					classification:	upland	Date	JIII	33 04
Are climatic / hydrologic co		e site typical fo	r this time of v	rear?	Yes	No. of Contract of		xplain in F	Domarka)	
Are Vegetation	_ ,Soil	, or Hydrology		significantly di		Are "Normal Ci	ircumstances"	(piaiii iii r	(emarks)	
Are Vegetation	,Soil	, or Hydrology		naturally prob	lematic?	answers in	remarks)	Yes	X No	1
SUMMARY OF FIND	INGS - Att	ach site map	showing sam	pling point lo	cations tran	nsects important	features etc	103_		
Hydrophytic Vegetation P	resent?	Yes	X	No	T	nooto, important	Toutares, etc.			
Hydric Soil Present?		Yes	Х	No		Sampled Area				
Wetland Hydrology Prese	nt?	Yes	Х	No	within	n a wetland?	Yes X	No		
Remarks:				-	·					=
VEGETATION										
			Absolute	Dominant	Indicator	Dominance	Test worksheet:			
Tree Stratum (Plot size:	30 ft)		% Cover	Species?	Status	Number of D	ominant Species			
1.						That Are OB	L, FACW, or FAC:	:	1	(A)
2				-	-	-		_		- ' '
3.				-		- Total Numbo	er of Dominant			
4.						-				45)
		Tatal O		-	· ———	- Species Acro	oss All Strata:	_	1	– ^(B)
Sapling/Shrub Stratum (P	Int size: 30 ft)	Total Cover:	0	-						
1.	100 3126, 30 II)					Percent of De	ominant Species			
2.				-		That Are OB	L, FACW, or FAC:		<u>100%</u>	(A/B)
						Prevalence	Index worksheet:	:		
3.				-		Total %	Cover of:		Multi	iply by:
4				-		OBL species	0 x	1 =		
5.				-	•	FACW speci		2 =		
		Total Cover:	0		-	FAC species				-
Herb Stratum (Plot size: 5	i ft)	Total Gover.		-					375	-
Ranunculus repens						FACU specie			60	_
			60	Yes	FAC	UPL species	0 ×	5 =		_
			20	No	FAC	Column Tota	ils: 140 (/	A)	435	(B)
3. Trifolium repens			25	No	FAC	F	Prevalence Index	= B/A =	3	<u>3.11</u>
4. Taraxacum officinale			15	No	FACU		Rapid Test for Hyd	drophytic	: Vegeta	tion
Schedonorus arundina	ceus		20	No	FAC	×	Dominance Test is	s >50%		
6.				-			Prevalence Index	ic <3 01		
7.				-	-	-				
8.				_		-	Morphological Adapta data in Remarks or o	ations' (P	rovide sup	porting
				_	-					ł.
Manda V. O.	W 10-200	Total Cover:	140	_			Wetland Non-Vas	cular Pla	ants 1	
Woody Vine Stratum (Plo	ot Size: 5 ft)						Problematic Hydroph	ıytic Vege	tation¹ (Ex	(plain)
1.						¹ Indicators of h	ydric soil and wetlan	d hvdrolo	av must b	oe .
2.					•	present.	,	,	5)	· ·
		Total Cover:	0			Hydrophytic	Vegetation			
% Bare Ground in Herb St	ratum	0	%	-		Present?		X N	No	
Pamarks:								<u> </u>		
Remarks:					*		14			

	Matrix			Redox F			ne absence of indicat	
epth		%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
n.) 0-5	Color (moist) 10YR 4/1	98	7.5YR 3/4	2	C	М	silt loam	
-	10YR 5/2	80	7.5YR 5/6	15		M	sandy loam	some gravel
-16 —	101K 5/2			5		M		
_			7.5YR 3/4			IVI		
_								
								_
							4 Makin	
	C=Concentration, D=Deple				ore Lining, RC=F	coot Channel, N		oblematic Hydric Soils ³ :
ydric	Soil Indicators: (App	licable to al						
	Histosol (A1)			ndy Redox (S				Muck (A10)
	Histic Epipedon (A2)			pped Matrix				Parent Material (TF2)
	Black Histic (A3)		Loa	my Mucky N	Aineral (F1) (e:	xcept MLRA	·	shallow dark surface (TF12)
	Hydrogen Sulfide (A4)		Loa	my Gleyed I	Matrix (F2)		Other	(Explain in Remarks)
	Depleted Below Dark S	Surface (A11)XDep	oleted Matrix	(F3)			
	Thick Dark Surface (A1	12)	Red	lox Dark Sur	rface (F6)			
	Sandy Mucky Mineral ((S1)	Dep	leted Dark S	Surface (F7)	3	Indicators of hydrophy	
	Sandy Gleyed Matrix (S	S4)	Red	lox Depress	ions (F8)		wetland hydrology m	ust be present.
pe:	tive Layer (if present)):					Hydric S Yes	oil Present? X No
/pe: _ epth		:					_	
/pe: _ epth - emark		1:					_	
ype: _epth _emark	s:						Yes	X No
ype: _epth _emark	s: OLOGY	rs:	fficient)				Yes	X No
ype: _epth -emark	s: OLOGY d Hydrology Indicator	rs:		er-Stained Lea	aves (B9) (excep	t NW coast)	Yes Secondary Indicate Water-St	ors (2 or more required) ained Leaves (B9) (NW coast)
pe: _epth _emark	s: OLOGY d Hydrology Indicator Indicators (any one inc	rs:	Wate	er-Stained Lea Crust (B11)		t NW coast)	Yes Secondary Indicate Water-Ste	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10)
YDR etlane	s: OLOGY d Hydrology Indicator Indicators (any one inc	rs:	Wate			t NW coast)	Yes Secondary Indicate Water-Stee Drainage X Dry-Seas	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2)
YDR etlane imary	s: OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2)	rs:	Wate	Crust (B11) atic Inverteb		t NW coast)	Secondary Indicate Water-Ste Drainage X Dry-Seas Saturation	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) n Visible on Aerial Imagery (C9
YDR etlane imary X X	s: OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3)	rs: dicator is sut	Wate Salt Aqu Hyd	Crust (B11) atic Inverteb rogen Sulfid	orates (B13)		Secondary Indicate Water-Ste Drainage X Dry-Seas Saturation Geomorp	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) n Visible on Aerial Imagery (CS) hic Position (D2)
YDR fetlandimary	s: OLOGY d Hydrology Indicator Indicators (any one indicators (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	rs: dicator is sut	Wate Salt Aqu Hyd Oxid	Crust (B11) atic Inverteb rogen Sulfid ized Rhizosph	orates (B13) le Odor (C1)	g Roots (C3)	Secondary Indicate Water-Ste Drainage X Dry-Seas Saturation Geomorp Shallow A	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) n Visible on Aerial Imagery (C9) hic Position (D2) Aquitard (D3)
YDR YDR etland XX I	OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	rs: dicator is sut	Wate Salt Aqu Hyd Oxid	Crust (B11) atic Inverteb rogen Sulfid ized Rhizosph sence of Rec ent Iron Red	orates (B13) le Odor (C1) leres along Livin duced Iron (C4 duction in Tilled	g Roots (C3) :) d Soils (C6)	Secondary Indicate Water-Ste Drainage X Dry-Seas Saturation Geomorp Shallow A	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) n Visible on Aerial Imagery (C9) hic Position (D2) Aquitard (D3) ave Hummocks (D4)
ype:	s: OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3)	rs: dicator is sut	Wate Salt Aqu Hyd Oxid Pres Rec Stur	Crust (B11) atic Inverteb rogen Sulfid ized Rhizosph sence of Rece ent Iron Red atted or Stres	orates (B13) le Odor (C1) leres along Living duced Iron (C4 duction in Tilled sed Plants (D	g Roots (C3) :) d Soils (C6)	Secondary Indicate Water-Ste Drainage X Dry-Seas Saturation Geomorp Shallow A Frost-Hea	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) In Visible on Aerial Imagery (CS) hic Position (D2) Aquitard (D3) ave Hummocks (D4) tral Test (D5)
//pe:	s: OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3) Algal Mat or Crust (B4)	rs: dicator is sut	Wate Salt Aqu Hyd Oxid Pres Rec Stur Othe	Crust (B11) atic Inverteb rogen Sulfid ized Rhizosph sence of Rec ent Iron Red ated or Stres er (Explain ir	prates (B13) de Odor (C1) deres along Living duced Iron (C4 duction in Tilled seed Plants (Di n Remarks)	g Roots (C3) i) d Soils (C6) 1) (LRR A)	Secondary Indicate Water-Ste Drainage X Dry-Seas Saturation Geomorp Shallow A Frost-Hea	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) n Visible on Aerial Imagery (C9) hic Position (D2) Aquitard (D3) ave Hummocks (D4)
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ype:eepth _	OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3) Algal Mat or Crust (B4) ron Deposits (B5) Surface Soil Cracks (B6 nundation Visible on Aerial Deservations:	rs: dicator is suf))) Imagery (B7)	Wate Salt Aqu Hyd Oxid Pres Rec Stur Othe	Crust (B11) atic Inverteb rogen Sulfid ized Rhizosph sence of Rec ent Iron Red atted or Stres er (Explain ir sely Vegetated	prates (B13) le Odor (C1) heres along Living duced Iron (C4 duction in Tilled seed Plants (D- n Remarks) d Concave Surfa	g Roots (C3) i) d Soils (C6) 1) (LRR A)	Secondary Indicate Water-Sta Drainage X Dry-Seas Saturation Geomorp Shallow A Frost-Hea FAC-Neu Raised A	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) In Visible on Aerial Imagery (CS) Inic Position (D2) Aquitard (D3) ave Hummocks (D4) Itral Test (D5) Int Mounds (D6) (LRR A)
ype:eepth _	OLOGY d Hydrology Indicator Indicators (any one inc Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Orift Deposits (B3) Algal Mat or Crust (B4) Fron Deposits (B5) Surface Soil Cracks (B6) Foundation Visible on Aerial Deservations: Water Present?	rs: dicator is suf	Wate Salt Aqu Hyd Oxid Pres Rec Stur Othe Spar	Crust (B11) atic Inverteb rogen Sulfid ized Rhizosph sence of Rec ent Iron Red atted or Stres er (Explain ir sely Vegetated	prates (B13) le Odor (C1) leres along Living duced Iron (C4 duction in Tilled issed Plants (Din Remarks) d Concave Surfa	g Roots (C3) d Soils (C6) () (LRR A)	Secondary Indicate Water-Sta Drainage X Dry-Seas Saturation Geomorp Shallow A Frost-Hea FAC-Neu Raised A	ors (2 or more required) ained Leaves (B9) (NW coast) Patterns (B10) on Water Table (C2) n Visible on Aerial Imagery (C9) hic Position (D2) Aquitard (D3) ave Hummocks (D4) tral Test (D5) nt Mounds (D6) (LRR A)

(*)

