CRITICAL AREAS STUDY & BUFFER MITIGATION PLAN FOR

Ross – 11718 & 11800 55th Avenue NE

Tax Parcel Nos. 30051000201600 & 30051000204200

Acre Project #21071

Prepared by:

Acre Environmental Consulting, LLC.
PO Box 55248
Shoreline, WA 98155
(206) 450-7746

For:

David Ross
11718 55th Avenue NE
Marysville, WA 98271

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TABLE OF CONTENTS

ATTACHMENTS:

1. VICINITY MAP
2. WETLAND DETERMINATION DATA FORMS (5 DATA POINTS ON-SITE)
3. CRITICAL AREAS STUDY MAP SHEET CA1.00

SITE DESCRIPTION

On September 8, 2021 *Acre Environmental Consulting, LLC* visited the approximate 5.03-acre site (two parcels) located at 11718 & 11800 55th Avenue NE in the City of Marysville, Washington. The site is further located as a portion of Section 10, Township 30N, Range 5E, W.M. The parcel numbers for this property are 30051000201600 & 30051000204200. The purpose of this site visit was to locate regulated critical areas on and adjacent to the subject site. Surrounding land use is comprised of residential development and pasture. A tributary to Quilceda creek flows south through the western portion of this site.

Access to this site is from 55th Avenue NE located along the eastern boundary of the property. This property is generally flat and contains existing single-family residences and associated infrastructure in the eastern portion of each lot. The remainder of the site is occupied by scattered trees, shrubs, and maintained pasture. Stream A, a tributary to Quilceda Creek flows south through the western portion of the property and off-site to the west. Vegetation adjacent to this stream is represented by a canopy of scattered Douglas fir (*Pseudotsuga menziesii,* FacU) and western red cedar (*Thuja plicata*, Fac) with pasture and Himalayan blackberry (*Rubus armeniacus*, Fac) dominant in the understory. In the City of Marysville, Quilceda Creek and associated tributaries receive a 100-foot protective buffer measured from the delineated ordinary high water mark of the stream.

PROJECT DESCRIPTION

The applicant is proposing a multi-lot residential development on the subject site. To accommodate the development, the applicant intends to reduce a total of 6,466 square feet of buffer on the east side of the stream to a minimum width of 75 feet. Vegetation in the buffer proposed to be reduced is currently represented by Himalayan blackberry (*Rubus armeniacus*, Fac) and pasture, and as such provides a relatively low level of functions and values and limited protection to Stream A. Lower intensity land uses, including a park and the stormwater pond will be located adjacent to the areas of reduced buffer. As mitigation for the proposed buffer reduction, the applicant is offering to designate a total of 6,512 square feet of additional, equivalent quality area as buffer on the subject site. This will result in a net increase of 46 square feet of protected buffer area on the subject site. Therefore, the total area contained within the buffer after averaging is greater than that contained within the standard buffer prior to averaging.

To comply with MMC 22E.010.220(2)(a - c), the applicant is proposing to enhance the stream buffer on the subject site. This will result in a total of 67,530 square feet (1.5 acres) of buffer enhancement, and will include all areas of additional buffer discussed above. Buffer enhancement will consist of removing all invasive species and planting native trees and shrubs.

Due to the existing low level of functions and values provided by the subject buffer and the proposed buffer addition and buffer enhancement, the proposed buffer averaging will not impair of reduce habitat, water quality purification and enhancement, or any other functions provided by the stream buffer, and is in fact expected to result in an increase in the overall level of functions and values provided by this site. Therefore, this buffer averaging proposal is in compliance with the requirements of MMC 22E.010.220(4)(Buffer Width Averaging).

Finally, the applicant intends to install a two rail fence and signs around the perimeter of the buffer as required by MMC 22E.010.370. The signs and fencing will serve to demarcate the limits of the development and discourage intrusion in to the adjacent critical areas.