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

Project/Site:	Cedarbrook S	Site			City/County:	King	Sampling	Date:	9/6/2	016
Applicant/Owner:	Seattle Public	Schools			State:		Sampling I	-	F-1	6
Investigator(s):	Katharine Lee	e, Kate Machata				nship/Range:	S4 T26N R4E			
Landform (hillslope, terrace			terrace			Local relief:		Slope (9	/\· 1	
Subregion (LRR):	Α -	Lat:		66422	Langu	-122.307170	concave	Slope (%		00.04
Soil Map Unit Name:	Not Mapped	Lat.	47.7	00422				Datu	m	GS 84
Are climatic / hydrologic co		aita funical for t	hia tima af			classification:	upland		101 0	
Are Vegetation						X No Are "Normal Ci	(If no, exp ircumstances"	lain in R	emarks)	
Are Vegetation		, or Hydrology		significantly di		present? (If need	led, explain any			
•		, or Hydrology		naturally probl	lematic?	answers in	remarks)	Yes	X No	
SUMMARY OF FIND	INGS – Atta	ch site map sh	owing samp	oling point lo	cations, trar	nsects, important	features, etc.			
Hydrophytic Vegetation Properties of Hydric Soil Present?	resent?	Yes	X	No	Is the	Sampled Area				
Wetland Hydrology Prese	n+2	Yes	X	No		a wetland?	12			
	iit?	Yes	X	No		PERMITTED AND PROPERTY OF THE STATE OF THE S	Yes X	No_		_
Remarks:										
VEGETATION		**************************************								
		***************************************	Absolute	Dominant	Indicator	Dominance	Test worksheet:			
Tree Stratum (Plot size:	30 ft)		% Cover	Species?	Status	Number of D	ominant Species			
Alnus rubra				No	FAC	That Are OB	L, FACW, or FAC:		3	(A)
2.						·				-
3.				(•	Total Numbe	er of Dominant			
4.				1		-	oss All Strata:		3	(B)
		Total Cover:	0			- Topecies Acid	oss All Ottata.	_		- (13)
Sapling/Shrub Stratum (P	lot size: 30 ft)	rotal Cover.								
Rubus spectabilis							ominant Species		1000/	
2. Rubus armeniacus			40	Yes	FAC	-	L, FACW, or FAC:		100%	(A/B)
2			50	Yes	FAC	-	Index worksheet:			
nex aquilolium			10	No	FACU	Total %	Cover of:		Multi	ply by:
4	3					OBL species	0 ×	1 =		
5						FACW speci	es 10 x :	2 =	20	-
		Total Cover:	100		• • • • • • • • • • • • • • • • • • • •	FAC species	90 x :	3 =	270	-
Herb Stratum (Plot size: 5	ft)		***************************************			FACU specie			40	-
Equisetum telmateia			10	Voo	EACIA!	L				-
2.				Yes	FACW	UPL species				
3.			P			Column Tota			330	-
					-	- <u> </u>	Prevalence Index =	= B/A =	3	3.00
4					-		Rapid Test for Hyd	rophytic	: Vegetat	tion
5.						Х	Dominance Test is	>50%		
6					-	X	Prevalence Index i	s ≤3.0 ¹		
7.							Morphological Adapta	tional (O		nadina
8.							data in Remarks or or			
		Total Cover:	40							
Woody Vine Stratum (Plo	ot C:	Total Cover:	10				Wetland Non-Vasc			
	or Size, 5 ft)						Problematic Hydrophy	tic Vegel	tation' (Ex	plain)
1.					-	Indicators of h	ydric soil and welland	hydrolog	gy must b	e
2			-			present.				
		Total Cover:	0	5 3000000000000000000000000000000000000		Hydrophytic	Vegetation			
% Bare Ground in Herb St	ratum	90 %	6			Present?	Yes	X N	10	
Remarks:										
ર		Ale								
		Also o	me non-nativ	e norticultural	weeping will	ow in tree layer roo	oted outside wetlan	d.		

	e Description. (Descr	ine to the d	eptn needed to	uocument	the indicator	or commit u	ne absence of indicators.)	
	Matrix				Features			
epth	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
.,)-4	10YR 3/2	100	,				silt loam	mucky
12	10YR 3/2	98	7.5YR 3/4	2	C	PL, M	loam	mucky
-	10YR 3/1	100						mucky
	1011(3/1							
•								
			-					
	-							
•	-							
ne.	C=Concentration, D=Deplet	tion RM=Red	uced Matrix. ² Lo	cation: PL=P	ore Lining, RC=F	Root Channel, N	Λ=Matrix.	
	Soil Indicators: (Appl						Indicators for Problem	natic Hydric Soils³:
	Histosol (A1)			ndy Redox (2 cm Muck	(A10)
	Histic Epipedon (A2)			pped Matrix			Red Parent	t Material (TF2)
	Black Histic (A3)				Mineral (F1) (e	xcept MLRA	1) Very shallo	w dark surface (TF12)
	Hydrogen Sulfide (A4)			, ,	Matrix (F2)		***************************************	lain in Remarks)
	Depleted Below Dark S	Surface (A11		leted Matri				
	Thick Dark Surface (A1			lox Dark Su				
	Sandy Mucky Mineral (100			Surface (F7)	3	Indicators of hydrophytic ve	getation and
	Sandy Gleyed Matrix (S			lox Depress			wetland hydrology must be	
	Saridy Gleyed Matrix (C	, (FC		- Doprood				
oth (Hydric Soil Pr Yes X	No
pth mark	KS:							
mark								
mark	OLOGY	s:						
mark /DR	COLOGY d Hydrology Indicator		ficient)					No
mark OR etlan	COLOGY d Hydrology Indicators Indicators (any one ind			er-Stained Le	aves (B9) (excep	t NW coast)	Yes X Secondary Indicators (2	No
mark /DR tlan mary	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1)		Wate		aves (B9) (excep	t NW coast)	Yes X Secondary Indicators (2	or more required) Leaves (B9) (NW coast)
/DR	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2)		Wate	Crust (B11)	t NW coast)	Yes X Secondary Indicators (2 Water-Stained	or more required) Leaves (B9) (NW coast)
/DR	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3)		Salt	Crust (B11 atic Invertel) brates (B13)	t NW coast)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W.	or more required) Leaves (B9) (NW coast)
/DR tlan mary	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	licator is suf	Salt Aqu Hyd	Crust (B11 atic Invertel rogen Sulfic) brates (B13) de Odor (C1)		Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W.	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9)
mark /DR etlan mary	COLOGY d Hydrology Indicators Indicators (any one indicators (A1) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	licator is suf	Wate Salt Aqu Hyd Oxid	Crust (B11 atic Invertel rogen Sulfic ized Rhizospl) brates (B13) de Odor (C1) heres along Livin	g Roots (C3)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W Saturation Visil	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2)
/DR etlan mary	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	licator is suf	Wate Salt Aqu Hyd Oxid	Crust (B11) atic Invertel rogen Sulfic ized Rhizospl sence of Re) brates (B13) de Odor (C1) heres along Livin educed Iron (C4	g Roots (C3) ‡)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W. Saturation Visil Geomorphic Po	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3)
mark /DR etlan mary	COLOGY d Hydrology Indicators Indicators (any one indicators (A1) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	licator is suf	Wate Salt Aqu Hyd Oxid Pres Rec	Crust (B11 atic Invertel rogen Sulfic ized Rhizospl sence of Re ent Iron Rec) brates (B13) de Odor (C1) heres along Livin duced Iron (C4 duction in Tille	g Roots (C3) 4) d Soils (C6)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W. Saturation Visil Geomorphic Po	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) ummocks (D4)
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/DR etlan mary	COLOGY d Hydrology Indicators Indicators (any one indicators (Al) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6	dicator is suf	Wate Salt Aqu Hyd Oxid Pres Rec Stur Othe	Crust (B11) atic Invertel rogen Sulfic ized Rhizospl sence of Re ent Iron Rec ated or Stres er (Explain i) brates (B13) de Odor (C1) heres along Livin duced Iron (C4 duction in Tille	g Roots (C3) 4) d Soils (C6) 1) (LRR A)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita Frost-Heave Ho FAC-Neutral To	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) position (D2) rd (D3) ummocks (D4) est (D5)
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TDR etlan mary	COLOGY d Hydrology Indicators Indicators (any one indicators (any one indicators) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 Inundation Visible on Aerial Indicators:	dicator is suf	Salt Aqu Hyd Oxid Pres Rec Stur Othe	Crust (B11 atic Invertel rogen Sulfic zed Rhizospl sence of Re ent Iron Rec ent Iron Rec et (Explain i sely Vegetate	brates (B13) de Odor (C1) heres along Livin duced Iron (C4 duction in Tille ssed Plants (D in Remarks) ed Concave Surfa	g Roots (C3) 4) d Soils (C6) 1) (LRR A)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita Frost-Heave Ho FAC-Neutral To	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) position (D2) rd (D3) ummocks (D4) est (D5)
Mark /DR tlan mary X Ild O	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 nundation Visible on Aerial bservations: Water Present?	dicator is suf	Wate Salt Aqu Hyd Oxid Pres Rec Stur Othe Spar	Crust (B11) atic Invertel rogen Sulfic ized Rhizospl sence of Re ent Iron Rec ated or Stres er (Explain i	brates (B13) de Odor (C1) heres along Livin duced Iron (C4 duction in Tille ssed Plants (D in Remarks) d Concave Surfa	g Roots (C3) 4) d Soils (C6) 1) (LRR A)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita Frost-Heave Ho FAC-Neutral To Raised Ant Mo	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) position (D2) rd (D3) ummocks (D4) est (D5)
Mark DR Mary Ma	ROLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 nundation Visible on Aerial bservations: Water Present?	(icator is suf i) Imagery (B7) Yes Yes	Wate Salt Aqu	Crust (B11 atic Invertel rogen Sulfic zed Rhizospl sence of Re ent Iron Rec ent Iron Rec et (Explain i sely Vegetate	brates (B13) de Odor (C1) heres along Livin duced Iron (C4 duction in Tille ssed Plants (D in Remarks) ed Concave Surfa	g Roots (C3) 4) d Soils (C6) 1) (LRR A) ace (B8)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita Frost-Heave Ho FAC-Neutral To Raised Ant Mo	or more required) Leaves (B9) (NW coast) erns (B10) ater Table (C2) ble on Aerial Imagery (C9) osition (D2) rd (D3) ummocks (D4) est (D5) unds (D6) (LRR A)
mark CDR etlan mary X Idd O fface tter T turration	COLOGY d Hydrology Indicators Indicators (any one ind Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 nundation Visible on Aerial bservations: Water Present?	i) Imagery (B7) Yes Yes Yes	Wate Salt Aqu	Crust (B11 atic Invertel rogen Sulfic ized Rhizospl sence of Re ent Iron Rec ated or Stres er (Explain i sely Vegetate	brates (B13) de Odor (C1) heres along Livin educed Iron (C4 duction in Tille ssed Plants (D in Remarks) ed Concave Surfa Depth (in): Depth (in):	g Roots (C3) d Soils (C6) l) (LRR A) ace (B8)	Yes X Secondary Indicators (2 Water-Stained Drainage Patte X Dry-Season W Saturation Visil Geomorphic Po Shallow Aquita Frost-Heave H FAC-Neutral To Raised Ant Mo Wetland Hydro Yes X	or more required) Leaves (B9) (NW coast) Perns (B10) ater Table (C2) ble on Aerial Imagery (C9) position (D2) rd (D3) ummocks (D4) est (D5) unds (D6) (LRR A)