METHODOLOGIES OF CRITICAL AREAS DETERMINATION

On September 8, 2021 *Acre Environmental Consulting, LLC* conducted a site visit to locate wetlands and streams on and adjacent to the subject site. The methods used for delineating, classifying, and rating the critical areas in the project area are consistent with current Federal, State, and City of Marysville requirements. At the time of our September 8, 2021 site investigation, the weather was sunny with a temperature of 72 degrees Fahrenheit.

The ordinary high water mark of the stream on the subject site was determined using the Washington State Department of Ecology guidance document titled Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State (Publication No. 16-06-029), dated October 2016.

The site was assessed for the presence of wetlands using the routine methodologies described in the U.S. Army Corps of Engineers Wetland Delineation Manual produced in 1987 and the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region produced in May 2010 (hereinafter referred to as "the Corps Regional Supplement"). The Corps Regional Supplement is designed for concurrent use with the 1987 Corps Wetland Delineation Manual and all subsequent versions. The 2010 Regional Supplement provides technical guidance and procedures for identifying and delineating wetlands that may be subject to regulatory jurisdiction under Section 404 of the Clean Water Act. Where differences in the two documents occur, the Corps Regional Supplement takes precedence over the Corps Manual for applications in the Western Mountains, Valleys, and Coast Region.

According to the federal methodologies described above, identification of wetlands is based on a three-factor approach involving indicators of hydrophytic vegetation, hydric soils, and the presence or evidence of persistent hydrology. Except where noted in the manuals, the three-factor approach discussed above requires positive indicators of hydrophytic vegetation, hydric

soils, and wetland hydrology, to make a determination that an area is a regulated wetland. Using the aforementioned manuals, the procedure for making a wetland determination include the following:

1.) Examination of the site for hydrophytic vegetation (species present/percent cover);
2.) Examination for the presence of hydric soils in areas where hydrophytic vegetation is present; and
3.) The final step is determining if wetland hydrology exists in the area examined under the first two steps.

Per industry standards, *Acre Environmental Consulting, LLC* examined the entire project site. Per current City of Marysville requirements, *Acre Environmental Consulting, LLC* also assessed adjacent properties within 200 feet of the proposed project limits, to the maximum extent possible without entering adjacent properties. While a detailed assessment of Critical Areas on adjacent properties was not possible due to the lack of legal access, *Acre Environmental Consulting, LLC* conducted a review of all available information to assess the presence of off-site Critical Areas within 200 feet of the subject site. This review is necessary to determine if any regulated Critical Areas exist off-site which would cause associated protective buffers to extend onto the property and affect the development proposal.

In addition to on-site field reviews, *Acre Environmental Consulting, LLC* examined aerial photographs and topographical data on Snohomish County's PDS Map Portal system. Web soil survey maps produced by the Natural Resources Conservation Service (NRCS), National Wetlands Inventory (NWI) maps produced by the U.S. Fish and Wildlife Service (USFWS), SalmonScape fish distribution maps produced by the Washington Department of Fish and Wildlife (WDFW), and StreamNet fish distribution maps produced by Pacific States Marine Fisheries Commission.

BOUNDARY DETERMINATION FINDINGS

The subject stream was classified according to the U.S. Fish and Wildlife Service (USFWS) Cowardin system Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979) and rated, by type as required by the City of Marysville Municipal Code, Chapter 22E.010 (Critical Areas Management). Buffers are also determined by this chapter.

Stream A – Type Np

Cowardin: Riverine, Upper Perennial, Streambed, Mud (R3SB5)
City of Marysville Rating: Quilceda Creek Tributary, 100' Buffer

A tributary to Quilceda Creek flows south and west through the western portion of the subject site. This stream is depicted as a Type F water on the map titled City of Marysville Quilceda-Allen Watershed Marysville Stream Classification March 2007. The Salmonscape maps produced by the Washington Department of Fish and Wildlife show that this stream supports both resident and anadromous fish including, candidate Coho salmon (*Oncorhynchus kisutch),* threatened Bull trout (*Salvelinus confluentus),* threatened fall Chinook salmon (*Oncorhynchus tshawytscha*), threatened winter Steelhead (*Oncorhynchus mykiss),* unlisted Pink salmon (*Oncorhynchus gorbuscha*), unlisted chum salmon (*Oncorhynchus keta*), and unlisted cutthroat trout (*Oncorhynchus clarki*). In the City of Marysville, Quilceda Creek and associated tributaries receive a 100-foot protective buffer measured from the delineated ordinary high water mark of the stream.

Non - Wetland

The majority of the subject site is represented by maintained lawn and pasture. The areas adjacent to Stream A have a canopy of Douglas fir (*Pseudotsuga menziesii,* FacU) and western red cedar (*Thuja plicata*, Fac) with the understory being overrun by Himalayan blackberry (*Rubus armeniacus*, Fac). Typical vegetation in the lawn and pasture is represented by Scotch broom (*Cytisus scoparius*, Upl), Himalayan blackberry (*Rubus armeniacus*, Fac), colonial bentgrass (*Agrostis capillaris*, Fac), orchard grass (*Dactylis glomerata*, FacU), tall fescue (*Schedonorus arundinaceus,* Fac), velvetgrass (*Holcus lanatus*, Fac), and hairy cat's-ear (*Hypochaeris radicata*, FacU). Typical soils on this site have Munsell colors of dark brown (10YR 3/3), with textures of sandy loam from 0 to 18 inches below the surface. Soils were dry during our September 8, 2021 site visit.

NATURAL RESOURCE CONSERVATION SERVICE SOILS DESCRIPTION**:**
The Natural Resources Conservation Service (NRCS) mapped the subject property as being underlain by Ragnar fine sandy loam, 8 to 15 percent slopes in the vicinity of Stream A, with Custer fine sandy loam in the northern portion of the site and Lynnwood loamy sand, 0 to 3 percent slopes in the southern part.

The NRSC describes Custer fine sandy loam as a very deep, poorly drained soil in basins on outwash plains. It formed in glacial outwash. Typically, the surface layer is very dark grayish brown fine sandy loam about nine inches thick. The upper part of the subsoil is loamy fine sand about 7 inches thick. Included in this unit are small areas of Indianola soils on terraces, Norma soils in upland drainageways, and Custer soils that have been partially drained. Permeability of

this Custer soil is moderately slow in the discontinuous hardpan and very rapid below it. Available water capacity is low. This soil is included on the Hydric Soils List for Washington.

The NRSC describes Lynnwood loamy sand as a very deep, somewhat excessively drained soil on terraces and outwash plains. It formed in glacial outwash. Typically, the surface is covered with a mat of leaves, needles, and twigs about 3 inches thick. The surface layer is grayish brown loamy sand about 1 inch thick. The upper part of the subsoil is dark brown loamy sand about 14 inches thick. The lower part is dark yellowish brown loamy sand about 14 inches thick. Permeability of this Lynnwood Soils is rapid. Available water capacity is low. Included in this unit are small areas of Everett, Indianola, Pastik, and Ragnar soils. Also included are Custer soils in basins and soils that have slopes of more that 3 percent. Included areas make up about 15 percent of the total acreage.

The NRCS describes the Ragnar series as a moderately well drained soil on outwash plains. The surface layer is typically a dark brown fine sandy loam about two inches thick. The upper part of the subsoil is dark brown and brown sandy loam about 22 inches thick. Included in this unit are areas of Everett, Indianola, Pastik and Wilson soils on terraces and outwash plains. Included areas make up about 15 percent of the total acreage.