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

Project/Site:	Cedarbrook Site			City/County:	King	Sampling	Date:	9/6/2	2016
Applicant/Owner:	Seattle Public Schools			State:	WA	Sampling		F-	17
Investigator(s):	Katharine Lee, Kate Mach	nata	· · · · · · · · · · · · · · · · · · ·		 nship/Range:	S4 T26N R4E	_		
Landform (hillslope, terrace	etc.):	terrace			Local relief:	convex	Slope (P/A - 1	
Subregion (LRR):	A Lat		66339	Long:	-122.307243	CONVEX		-	CC 04
Soil Map Unit Name:	Not Mapped		00000				Datu	IIII	GS 84
	nditions on the site typical t	for this time of us	2052		classification:	upland			
Are Vegetation	,Soil , or Hydrolog		sar <i>r</i> significantly di	Yes	X No Are "Normal Ci	ircumstances"	plain in R	Remarks)	
Are Vegetation	,Soil , or Hydrolog				present? (If need				
		Jy'	naturally probl	iematic?	answers in	remarks)	Yes_	<u>X</u> No	o
Hydrophytic Vegetation Pr	NGS - Attach site map	snowing samp	ling point lo	cations, trar	isects, important	t features, etc.			
Hydric Soil Present?			No	Is the	Sampled Area				
Wetland Hydrology Preser	Yes nt? Yes	-	No X No X	10.0000 -0.00	a wetland?			v	
Remarks:	Tes		No X			Yes	No_	<u> </u>	_
remarks.									
VEGETATION									
		Absolute	Dominant	Indicator	Dominance	Test worksheet:			
Tree Stratum (Plot size: 3	30 ft)	% Cover	Species?	Status	The same of the sa	ominant Species			
Populus balsamifera		20	Yes	FAC	That Are OB	L, FACW, or FAC:		4	(A)
2. Alnus rubra		30	Yes	FAC	•	_,	-		- · · ·
3.									
4.				. ———	- I otal Numbe	er of Dominant			
					Species Acro	oss All Strata:	_	4	_(B)
Capling/Charle O	Total Cover	:50							
Sapling/Shrub Stratum (PI	ot size: 30 ft)				Percent of D	ominant Species			
1. Rubus armeniacus		75	Yes	FAC	l	L, FACW, or FAC:		100%	(A/B)
2.			-		-	Index worksheet:	~~~~		(,,,,)
3.					2 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	Cover of:	N. A.	NA: 11+	iply by:
4.		-			•			iviuiti	ipiy by.
					OBL species	0 x	1 =		_
5				and the second	FACW speci	es 25 x	2 =	50	
	Total Cover	75			FAC species	125 ×	3 =	375	_
Herb Stratum (Plot size: 5	ft)				FACU specie				_
Equisetum telmateia		25	Voc	EACIAL	UPL species				_
2.			Yes	FACW	=			-	-
3.		_			Column Tota	ils: 150 (A	4)		(B)
		_			F	Prevalence Index	= B/A =	2	2.83
4.						Rapid Test for Hyd	drophytic	Vegeta	tion
5					X	Dominance Test is	>50%		
6.		_	-	-	-	Prevalence Index			
7.						rievalence index	15 23.0		
8.		-		-	- 1	Morphological Adapta	,		
·		_		-	_	data in Remarks or o	n a separ	ate sheet)
	Total Cover	r: 25				Wetland Non-Vaso	cular Pla	ınts ¹	
Woody Vine Stratum (Plo	t Size: 5 ft)					Problematic Hydroph	vtic Veae	tation ¹ (Ex	xplain)
1.									
2.		-			present.	ydric soil and wetland	1 hydrolog	gy must b	oe .
	T.1.10			-	-				
% Bare Ground in Herb Str	Total Cove				192	Vegetation			
Bara Stouriu ili merb S(i	atum 60				Present?	Yes_	<u>X</u> N	10	
Remarks:			A. C.						
				*					

SOIL							Sampl	ing Point: F-17
Profil	le Description: (Describe to	the de	oth needed to	document	the indicator	or confirm t	the absence of indicators.)	
Depth	Matrix				Features			
(in.)		%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
	(5) (6)	9 .	10YR 4/4	1	C	M	sandy loam	more gravel with depth
			-					
¹ Type:	C=Concentration, D=Depletion, R	M=Reduc	ed Matrix. ² Loc	cation: PL=P	ore Lining, RC=R	coot Channel,		
	: Soil Indicators: (Applicabl			therwise r	noted.)		Indicators for Problematic	: Hydric Soils³:
-	Histosol (A1)			dy Redox (2 cm Muck (A1	0)
	Histic Epipedon (A2)	_	Strip	pped Matrix	(S6)		Red Parent Ma	terial (TF2)
	Black Histic (A3)	_		20020	Mineral (F1) (e	xcept MLR/	Very shallow d	ark surface (TF12)
	Hydrogen Sulfide (A4)	-	Loa	my Gleyed	Matrix (F2)		Other (Explain	in Remarks)
	Depleted Below Dark Surfac	e (A11)		leted Matrix				
	Thick Dark Surface (A12)	, , , _		lox Dark Su	92			
	Sandy Mucky Mineral (S1)	-			Surface (F7)		³ Indicators of hydrophytic vegeta	ation and
	Sandy Gleyed Matrix (S4)	-		lox Depress			wetland hydrology must be pre	esent.
	ctive Layer (if present):						Hydric Soil Prese	nt?
Type: _ Depth -							Yes	No X
Remark	KS:							
	ROLOGY							
	d Hydrology Indicators:	' effic	· ·				Secondary Indicators (2 or r	nora required)
	/ Indicators (any one indicato	r is sumo			(DO) (eyeen	· huar coast)		ves (B9) (NW coast)
	Surface Water (A1)	_			aves (B9) (except	l NVV coasij	Drainage Patterns	
	High Water Table (A2)	_		Crust (B11)			Dry-Season Water	
-	Saturation (A3)	_			brates (B13)			
	Water Marks (B1)				de Odor (C1)			on Aerial Imagery (C9)
	Sediment Deposits (B2)	_			heres along Living		Geomorphic Positi	
	Drift Deposits (B3)	_			duced Iron (C4		Shallow Aquitard (
	Algal Mat or Crust (B4)	_			duction in Tilled			
	Iron Deposits (B5)	_			ssed Plants (D	1) (LRR A)	FAC-Neutral Test (Raised Ant Mound	
	Surface Soil Cracks (B6)	1000			in Remarks)	(DO)		o (DO) (EIRICE)
!	Inundation Visible on Aerial Image	ery (B7) _	Spars	sely Vegetate	ed Concave Surfa	ce (B ₀)		
Field O	bservations:							
	Water Present?	Yes	No	Х	Depth (in):			V-100 (500)
Water T	able Present?	Yes _	No	Х	Depth (in):		Wetland Hydrolog	
	ion Present?	Yes _	No	X	Depth (in):		Yes	X
(include	es capillary fringe)		' ' - well or	del abotos	aravious insn	actions) if s	majahla.	
Describ	pe Recorded Data (stream ga	uge, mo	nitoring well, as	anai priotos				
Remark	(S:				Soi	l is slightly n	noist.	

Project Name:

Cedarbrook Site

Date(s) of Site Visit(s):

9/6/2016

Rated by:

Katharine Lee Trained by Ecology? Kate Machata

Yes Yes

Figures

res	Wetland	
Cowardin plant classes	Figure 1	
Hydroperiods / outlet	Figure 2	
150' boundary	Figure 3	
Contributing basin	Figure 5	
1 km radius polygon	Figure 4	
303(d) listed waters/ TMDLs	Figure 6	

Source of base aerial photo or map for figures:

Category of Wetland Based on Function

Category I = 23 - 27

Category III = 16 - 19

Category II = 20 - 22

Category IV = 9 - 15

Summary table of scores and corresponding categories

		Slope						Rive	erine
		Α	В	С	E	G	Н	D	F
Quality	Site Potential		L	L	L	L	L	М	М
ð	Landscape Potential	M	М	М	M	М	М	Н	Н
Water	Value	Н	Н	Н	Н	Н	Н	М	M
3	Rating	6	6	6	6	6	6	7	7
gic	Site Potential	L	L	L	L	М	L	М	М
olo	Landscape Potential	M	M	М	M	M	М	Н	Н
Hydrologic	Value	М	М	M	M	М	М	М	М
	Rating	5	5	5	5	6	5	7	7
_ ا	Site Potential	M	L	L	М	М	L	L	М
Habitat	Landscape Potential	L	L	L	L	L	L	L	L
표	Value	Н	Н	Н	Н	L	L	Н	Н
	Rating	6	5	5	6	4	3	5	6
	Total	17	16	16	17	16	14	19	20
	Category	111	111	111	111	101	IV	111	11

Category Based on Special Characteristics

	Slope						Rive	erine
Special Characteristics	Α	В	С	E	G	Н	D	F
Estuarine	1	 					2000	-
High Conservation Value								
Bog	 							
Mature Forest								
Old Growth Forest								
Coastal Lagoon								
Interdunal								
None of the above	X	X	X	X	X	X	Y	X

Classification of Wetland Units in Western W	ashingto	on						
WETLAND #	A	В	С	D	E	F	G	Н
 Are the water levels in the entire unit usua 	ally congt	rolled by	tides?					
No	X	X	X	Х	Х	Х	X	Х
Yes = Tidal Fringe				Ι				
2. The entire wetland is flat and precipitation	is the or	dy source	a />90%	of water	to it			
Groundwater and surface water are not so	is the of	water	e (~30 %)) of water	to it			
No	X	X	l x	X	Х	X	Х	Х
Yes - Flats	<u> </u>	-	 ^	 ^				
res - riats			l					
3. Does the entire wetland meet both of the t	following	criteria?						
a. The vegetated part of the wetland is on	the shor	or of a h	ody of ne	ermanent	onen wat	er at least	20 acres	
b. At least 30% of the open water areas is	doopert	han 6 6	fi	Jillian Cit	open was	or at loadt		
No	X	X	T X	X	Х	Х	Х	Х
Yes - Lake-fringe		_ ^_	 ^	\ \tag{\chi}				
res - Lake-Illige	L		L	لــــــــــــــــــــــــــــــــــــــ				
4. Does the entire wetland unit meet all of the	a followin	a criteris	2					
	X	X	X		X	l	Х	Х
a. On a slope b. Unidirectional flow	- x	X	X		X		X	X
c. No impoundment	<u> </u>	X	X		X		X	X
•				- V				
No		- ,,		X	Х	X	х	Х
Yes - Slope		X	X					
			•					
Does the entire wetland unit meet all of the	e followin	g criteria	(?	T V T		Х		
a. In valley or channel				X		X		
b. Flooding at least 2yrs		- 0		Х	V		X	X
No No	X	X	Х	x	X	Х		^
Yes - Riverine					101	^		
				:turet	ad for oon	an pariod?	í	
6. Is the entire unit in a topgraphic depression			onas or	is saturat	ed for sor	X X	Х	X
No	Х	X	X	X	X		_^_	
Yes - Depressional								
				na autlat				
7. Is the entire wetland located in a very flat a				X	Х	Х	Х	X
No	X	X	X	-^-		_^	_^	
Yes - Depressional				LL				
9. Savaral Catagorias	Х		-	Г				
8. Several Categories	S,D							
List Categories Category for Rating	S	s	S	R	S	R	S	S
Category for Rating	3	<u> </u>		- 13				
Г				D. I		EI	G	н

Standard Buffer Without BMPs Date(s) of Site Visit(s): Rated by:

9/6/2016 rained by Ecology? Katharine Lee; Kate Machata Yes

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			Wetland Name	A	В	၁	Е	g	Н	
WATER OI	WATER QUALITY FUNCTIONS		Total Size (acres)	0.57	0.17	0.01	0.76	0.32	90.0	Figure #
Site Pot	ential: Does the si	Site Potential: Does the site have the potential to improve water quality?	er quality?							
S 1.1	Slope	Characteristics of the average slope	1% or less = 3							
	_		1 - 2% = 2	c	c	c	c	c	•	
			2 - 5% = 1	-	>)	5	>	_	
			> 5% = 0							
\$1.2	Surface soils	Soil is clay or organic	Yes = 3	c	c	c	c	c	c	
<u> </u>			0 = 0N	>	0	0	>)	>	
\$ 1.3	Plant	Dense, uncut, herbaceous plants	> = 90% area = 6							
	Characteristics	(>75% cover)	> = 1/2 area = 3							
			> = 1/4 area = 1	ო	m	0	က	ო	0	-
		Dense, woody plants	> 1/2 area = 2							
			none of above 0							
		Total for S1 (H=12; M=6-11; L=0-5)	A=6-11; L=0-5)	3	3	0	3	3	-	
		Rating	Rating of Site Potential	7 .	Т	_				
						-	-			

Landscape Potential: Does the landscape have the potential to support the water quality function of the site?

\$ 2.1	S 2.1 Is >10% of the area within 150' on the uphill side of wetland in land uses that generate pollutants?	Yes = 1 No = 0	-	-	1	1	-	-	Fig 3a - 3c
\$ 2.2	S 2.2 Are there other sources of pollutants entering wetland?	Yes = 1 No = 0	~	-	-	-	-	-	
	Total for	Total for S2 (M= 1-2; L=0)	2	2	2	2	2	2	
	Rating of Land	Rating of Landscape Potential	M	Σ	M	M	M	Σ	

Kating	Kating of Value: is the water qualify improvement provided by the site valuable to society?	clety?					9		
\$ 3.1	S 3.1 Direct (<1 mi) discharge to 303(d) water	7	7	7	,	,	,	0	
	0 = 0N	_	-	-	-	-	_	o BL	
S 3.2	Wetland in 303(d) list basin or sub-basin	۲	~	7	•	7	•	() ()	
	0 = 0N	_	-	_	-	_	_	o Bi	
\$ 3.3	S 3.3 Site identified as important to water quality (TMDL)	c	c	c	c	c	c	<u>ن</u>	
	No = 0	>	5	>	>	>)	0 D	
	Total for S3 (H=2-4; M=1; L=0)	2	2	2	2	2	2		
	Rating of Value	Н	т	Н	Н	Н	I		
	Improving Water Quality: Score Based on Ratings	9	9	y	9	9	9		

DROLO	HYDROLOGIC FUNCTIONS		Wetland Name	A	В	c	ш	C	2	7
ite Pot	tential: Does the s	Site Potential: Does the site have the potential to reduce flooding and erosion?	ing and erosion?				1		=	igure#
S 4.1	Characteristics of Plants	Dense, uncut, rigid plants cover >90% of wetland = All other conditions =	er >90% of wetland = 1 All other conditions = 0	0	0	0	0	-	0	
		Total for S	Total for S4 (M=1; L=0)	0	0	0	0		C	
		Rating c	Rating of Site Potential	٦	٦	٦	L	Σ		
Landsc	Landscape Potential: Does the landscape		have the potential to support the hydrologic functions of the site?	c function	ns of the	site?				
S 5.1	Buffer land use	Is >25% of 150	Yes = 1							
a		uses or cover that generate excess surface runoff?	0 = 0N	~	~	τ,	~	_	~	Fig 3a - 3c
		Total for	Total for S5 (M= 1; L=0)	1	-	-	-	1	,-	
		Rating of Land	Rating of Landscape Potential	Σ	Σ	Σ	Σ	Σ	Σ	
Rating	of Value: Are the	Rating of Value: Are the hydrologic functions provided by the site valuable to society?	site valuable to society	۸خ						
S 6.1	Flooding	Distance to nearest areas downstream that have	stream that have							
		All H	flooding problems							
		Sub-basin immediately down-gradient = 2	down-gradient = 2	-	_	τ-	Υ	-	_	
		Sub-basin further	Sub-basin further downgradient = 1					i i		
		No flooding problems anywhere downgradient = 0	e downgradient = 0							
S 6.2	Flood storage	Site is critical part of regional flood	Yes = 2		,	,				
		control plan	0 = 0N	>	0	0	0	0	0	
		Total for S6 (H	Total for S6 (H=2-4; M=1; L=0)	-	-	-	-	-	~	
			Rating of Value	Σ	Σ	Σ	Σ	Σ	Σ	
		Hydrologic : Score Based on Ratings	ased on Ratings	2	2	2	2	9	2	

HABITAT FUNCTIONS	UNCTIONS		Wetland Name	A	В	ပ	Ш	C	=	Figure#
Site Pote	ential: Does the s	Site Potential: Does the site have the potential to provide habitat?	itat?							5000
H1.1	Vegetation	Covering >10% or >1/4 ac:	>= 4 types = 4							
	structure	- Aquatic bed	3 types = 2							
		- emergent plants	2 types = 1							
	Cowardin	- scrub/shrub	1 type = 0	_	_	~	2	0	c	Fig 19-10
	Classes	- forested					ľ	1)	2 2 2 2 2
		- forested with 3+ strata covering								
		>20% area								****
H 1.2	Hydro-period	a. Permanently flooded/ inundated	>=4 types = 3							
		b. Seasonally flooded/ inundated	3 types = 2							
		c. Occasionally flooded/ inundated	2 types = 1							
		d. Saturated only	1 type = 0	က	_	-	က	τ-	τ-	Fig 2a-2c
		e. Permanent stream in/adjacent	lake-fringe= 2))))
		f. Seasonal stream in/adjacent	tidal (fresh)= 2							
			•							
		100		a, b, d, e,	c,	Q	b.d.e.f.b.d	þ	C	

Wetlands
stem - Slope
d Rating Sy
tate Wetlan
Washington Sta

H 1.3	Plant species diversity	Number of species with at least 10 > 19 = 2 sq ft. Not counting reed 5-19 = 1 canarygrass, purple loosestrife, < 5 = 0	~	-	-	-	-	-	
H 1.4	Habitat interspersion	Canada tristle, Eurasian miroli If 4 or more plant classes rating is low = 1 always high mod. = 2 high = 3	2	-	-	2	7	0	Fig 1 & 2
H 1.5	Special habitats Count number:	a. large downed woody debris (>4" dia & 6' long) b. standing snags (>4" dia) c. undercut banks (>2m) or overhanging vegetation (>1m) over stream/ditch d. stable steep banks of fine material for beaver of muskrat (>30% slope) or recent beaver activity. e. >1/4 ac thin-stemmed persistent vegetation or woody branches in areas perm. or seasonally inundated f. <25% cover by invasives in each stratum	ო <u>ი</u>	0	-	۰ - ۵	- o	0	
50000	o Dotential: Doe	Total for H1 (H=15-18; M=7-14; L=0-6) 10 4	M M unctions	4 L	2	თ ≥	∠ ⊠	2	
H 2.1	Accessible habitat	Habitat in 1km polygon abutting >1/3 = 3 wetland using: % undisturbed + 20-33 = 2 [(%mod+low intensity/2)]. Percent of 10-19 = 1 area in polygon	0	0	0	0	0	0	Fig 4
H 2.2	Undisturbed Habitat	Undisturbed habitat in 1 km polygon >50 % = 3 using: % undisturbed + [(% mod + 10-50 % low intensity)/2]. Percent of area in 1-3 patches= 1 polygon <10 % = 0	0	0	0	0	0	0	Fig 4
H 2.3	Land Use Intensity	>50% high intensity = (-2) $<$ or = 50% high intensity = 0	-2	-2	-2	-2	-2	-2	Fig 4
		Total for H2 (H=4-6; M= 1-3; L=<1) Rating of Landscape Potential	2 L	-2 L	-5 L	-5 L	-2 L	-2 L	
Rating of H 3.1	Rating of Value: Is the habitat provided H 3.1 Habitat for species with legal status	itat provided by the site valuable to society? Site meets any habitat criteria (below) = 2 Site has 1 or 2 priority habitats within 100 m = 1 Site does not meet criteria above = 0 Total for H3 (H=2; M= 1; L=0) Rating of Value Habitat: Score Based on Ratings	2 Z I 9	2 7 1 2	2 I 2	2 Z I 9	0 0 1 4	0 0 1 8	
TOTAL SCC	TOTAL SCORE BASED ON RATINGS	ATINGS	17	16	16	17	16	14	

OVERALL WETLAND CATEGORY

I
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A
I WDFW Priority Habitats

WA State Wetland Rating System Riverine Wetlands

Date(s) of Site Visit(s): Rated by:

9/6/2016 Trained by Ecology?

Katharine Lee, Kate Machata

RIVERINE WETLANDS

#oring#	Lignie#																ינו ני	ה ביים			, c	TIG 34,35				
F 0 27	0.27			c	1				∞			10	Σ		~	-	,	-	c	>	7	-	7	-	4	T
D 0.26	0.20			c	>				9			9	M	of the site		-	ν	-	c	>	•	-	7	_	4	エ
Wetland Name	lotal Size (acres)	ıality?	Depressions cover >3/4 area = 8	Depressions cover >1/2 area = 4	Depressions present but cover $<1/2$ area = 2	No depressions present= 0	Trees or shrubs >2/3 area = 8	Trees or shrubs >1/3 area = 6	Herbaceous plants (>6") >2/3 area area = 6	Herbaceous plants (>6") >1/3 area area = 3	Trees, shrubs and ungrazed herb <1/3 area= 0	Total for R1 (H=12-16; M=6-11; L=0-5)	Rating of Site Potential	port the water quality function of	Yes = 1	0 0	Yes = 1	0 = oN	Yes = 1	0 = 0N	Yes = 1	0 = 0N	Yes = 1	No = 0	Total for R2 (H=2-4; M= 1; L=0)	Rating of Landscape Potential
		Site Potential: Does the site have the potential to improve water quality?	De	De	Depressions pr				Herbaceous p	Herbaceous	Trees, shrubs an	Total for R1 (F	•	Landscape Potential: Does the landscape have the potential to support the water quality function of the site?	Wetland within incorporated city or	UGA	Basin includes incorporated city or	UGA	At least 10% basin is field, pasture, or	clearcut with 5 years	>10% of 150 foot buffer is in land uses	that generate pollutants	Other pollutant sources present		Total	Ratir
ONOITONITY VELLA	WATER QUALITY FUNCTIONS	intial: Does the site	Surface	depressions			Structure of plants	•						be Potential: Does the	City or UGA		Contributing Basin	location	Basin	teristics	150 foot buffer		Other pollutants			
100	WAIER QU	Site Pote	R 1.1				R 1.2							Landscal	R 2.1		R 2.2		R 2.3		R 2.4		R 2.5			

Rating of Value: Is the water quality improvement provided by the site valuable to society?