BUILDING SETBACKS

Per MMC22E.010.380 (Building setbacks). "Unless otherwise provided, buildings and other structures shall be set back a distance of 15 feet from the edges of all critical area buffers or from the edges of all critical areas, if no buffers are required. The following may be allowed in the building setback area:

(1) Landscaping;
(2) Uncovered decks;
(3) Building overhangs, if such overhangs do not extend more than 18 inches into the setback area; and
(4) Impervious ground surfaces, such as driveways and patios; provided, that such improvements may be subject to water quality regulations as adopted. (Ord. 2852 § 10 (Exh. A), 2011)."

EXISTING FUNCTIONS AND VALUES ANALYSIS

The methodologies for this functions and values analysis are based on professional opinion developed through past field analyses and interpretations. This assessment pertains specifically to the subject stream, but is typical for assessments of similar systems throughout western Washington.

Stream A on the subject site provides important functions including hydrologic transport, transport of solids (suspended and dissolved), and habitat for a variety of fish and wildlife species. The established trees and shrubs within the stream buffer provide important ecological functions. The root action of this vegetation serves to aid with soil / bank stabilization, thus reducing erosion and sedimentation entering the stream channel. In addition, the large trees within the buffer provide shade as well as a future source of large woody debris (LWD) to the stream. Large woody debris is known to increase functions within stream channels, including reducing water velocity, providing shade for fish and other aquatic species, and habitat for terrestrial species. In addition to the LWD recruitment, the trees and shrubs within the riparian corridor also aid in the recruitment of organic matter to the stream.

Streams and associated buffers in western Washington often contain necessary wildlife habitat resources such as food, water, thermal cover, and hiding cover in close proximity, and the undisturbed vegetated areas within this stream corridor provide a secure corridor for wildlife movement. The stream and associated buffers provide protected habitat, which becomes increasingly important as areas become further populated with humans and habitat areas become fragmented. The subject stream likely provides habitat for many species of wildlife. The following avian species were detected on-site: American robin (*Turdus migratorius*), black-capped chickadee (*Poecile atricapillus*), house finch (*Carpodacus mexicanus*), and song sparrow (*Melospiza melodia*).

The established vegetation within the buffer serves to intercept rain fall before it strikes the soil, thereby reducing erosion and improving water quality. Furthermore, the vegetation and soils within the buffer serve to trap sediment and pollutants and provide increased water quality functions that aid in a reduction of sediment which results in cleaner water leaving the site.

The grasses and forbs in the pasture portion of the buffer likely serve to filter sediment and pollutants from overland flow, thus improving water quality. However, the presence of invasive species (primarily blackberry) and lack of vegetative structure limits the potential wildlife habitat value for this area.

BUFFER ENHANCEMENT

To comply with MMC 22E.010.220(2)(a - c), the applicant is proposing to enhance the stream buffers on the subject site. The proposed buffer enhancement will include all areas designated as additional buffer for buffer averaging and will result in a total of 67,530 square feet (1.5 acres) of buffer enhancement. The buffer proposed to be enhanced is currently represented by a scattered canopy of native trees with pasture and Himalayan blackberry in the understory.

Buffer enhancement is proposed to consist of removing any invasive species (mainly Himalayan blackberry) and planting 60 percent of the mitigation areas with native trees and 40 percent of the mitigation areas with native shrubs. All proposed species are native to the Puget Sound region and have been selected for their benefits to wildlife and their proven success on past mitigation projects. The native trees and shrubs listed below are proposed to be installed in the buffer enhancement areas.

Buffer Enhancement – 67,530 square feet

Common Name	**Latin Name**	**Size**	**Spacing**	**Quantity**
Western red cedar	*Thuja plicata*	1 gallon	10’	162
Douglas fir	*Pseudotsuga menziesii*	1 gallon	10’	162
Red alder	*Alnus rubra*	1 gallon	10’	80
Vine maple	*Acer circinatum*	1 gallon	5’	180
Hazelnut	*Corylus cornuta*	1 gallon	5’	180
Osoberry	*Oemleria cerasiformis*	1 gallon	5’	180
Scouler’s willow	*Salix Scouleriana*	1 gallon	5’	180
Snowberry	*Symphoricarpos albus*	1 gallon	5’	180
Baldhip rose	*Rosa gymnocarpa*	1 gallon	5’	180

GRASS SEEDING

Any disturbed soil in critical areas or buffers shall be seeded to the recommended grass seed mixtures below, or similar approved mixtures.

Common Name	**Latin Name**	**lbs/1,000 sf**
Tall fescue	*Festuca arundinacea*	0.4
Colonial bentgrass	*Agrostis tenuis*	0.4
Annual ryegrass	*Lolium multiflorum*	0.5
Red clover	*Trifolium pratense*	0.2

PLANTING NOTES

Wetland and buffer mitigation projects are typically more complex to install than can be described in plans. Careful monitoring by a professional wetland scientist for all portions of this project is strongly recommended. Timing and sequencing is important to the success of this type of project.

Plant in the early spring or late fall. Order plants from a reputable nursery. Care and handling of plant materials is extremely important to the overall success of the project. All plant materials recommended in this plan should be available from local and regional sources, depending on seasonal demand. Some limited species substitution may be allowed, only with the agreement of the consulting wetland professional.

The plants shall be arranged with the appropriate numbers, sizes, species, and distribution to achieve the required vegetation coverage. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area.

Colored surveyors ribbon, or other approved marking device shall be placed next to each planted tree and shrub to assist in locating the plants while removing the competing non-native vegetation and to assist in monitoring the plantings.

Wood chips or other suitable material shall be used for mulching in the planting areas. Any existing vegetation is to be removed from a two-foot diameter area at each planting site. Mulch is to be placed in this two-foot diameter area at a depth of three to four inches. A four-inch diameter ring around the base of each plant shall be kept free of mulch.

Water should be provided during the dry season (June 1st through September 30th) for the first three years after installation to insure plant survival and establishment. A temporary above ground irrigation system and/or water truck should provide water. Water should be applied at a rate of 1 inch of water twice per week for year one and 1 inch per week during year two.

PROJECT SUCCESS AND COMPLIANCE

Goals and Objectives of the Proposed Mitigation: The primary goals of the proposed mitigation are as follow:

- Increase the water quality and habitat functions within the buffer;
- Remove non-native, invasive vegetation from the mitigation area;
- Increase the quantity and diversity of native vegetation within the on-site stream buffers; and
- Allow for responsible residential development and associated infrastructure, while

maintaining or improving the ecological functions provided by the subject site.

Definition of Success: The planting areas shall meet the following performance standards:

a) Year 1: 100 percent survival of newly planted species,
b) Year 3: at least 80 percent survival of installed plant species,
c) Year 5: at least 80 percent survival of installed plant species,

This mitigation plan shall support at least 80% of the native plants set forth in the approved mitigation plan by the end of five years. The species mix should resemble that proposed in the planting plans, but strict adherence to obtaining all of the species shall not be a criterion for success.

Performance Standards:

Performance Standard 1: There shall be 100 percent survival of all the plantings after Year 1 or the installation contractor shall replace the material. At least 80 percent of the plant material installed shall survive in Year 5 after installation.

Performance Standard 2: There shall be a minimum of 30 percent cover of woody species (shrub and tree canopy layers considered together) in the buffer after the first year post-installation; and a minimum of 50 percent cover by woody material after the third year post-installation; and a minimum of 80 percent cover by woody material after the fifth year post-installation. Naturally occurring, native plants shall be included in the calculation of vegetation coverage.

Performance Standard 3: There shall be no more than 20 percent cover of weedy/invasive species in the mitigation areas at any time throughout the monitoring period.

If the project meets all of the criteria for success at the end of the five-year monitoring period, no further action will be required and the financial guarantee will be returned to the applicant in full. If the definition of success is not met for any reason at the end of the five-year monitoring period, the maintenance and monitoring period will be extended for one year at a time until the site meets the stated performance standards. If the definitions of success and the accompanying performance standards are met in less than five years, the monitoring may be terminated and the bond released at that point. This mitigation plan and the accompanying maintenance and monitoring will not be considered fully complete until written confirmation is received from the City of Marysville.