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within 1 mile on tributary that drains within 1 mile to 2				_		,		
303(d) list waters Wetland is along water on 303(d) list or within 1 mile on tributary that drains within 1 mile to 303(d) water TMDL watershed Stream or river has TMDL for nutrients, toxics, or pathogens Watershed or local Site identified as important to water plan quality (yes if water has TMDL) Total for R3 (H=2-4; M=1, Rating of Rating of Rating of Stream or river has TMDL)	Fig 6	i	F1g6	i	Fig 6			
303(d) list waters Wetland is along water on 303(d) list or within 1 mile on tributary that drains within 1 mile to 303(d) water TMDL watershed Stream or river has TMDL for nutrients, toxics, or pathogens Watershed or local Site identified as important to water plan quality (yes if water has TMDL) Total for R3 (H=2-4; M=1, Rating of Mater Quality : Score Based on Ra	~)		<u>,</u>	-	Σ	7
303(d) list waters Wetland is along water on 303(d) list or within 1 mile on tributary that drains within 1 mile to 303(d) water TMDL watershed Stream or river has TMDL for nutrients, toxics, or pathogens Watershed or local Site identified as important to water plan quality (yes if water has TMDL) Total for R3 (H=2-4; M=1, Rating of Mater Quality : Score Based on Ra	-		5		o	1	W	<i>L</i>
R 3.2	 303(d) list waters Wetland is along water on 303(d) list or within 1 mile on tributary that drains within 1 mile to 303(d) water		toxics, or pathogens	Site identified as important to water	quality (yes if water has TMDL)	Total for R3 (H=2-4; M=1; L=0)	Rating of Value	Improving Water Quality : Score Based on Ratings

1.0			wetland name		ц.	Figure#
Site Pote	Site Potential: Does the site	have the potential to reduce flooding and erosion?	nd erosion?			
R 4.1	Overbank Storage:		Ratio > 20 9			
	Average Width of		Ratio 10-20 6			
	wetland/ average		Ratio 5- <10 4	7	2	Fig 2a,2b
	width of stream	2"	Ratio 1-<5 2			
			Ratio <1 1			
R 4.2	Plants (or LWD)	Forest or shrub >1	Forest or shrub >1/3 OR emergent >2/3 area 7			
	that slow down	Forest or shrub >1/	Forest or shrub >1/10 OR emergent >1/3 area 4	4	7	
	flood velocity	Plants	Plants do not meet above criteria 0			
		Total for R4 (H:	Total for R4 (H=12-16; M=6-11; L=0-5)	9	6	
			Rating of Site Potential	Σ	Σ	
0 5.4	D E 4 Downsoutting	Otrom or rivor adjacent to uniform in the competence of the control of the circuit		2110 2110		
	רסאווסמנווופ	סנו למווו טו וועלו מתוכמלות וט שלוומות וצ	0 = Sa L		τ	
		downcut	No = 1	-	-	
R 5.2	Up-gradient	Up-gradient watershed includes UGA	Yes = 1	7		
	watershed	or incorporated area	0 = 0N	-	_	
R 5.3	Up-gradient dam	Up-gradient river or stream is) = Yes = (0		
		controlled by dam(s)	No = 0	_	-	
		Total	Total for R5 (H=3; M= 1-2; L=0)	3	3	
		Ratin	Rating of Landscape Potential	H	I	
Rating (of Value: Are the hy	Rating of Value: Are the hydrologic functions provided by the site valuable to society?	valuable to society?			
R 6.1	Flooding occurs:	Damaging flooding in sub-basin immediately down-gradient =	nmediately down-gradient =			
	-	Surface flooding in sub-ba	Surface flooding in sub-basin farther down-gradient = 2			
		No flooding proble	No flooding problems anywhere downstream	~	-	

s critical part of regional flood	$No = 0 \qquad No = 0$	Total for R6 (H=2-4; M=1; L=0) 1 1	Rating of Value M M	Hydrologic: Score Based on Ratings 7 7 7
Flood storage Site is critical part of regional flood	control plan			£
R 6.2				

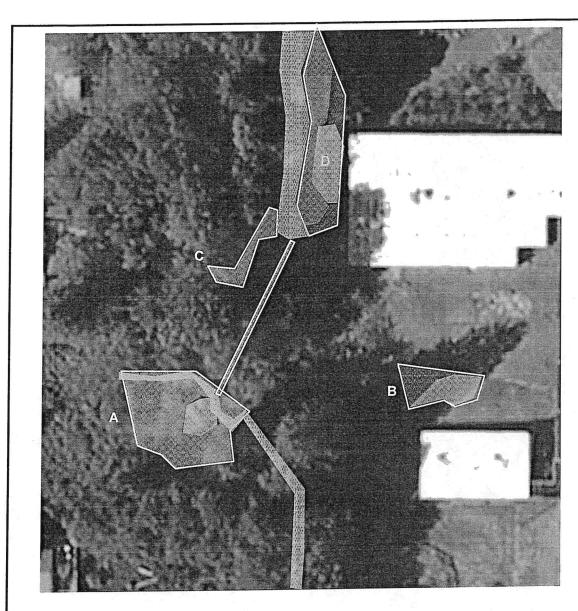
HABITATE	HABITAT FUNCTIONS		Wetland Name	۵	ц	Figure#
Site Pot	the si	te have the potential to provide habitat?				
H1.1	Vegetation	Covering >10% or >1/4 ac:	>= 4 types = 4			
	structure	- Aquatic bed	3 types = 2			
	No.	- emergent plants	2 types = 1			
	Cowardin Classes	- scrub/shrub	1 $type = 0$	_	~	Fig 1a,1b
		- forested				
		- forested with 3+ strata covering				
-		>20% area				
H 1.2	Hydro-period	a. Permanently flooded/ inundated	>=4 types = 3			
		b. Seasonally flooded/ inundated	3 types = 2			
		c. Occasionally flooded/ inundated	2 types = 1	c	r	קט טט
		d. Saturated only		4	า	1 19 4a, 4D
		e. Permanent stream in/adjacent	lake-fringe= 2			
		f. Seasonal stream in/adjacent	tidal (fresh)= 2			
				b, d, e	b, c, d, e	
H 1.3	Plant species	Number of species with at least 10 sq	> 19 = 2			
-	diversity	ft. Not counting reed canarygrass,	5-19 = 1	,	•	
		purple loosestrife, Canada thistle,	< 5 = 0	-	-	
		Eurasian milfoil				
H 1.4	Habitat	If 4 or more plant classes rating is	none = 0			
	interspersion	always high	low = 1	c	τ.	(
			mod. = 2		-	7-Y
			high = 3			
H 1.5	Special habitats	a. large downed woody debris (>4" dia & 6' long)				
		b. standing snags (>4" dia)				
	Count number of	c. undercut banks (>2m) or overhanging vegetation (>1m) over	ion (>1m) over	0	7	
	special habitat	stream/ditch				
	features:	d. stable steep banks of fine material for beaver of muskrat (>30% slope)	of muskrat (>30% slope)			
					a ر	
5		Total for H1 (H=15	Total for H1 (H=15-18; M=7-14; L=0-6)	4	8	
		Rati	Rating of Site Potential	7	Σ	

Landsca	pe Potential: Does	Landscape Potential: Does the landscape have the potential to support the habitat functions of the site?	inctions of the	Site?		
H 2.1	Accessible habitat	Habitat in 1km polygon abutting	>1/3 = 3			
		wetland using: % undisturbed +	20-33 = 2			
		[(%mod+low intensity/2)]. Percent of	10-19 = 1		0	Fig 4
		area in polygon	<10 = 0			
H 2.2	Undisturbed	Undisturbed habitat in 1 km polygon	>50 % = 3			
	Habitat	using: % undisturbed + [(% mod + low	10-50 %			
		intensity)/2]. Percent of area in polygon	1-3 patches= 2	0	0	Fig 4
		8	>3 patches= 1			1
			<10 % = 0			-
H 2.3	Land Use Intensity	>50% high ii	>50% high intensity = (-2)	c	c	L
		< or $=$ 50% high intensity $=$ 0	ntensity = 0	7-	7-	FIG 4
		Total for H2 (H=4-6; M= 1-3; L=<1)	-3; L=<1)	-2	-2	
		Rating of Landscape Potential	Potential	7		

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7 I 9	2 H 2	for H3 (H=2; M= 1; Rating of V core Based on Rat		
2	2	Total for H3 (H=2; M= 1; L=0)		
		Site does not meet criteria above = 0		
7	7	Site has 1 or 2 priority habitats within 100 m = 1	with legal status	
		Site meets any habitat criteria (below) = 2	Habitat for species	-

TOTAL	TOTAL SCORE BASED ON RATINGS	SULL	19	20	
OVERALL	OVERALL WETLAND CATEGORY	χγ			100
	H.3.1	WDFW Priority Habitats	Ω	Ц	
		Aspen Stands			
		Biodiversity Areas and Corridors			
		Herbaceous Balds			
		Old Growth / Mature Forests			
		Oregon White Oak			
		Riparian	×	×	
		Westside Prairie			
		Instream	×	×	
		Nearshore			
		Caves			
		Cliffs			
		Talus			
		Snags & Logs	×	×	
	Site has 3 or more of	or more of the above within 100 meters	Yes	Yes	
		habitat for threatened or endangered species	oN N	No	
	It is mapped as a loc	It is mapped as a location for an individual WDFW Priority Species	No	No	
	It is a wetland of high	It is a wetland of high conservation value as determined by DNR	No	No	
	It has been categoriz	It has been categorized as an important habitat in local planning	8	8	



KEY:

Palustrine Emergent

Palustrine Scrub-Shrub

Palustrine Forested

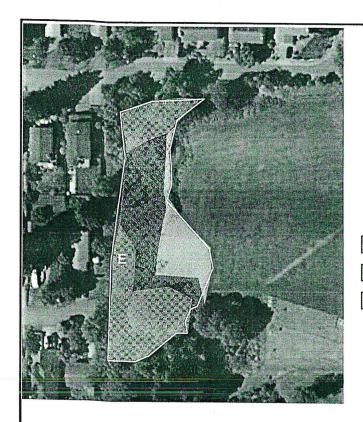




Project # 40958.011 Date: Jan 2017

COWARDIN - WETLANDS A-D

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington RATING FIGURE 1a



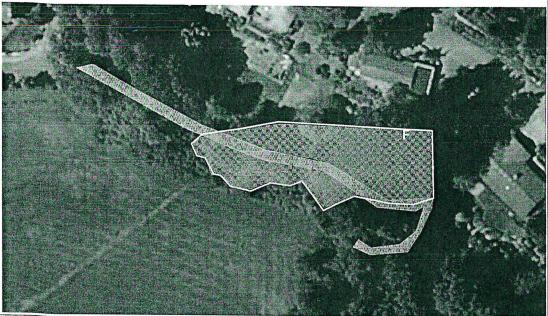
KEY:

Palustrine Emergent

Palustrine Scrub-Shrub

Palustrine Forested

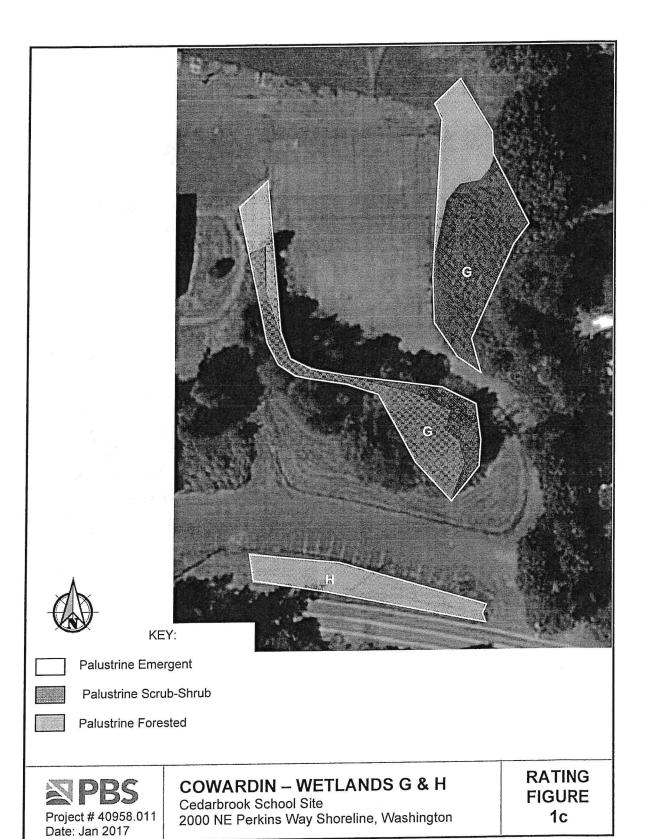


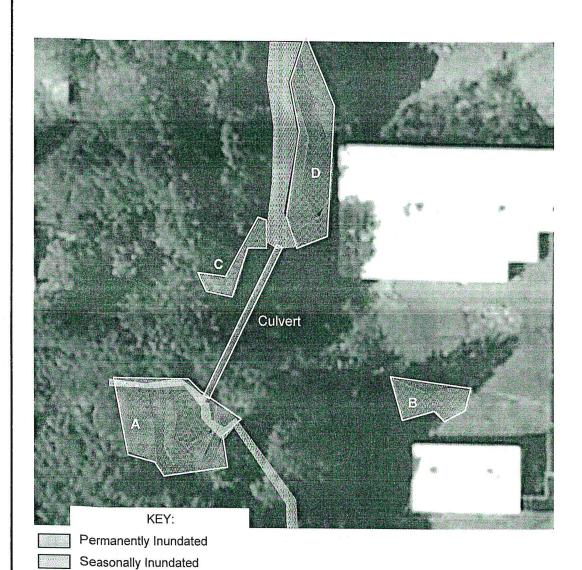


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Project # 40958.011 Date: Jan 2017 COWARDIN - WETLANDS E & F

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington RATING FIGURE 1b







Project # 40958.011 Date: Jan 2017

Occasionally Inundated

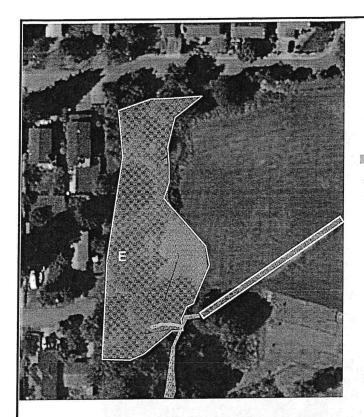
Saturated Only
Perennial Stream
Seasonal Stream

HYDROPERIODS – WETLANDS A-D

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington



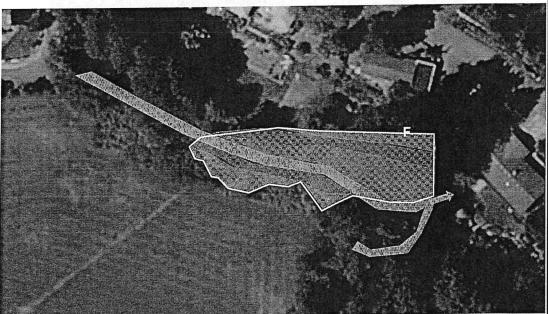
RATING FIGURE 2a



KEY:

- Permanently Inundated (stream)
- Seasonally Inundated
 - Occasionally Inundated
 - Saturated Only
- Perennial Stream
- Seasonal Stream

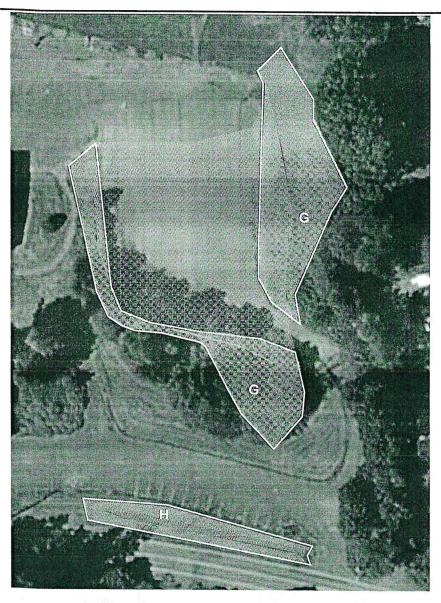






Project # 40958.011 Date: Jan 2017 **HYDROPERIODS – WETLANDS E & F**

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington RATING FIGURE 2b





Permanently Inundated

Seasonally Inundated

Occasionally Inundated

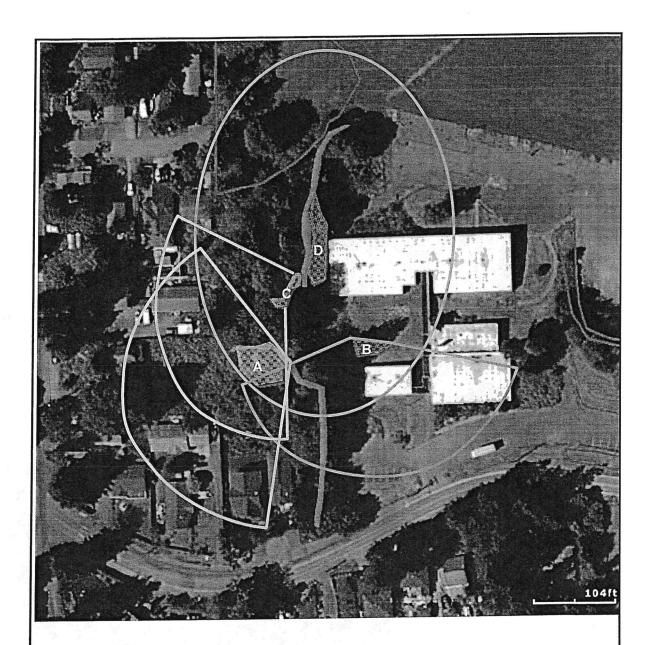
Saturated Only





Project # 40958.011 Date: Jan 2017 HYDROPERIODS - WETLANDS G & H

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington RATING FIGURE 2c



150' Buffer
Wetland A – Slope
Wetland B – Slope
Wetland C – Slope
Wetland D – Riverine



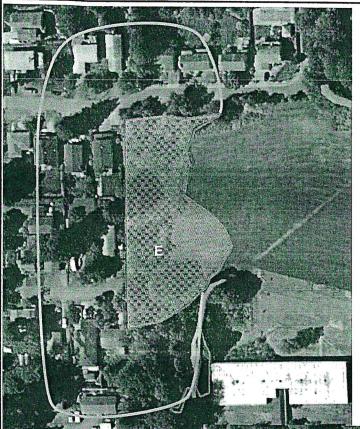


Project # 40958.011 Date: Jan 2017

150' BUFFER - WETLANDS A-D

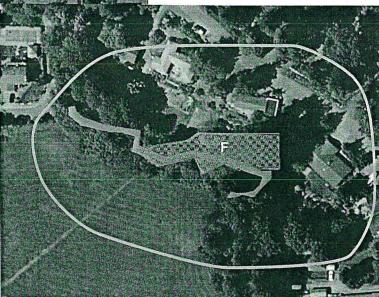
Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington

RATING FIGURE 3a



150' Buffer
Wetland E – Slope
Wetland F – Riverine

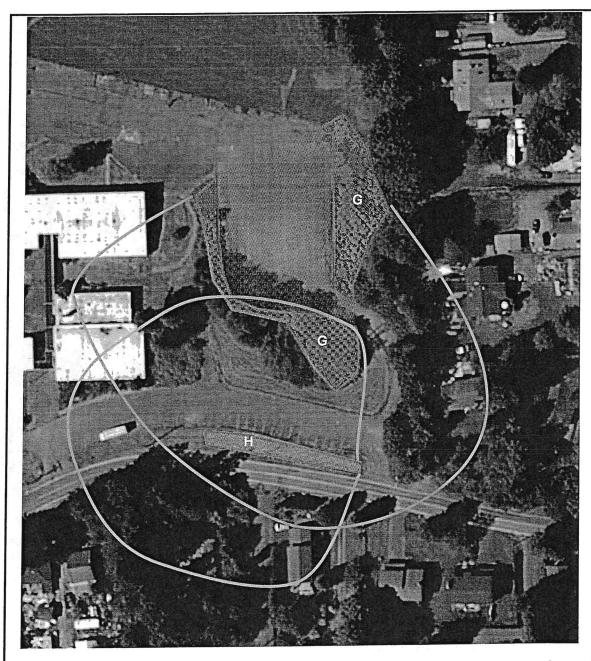




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Project # 40958.011 Date: Jan 2017 150' BUFFER - WETLANDS E & F

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington RATING FIGURE 3b



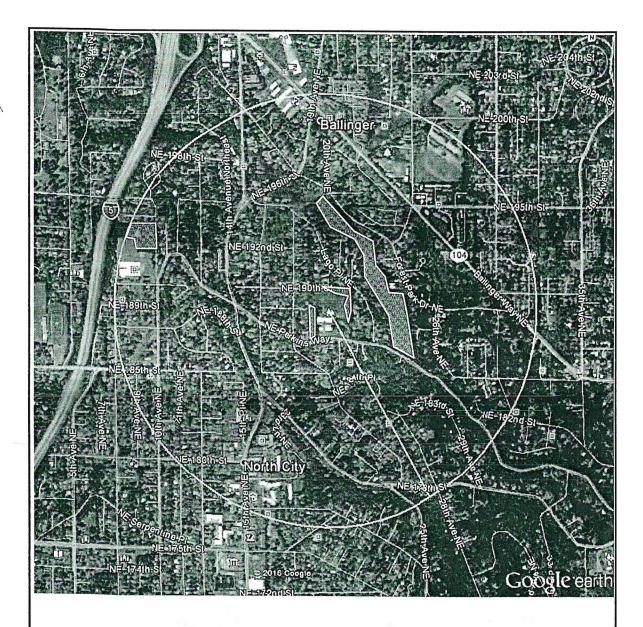
150' Buffer
Wetland G – Slope
Wetland H – Slope