PROJECT MONITORING PROGRAM

Requirements for monitoring project:

1. As-built report (At time of construction).
2. 30-day post planting report.
3. Conduct semi-annual site visits in the spring (March) and fall (October) for monitoring Years 1 and 2 with an annual monitoring report submitted to the City of Marysville in the fall of each year.
4. Conduct one site visit in the fall (October) of monitoring Years 3 through 5 with a final monitoring report submitted to the City of Marysville following the site visit.

Criteria for Success: Upon completion of the proposed mitigation project, an inspection by a qualified biologist will be made to determine plan compliance. A compliance report will be prepared by the qualified biologist and supplied to the City of Marysville within 30 days after the completion of planting. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented and City staff inspects the site and issues approval of the installation.

A qualified professional will perform condition monitoring of the plantings semi-annually in the spring and fall during the first two years of monitoring, and annually in the fall for monitoring years three through five. A written report describing the monitoring results will be submitted to the City of Marysville after the fall inspection for each monitored year. Final inspection will occur five years after completion of this project, or when the definitions of success and performance standards have been met. The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows at the end of five years that the definitions of success and the accompanying performance standards described below are being met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscaper and/or wetland specialist and the City of Marysville during the period of the bond or until the project is evaluated as successful.

Vegetation Monitoring: Sampling points or transects will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Photographs shall be taken from the same photo points during each subsequent monitoring visit to provide visual documentation of the evolution of the mitigation areas over time. Permanent sampling points must be identified on the mitigation site plans in the first monitoring report.

Following each monitoring visit, the contracted biologist will make recommendations for maintenance to the mitigations areas.

MAINTENANCE

The mitigation areas will require periodic maintenance to remove undesirable species and replace plant mortality. The planting areas should be maintained in spring and fall of each year for the five-year monitoring period. Maintenance may include, but will not be limited to, removal of competing grasses and invasive species (by hand if necessary), irrigation, replacement of plant mortality, and the replacement of mulch for each maintenance period. Following each monitoring visit, the project biologist will make recommendations for maintenance.

CONTINGENCY PLAN

If 20% of the plants are severely stressed during any of the inspections, or it appears 20% may not survive, additional plantings of the same species may be added to the planting area. Elements of a contingency plan may include, but will not be limited to: more aggressive weed control, pest control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

REQUIRED FINANCIAL GUARANTEE

The City of Marysville requires a performance bond or other financial guarantee in order to ensure that the proposed mitigation efforts meet the performance standards outlined in this report. Pursuant to MMC Chapter 22G.040, a performance and maintenance bond or other acceptable security device is required to ensure the applicant's compliance with the terms of the approved mitigation plan. The security for performance shall be for a period of five years, but the community development department may agree to reduce the security in phases in proportion to the work successfully completed over the duration of the security. The amount of the performance bond equals 150 percent of the fair market cost of the mitigation project, plus 30 percent of the current fair market cost for performance. For this project the performance bond is calculated as follows:

Quantity of one-gallon plants @ $10.50/plant	1,484
Estimated cost of plant material and labor	$15,582.00
Total estimated costs	$15,582.00
Total estimated costs x 150%	$23,373.00
Plus 30% of total estimated costs	$4,674.60
Total performance bond amount (Project cost x 150% + 30%)	**$28,047.60**

POST-PROJECT FUNCTIONS AND VALUES

Due to the existing low level of functions and values provided by the stream buffer on the subject site and the proposed designation of additional buffer and buffer enhancement, no significant adverse environmental impacts are expected to occur as a result of this project, assuming the compensatory mitigation is implemented as stated in this plan. Although the applicant is proposing to reduce a portion the stream buffer to accommodate the development, no net loss of ecological functions is expected to occur. The buffer that is proposed to be reduced is currently dominated by invasive species and pasture and, as a result provides a relatively low level of functions and values, and little protection to the subject stream. The proposed buffer mitigation will increase vegetative species diversity and vegetative structure. This will improve wildlife habitat as well as increase shade, water quality and stormwater storage functions, within the buffer and is expected to generally increase the overall level of functions and values provided by the subject site.