Project # 40958.011 Date: Jan 2017 150' BUFFER - WETLANDS G & H

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington RATING FIGURE 3c



1km Radius – All wetlands No accessible habitat

No relatively undisturbed habitat

Low to moderate intensity land use < 10 percent Balance is high intensity

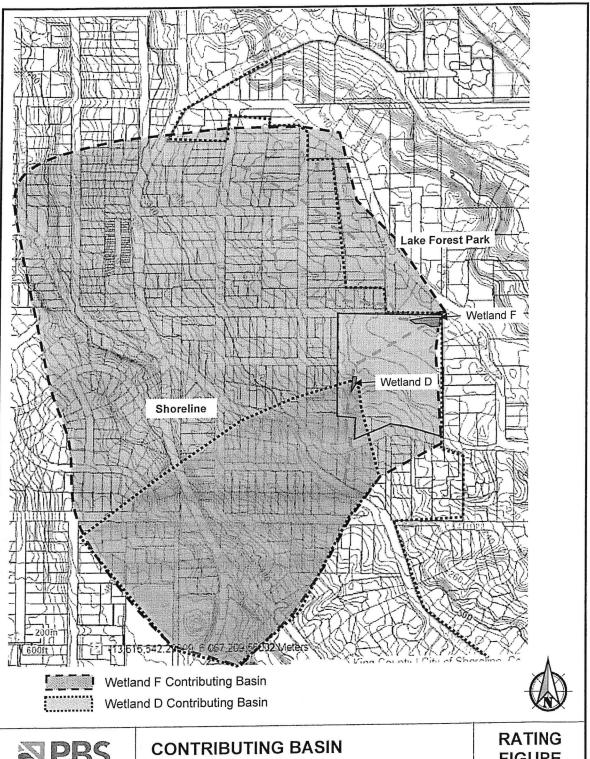




Project # 40958.011 Date: Jan 2017

LAND USE - 1KM RADIUS

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington **RATING FIGURE** 4

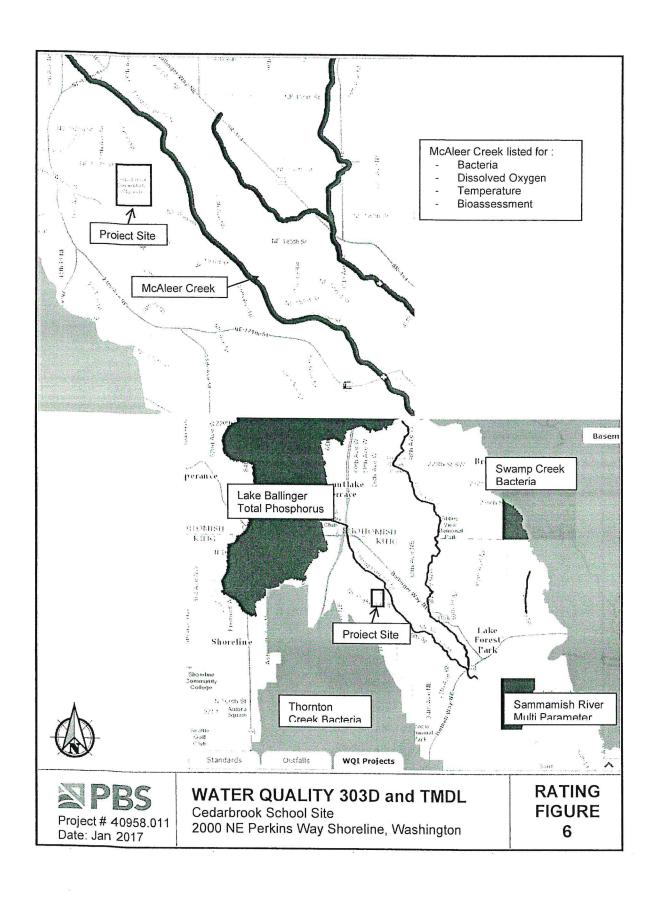




Project # 40958.011 Date: Jan 2017

Cedarbrook School Site 2000 NE Perkins Way Shoreline, Washington

FIGURE 5





APPENDIX D

Hydrophytic Vegetation Indicator Categories

Hydrophytic Vegetation Indicator Categories

The NWPL is a list of wetland plants and their assigned indicator statuses. An indicator status reflects the likelihood that a particular plant occurs in a wetland or upland.

Indicator Code	Indicator Status	Designation	Comment
OBL	Obligate Wetland	Hydrophyte	Plants that always occur in standing water or in saturated soils
FACW	Facultative Wetland	Hydrophyte	Plants that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands
FAC	Facultative	Hydrophyte	Plants that occur in a variety of habitats, including wetland and mesic to xeric nonwetland habitats but commonly occur in standing water or saturated soils
FACU	Facultative Upland	Nonhydrophyte	Plants that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils
UPL	Obligate Upland	Nonhydrophyte	Plants that almost never occur in water or saturated soils

http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/techbio/nwpl may2012 factsheet.pdf

APPENDIX E

Geotechnical Review Letter



May 18, 2017

Mr. Dan Stevens Facilities Modernization Coordinator Shoreline School District 18560 1st Avenue NE Shoreline, Washington 98155

Regarding: Critical Areas Report – Geologic Hazards

Cedarbrook Elementary School

2000 NE Perkins Way

Shoreline, Washington 98155

PBS Project No. 40958.011, Phase 0001, Task 004

Dear Mr. Stevens:

PBS Engineering and Environmental Inc. (PBS) is pleased to present this critical areas report to address geologic hazards at the Cedarbrook Elementary School site in Shoreline, Washington. The site location is shown on the Vicinity Map, Figure 1. The extent of the proposed project and site features are shown on the Site Plan, Figure 2.

PROJECT UNDERSTANDING

PBS was engaged by the Shoreline School District to develop a plan for demolition of the existing Cedarbrook Elementary School. In general, this will include demolition of three buildings and appurtenant pavement, sidewalks, and utilities. The three buildings will be referred to by number (as indicated on Figure 2) throughout this report. Limited site grading is planned to flatten site slopes, particularly where embedded building walls associated with the buildings are located on the south sides of Buildings 1 and 2.

This report address three geologic hazards as required by the Shoreline Municipal Code (SMC): landslide areas, seismic hazard areas, and erosion hazard areas. Landslide hazard areas are determined primarily based on the inclination of site slopes, where slopes are steeper than 15 percent (6.7H:1V [horizontal to vertical]) with a vertical elevation change of at least 10 feet. The severity of the hazard is a function of several factors including the presence of slope inclination, soil type, groundwater seepage, and previous landslide activity. Seismic hazards, including liquefaction, lateral spreading, and earthquake shaking, are primarily a function of soil type and consistency/density and groundwater conditions. Erosion hazards are strictly based on soil type (as referred to by the SMC) and the subsequent susceptibility to erosion.

The purpose of PBS' services was to complete a site reconnaissance and review available geologic and hazard maps, well logs, and literature to determine if geologic hazards as identified in the SMC exist at the site, the degree of the hazard if it exists, and whether the proposed project will impact these hazards, negatively effecting the site and/or surrounding areas.

SITE RECONNAISSANCE

Ryan White, PE, GE, a licensed geotechnical engineer from PBS, completed a reconnaissance of the site on April 27, 2017. The purpose of the reconnaissance was to observe existing site topography, groundwater conditions, vegetation, exposed soil types, building foundation conditions, and the condition of site slopes.

Mr. Dan Stevens Critical Areas Report – Geologic Hazards May 18, 2017 Page 2 of 4

Site Topography

In general, based on field measurements using a hand level and tape measure, the site topography and slope inclinations are consistent with that shown on Figures 2 and 3. Within the proposed work area (identified on Figure 2 as a thick dashed line encircling the buildings) site slopes of approximately 30 percent (3.4H:1V) to 40 percent (2.5H:1V) are present to the north and south of Building 3. Both of these slopes are on the order of 4 to 5 feet tall (toe to crest).

Outside of the proposed work area, slopes of steeper than 40 percent are present above the rockery located east of Buildings 1 and 2, north of the eastern parking lot, along the stream that runs north-south at the southwest corner of the school property, and behind the two residences that border the school property to the southwest. These areas are heavily vegetated, but slopes within these areas appear to be on the order of 65 percent (1.5H:1V) and steeper. The slope at the rockery appears to have been cut to accommodate construction of a parking lot, while the steep slopes along the west side of the stream and behind the residences to the southwest may be the result of fill having been placed to construct the homes. Some downcutting of the stream is also likely due to stormwater discharges to the stream.

Observation of the ground surface above these slopes did not reveal obvious signs of recent slope instability, such as cracks, scarps, or exposed soil. The parking area and access drive pavement has deteriorated over time, but the presence of systematic, parallel cracks that could be an indicator of slope instability below these areas were not observed.

Site Soils

Review of geologic maps (Minard, 1983; Figure 4) of the area indicates the site is underlain by advanced outwash. Advanced outwash is classified as predominantly sand with variable amounts of silt and gravel. Advanced outwash is typically overlain by till, which is mapped as being present near the site. Vashon till is generally present above elevations of 30 meters (100 feet) and consists of a mixture of clay, silt, sand, gravel, cobbles, and boulders.

Exposed near-surface soils present at and around the site generally appear to consist of silt with variable amounts of clay and sand. Large basalt boulders are present in the drainages on the southwestern portion of the property. These are not likely native to the area and were probably imported.

Review of well logs collected from the State of Washington Department of Ecology for sites in the area indicate soils consist of clay, silt, sand, and gravel.

Groundwater

One area of seepage was noted within the work area during the site reconnaissance. Slow seepage was observed coming from the north-facing slope between Building 3 and the paved area between Buildings 1 and 3. The slow seepage is consistent with the mapped wetlands in that area.

Outside the work area, slow seepage was observed along the western portion of the northeastern paved area, generally south of the fire hydrant shown in Figure 2. Seepage from the slope is flowing east across the paved area.

HAZARD EVALUATION

Due to the absence of indicators of slope instability, the delineation of hazards was completed considering published geologic and hazard maps, the site topography measured in the field and developed for the site survey (refer Figure 2), geologic mapping, and visual observation during the reconnaissance.

Mr. Dan Stevens Critical Areas Report – Geologic Hazards May 18, 2017 Page 3 of 4

Landslide Hazards

The SMC classifies landslide hazards as either moderate to high risk or very high risk. Moderate to high risk is defined as slopes of 15 to 40 percent underlain by clay, silt, sand, gravel, or till that do not meet the criteria for very high risk areas, or any slopes that are 40 percent or steeper and 10 to 20 feet in height that do not meet the criteria for very high risk areas. Very high risk is defined as slopes that are steeper than 15 percent with zones of emergent water, areas of landslide activity, and all slopes of 40 percent and steeper that are more than 20 feet tall. Slope inclination at the site, provided by the City of Shoreline, is shown on Figure 3. The project site is located outside the landslide hazard areas as determined by the City of Shoreline (refer, Figure 5)

Within the proposed work area, there are existing slopes that are between 15 and 40 percent. However, these slopes are less than 10 feet in height (as defined in the SMC) and not considered a hazard.

Outside the work area, slopes near the southwest corner and the slope located at the rockery located east of the buildings would be considered moderate to high risk due to their inclination (greater than 40 percent) and heights of between 10 and 20 feet. There is a slope wetland in the northwest corner, well outside the project area that meets the definition of very high risk. Identified landslide hazard areas are shown on Figure 2.

Seismic Hazard

Seismic hazards identified in the SMC include liquefaction, lateral spreading, subsidence, and strong shaking. Liquefaction is defined as a decrease of the shear resistance of loose, saturated, cohesionless soil (e.g., sand) or low-plasticity silt soils, due to the buildup of excess pore pressures generated during an earthquake. This results in a temporary transformation of the soil deposit into a viscous fluid. Liquefaction can result in ground settlement, foundation bearing capacity failure, and lateral spreading of ground. Liquefaction that occurs near or adjacent to slopes or free-faces can result in lateral spreading. Based on our review of the Liquefaction Susceptibility Map of King County, Washington (Palmer, 2004), the site is located in an area with a very low to low risk of liquefaction. Subsequently, the risk of lateral spreading is also very low. If new structures were being constructed at the site, anticipated strong shaking resulting from a code-level earthquake could likely be accommodated with code-based design procedures.

Erosion Hazard

The SMC defines soils as erodible based on the US Department of Agriculture Natural Resources Conservation Services (NRCS) classification of soils at the site. NRCS mapping data is not available for this site. However, based on nearby mapping, site soils would presumably be classified as Alderwood-Kitsap (AkF) or Alderwood gravelly sandy load (AgD), which corresponds to a severe to very severe erosion hazard. This is consistent with observation of the surrounding drainages where downcutting of the soils has occurred, creating the steep slopes present on the southwestern portion of the site.

SITE GRADING AND SLOPE STABILITY

Currently proposed grading is generally limited to flattening the site slope where existing embedded building walls are present. This will involve cutting the crest of the slope back and placing a relatively small amount of fill at the toe of the engineered slope, which will be inclined at 3H:1V, or 33 percent. Grading around the east and west sides of the buildings will tie the newly constructed cut slopes into the existing slopes. In addition, the 2.5H:1V slope south of Building 3 will be flattened.

MITIGATION MEASURES

Due to the soil type and presence of seepage in areas of the site, we recommend that grading be completed during relatively dry conditions. Project plans should include appropriate measures to control erosion of exposed

Mr. Dan Stevens Critical Areas Report – Geologic Hazards May 18, 2017 Page 4 of 4

soil at the site including a silt fence, straw waddles, and erosion control netting/fabric as required/accepted by the City. Exposed soil should be planted and/or protected to provide long-term protection of the surficial soils at the site.

CONCLUSIONS

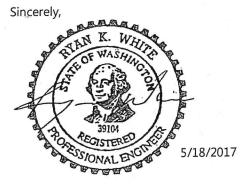
Based on the definitions provided in the SMC, landslide and erosion hazards are present at the site. Site soils are composed of clay, silt, and sand that are susceptible to erosion. Due to the inclination and height of the slope above the rockery located north of the east parking lot, that area is considered a moderate to high landslide hazard, but is located outside the work area. A portion of the wetland in the northwest corner meets the definition of very high risk landslide hazard, but it is well outside the project area.

Based on observations during our reconnaissance, the existing slopes within the work area at the site have performed adequately, even though they are currently relatively unmaintained, and no obvious signs of recent or past instability were observed around Building 3 or in the vicinity of these slopes. In addition, the concrete foundation, where visible from the exterior, shows no signs of significant cracking that would be indicative of slope instability.

Based on review of site conditions and the referenced maps and plans, our current opinion is that the proposed site grading will not increase the risk of occurrence of landslides at the site or negatively impact the surrounding properties.

CLOSING

Please feel free to contact me at 503.539.5028 or Ryan.White@pbsusa.com with any questions or comments.



Ryan White, PE, GE (OR) Geotechnical Discipline Lead

Figures

Figure 1 – Vicinity Map

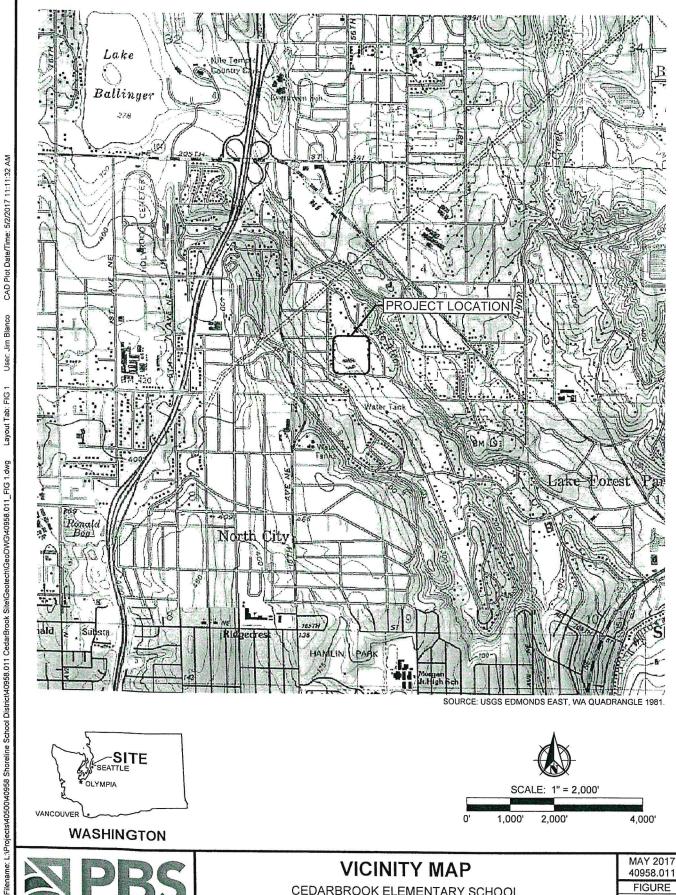
Figure 2 – Site Plan

Figure 3 – Slope Inclinations Plan

Figure 4 – Geology Map

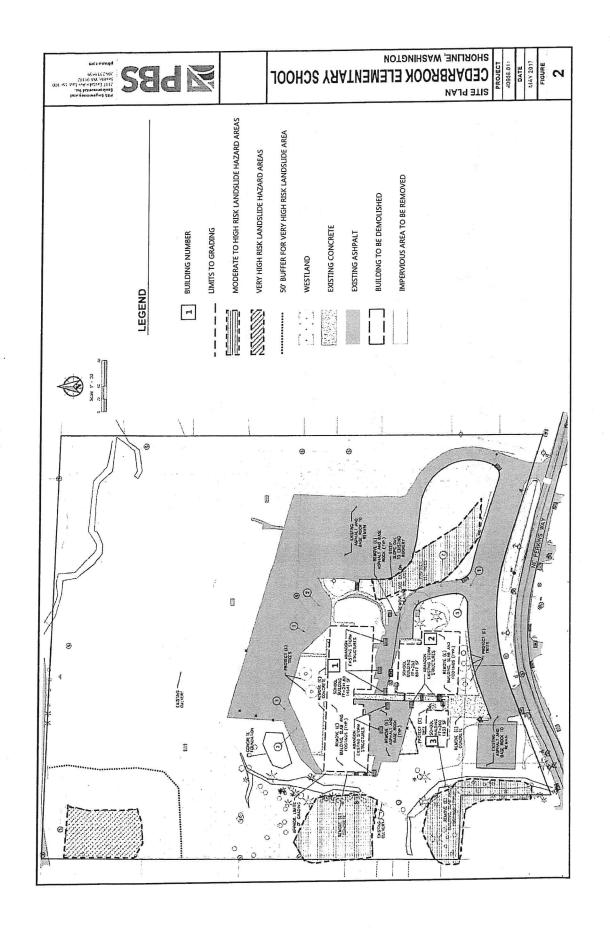
Figure 5 – Landslide Hazard Map

RW:SB:rg



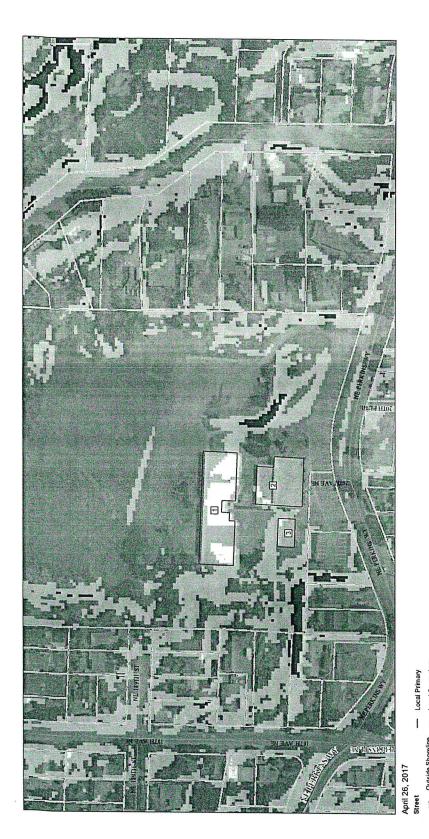
CEDARBROOK ELEMENTARY SCHOOL SHORELINE, WASHINGTON

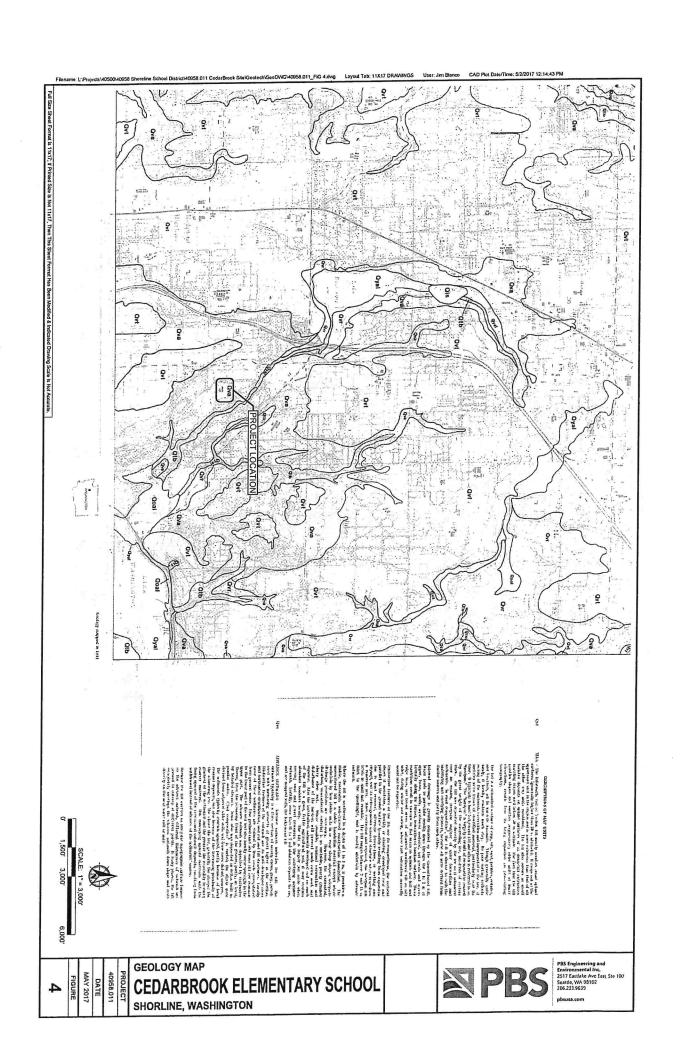
FIGURE

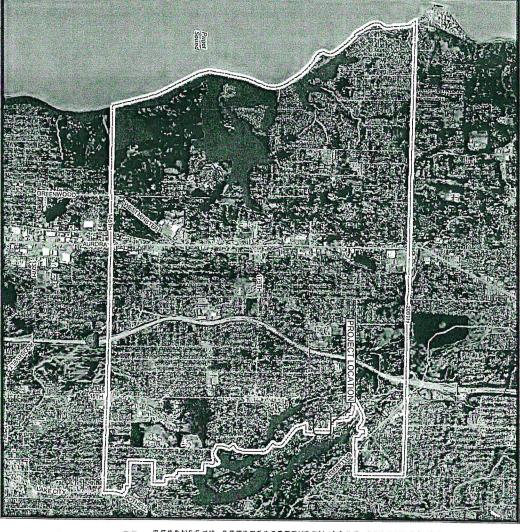


ЗГОРЕ ІИСLІИАТІОИЅ РLAN









CITY OF SHORELINE

Landslide Hazard Areas

ermeable soils (typically sit and clay) frequently dded with granular soils (predominantly sand and

that shows evidence of, or is at risk from, ied on an alluvial fan, presently subject subject to inundation by debris flows or arr-bansported deposis.

e greater than 40%. Stops determined neveraled from 2002 LDP4f catas. Stope yking Downly DNAPP.

(allowal faries), Olis (discrete landsides), (allowal faries), Olis (discrete landsides) from mandakines that accumulate on and a the les chosels), palle as a Faulified in sufficial.

Base Map Data Sources:
King County, U.S. Geological Survey

LANDSLIDE HAZARD MAP

CEDARBROOK ELEMENTARY SCHOOL



PBS Engineering and Environmental Inc. 2517 Eastlake Ave East, Ste 100 Seattle, WA 98102 206 233 9639

5

FIGURE

MAY 2017 DATE

PROJECT 40958.011

SHORLINE, WASHINGTON