TERMS & CONDITIONS

The environmental consulting work conducted, including this Critical Areas Study and Buffer Mitigation Plan (collectively the "Services") is supplied to David Ross (the "Client") as a means of determining whether any wetlands, streams, and/or fish and wildlife habitats regulated by the City of Marysville Critical Areas Regulations exist on, or adjacent to the site. The Services are provided in accordance with the following General Terms and Conditions (the "Terms"). In accepting the Services provided by *Acre Environmental Consulting*, LLC ("Acre"), the Client voluntarily enters into and agrees to the binding effect of the following Terms.

This report is intended to provide information deemed relevant in the Client's attempt to comply with the regulations currently in effect. The work for this report has conformed to the standard of care employed by professional ecologists in the Pacific Northwest. All other representations or warranties, whether express or implied, are hereby disclaimed concerning the work or this report. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions. If such conditions exist or arise, the information contained in this report may be rendered inaccurate or incomplete based upon those conditions. Acre acts solely as an independent contractor in providing the Services to the Client, and nothing in the provision of such Services shall be construed as creating an agency, partnership, joint venture or other similar legal relationship between Acre and the Client.

Please note that Acre did not provide detailed analyses of other permitting requirements not discussed in this report (i.e., structural, drainage, geotechnical, or engineering requirements).

The laws applicable to Critical Areas are subject to varying interpretations. While Acre observed professional industry standards when completing this review, the information included in this report does not guarantee approval by any federal, state, and/or local permitting agencies. Therefore, all work on this property should not commence until permits have been obtained from all applicable agencies. If there are any questions regarding this report, please contact me at 206.450.7746.

Acre Environmental Consulting, LLC.

Louis Emenhiser
Principal Wetland Ecologist
Professional Wetland Scientist #1680

REFERENCES

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StreamNet. Fish Data for the Northwest. Administered by the Pacific States Marine Fisheries Commission. http://www.streamnet.org/. Website last visited on January 8, 2022.

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U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5. http://wetland-plants.usace.army.mil/ U.S. Army Corps of Engineers Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH.

U.S. Fish and Wildlife Service. National Wetlands Inventory Wetlands Mapper. http://107.20.228.18/Wetlands/WetlandsMapper.html#. Last modified December 1, 2021. Website last visited on January 8, 2022.

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

Project/Site: 11718 & 11800 55th Avenue NE City/County: Marysville / Snohomish Sampling Date: 09.08.2021

Applicant/Owner: David Ross State: WA Sampling Point: DP1

Investigator(s): Louis Emenhiser Section, Township, Range: S10, T30N, R5E, W.M.

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): LRR-A Lat: 48.101599 Long: -122.159336 Datum:

Soil Map Unit Name: Custer fine sandy loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No ✓
Hydric Soil Present?	Yes	No ✓
Wetland Hydrology Present?	Yes	No ✓
Is the Sampled Area within a Wetland?	**Yes**	**No ✓**

Remarks:

Non-wetland in the northwest corner of the property.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 meters)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 meters)			
1. Cytisus scoparius	20	Y	Upl
2. Rubus armeniacus	10	Y	Fac
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Agrostis capillaris	70	Y	Fac
2. Dactylis glomerata	20	Y	FacU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	20	x 4 =	80
UPL species	20	x 5 =	100
Column Totals:	120 (A)		420 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is Ã3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No ✓

Remarks:

SOIL

Sampling Point: DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (**LRR A**)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: 11718 & 11800 55th Avenue NE City/County: Marysville / Snohomish Sampling Date: 09.08.2021

Applicant/Owner: David Ross State: WA Sampling Point: DP2

Investigator(s): Louis Emenhiser Section, Township, Range: S10, T30N, R5E, W.M.

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 30%

Subregion (LRR): LRR-A Lat: 48.101131 Long: -122.159452 Datum: _____

Soil Map Unit Name: Custer fine sandy loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _ __, Soil _ __, or Hydrology _ __ significantly disturbed? Are "Normal Circumstances" present? Yes _ ✓ _ No __ _

Are Vegetation _____, Soil _ __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No _ ✓ __	**Is the Sampled Area within a Wetland?** Yes _____ No _ ✓ __
Hydric Soil Present?	Yes _ __	No _ ✓ __	
Wetland Hydrology Present?	Yes _____	No _ ✓ __	

Remarks:

Non-wetland in the southwest corner of the property (south of the stream).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 meters)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	60	Y	FacU
2.			
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 meters)			
1. Rubus armeniacus	60	Y	Fac
2. Symphoricarpos albus	10	N	FacU
3.			
4.			
5.			
	70	= Total Cover	
Herb Stratum (Plot size: 1 meter)			
1. Convolvulus arvensis	30	Y	Upl
2. Hedera helix	30	Y	Upl
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	70	x 4 =	280
UPL species	60	x 5 =	300
Column Totals:	190 (A)		760 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

Prevalence Index is Ã3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Wetland Non-Vascular Plants[1]

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _ ✓ __

Remarks:

SOIL

Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (**LRR A**)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: 11718 & 11800 55th Avenue NE City/County: Marysville / Snohomish Sampling Date: 09.08.2021

Applicant/Owner: David Ross State: WA Sampling Point: DP3

Investigator(s): Louis Emenhiser Section, Township, Range: S10, T30N, R5E, W.M.

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10%

Subregion (LRR): LRR-A Lat: 48.101280 Long: -122.158623 Datum:

Soil Map Unit Name: Lynnwood loamy sand NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes No ✓	
Wetland Hydrology Present?	Yes No ✓	

Remarks:

Non-wetland in the center of the site east of the stream.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 meters)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 meters)			
1. Rubus armeniacus	30	Y	Fac
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Agrostis capillaris,	60	Y	Fac
2. Cirsium vulgare	10	N	FacU
3. Dactylis glomerata	10	N	FacU
4. Phalaris arundinacea	10	N	FacW
5. Hypochaeris radicata	5	N	FacU
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is Ã3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Wetland Non-Vascular Plants[1]

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

SOIL

Sampling Point: DP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (**LRR A**)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: 11718 & 11800 55th Avenue NE City/County: Marysville / Snohomish Sampling Date: 09.08.2021

Applicant/Owner: David Ross State: WA Sampling Point: DP4

Investigator(s): Louis Emenhiser Section, Township, Range: S10, T30N, R5E, W.M.

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): LRR-A Lat: 48.101642 Long: -122.158797 Datum:

Soil Map Unit Name: Custer fine sandy loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes No ✓	
Wetland Hydrology Present?	Yes No ✓	

Remarks:

Non-wetland in the north central part of the site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 meters)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 meters)			
1. Rubus armeniacus,	30	Y	Fac
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Agrostis capillaris,	65	Y	Fac
2. Dactylis glomerata	20	Y	FacU
3. Holcus lanatus	10	N	Fac
4. Hypochaeris radicata	5	N	FacU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is Ã3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Wetland Non-Vascular Plants[1]

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

SOIL

Sampling Point: DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (**LRR A**)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Project/Site: 11718 & 11800 55th Avenue NE City/County: Marysville / Snohomish Sampling Date: 09.08.2021

Applicant/Owner: David Ross State: WA Sampling Point: DP5

Investigator(s): Louis Emenhiser Section, Township, Range: S10, T30N, R5E, W.M.

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): LRR-A Lat: 48.101538 Long: -122.157789 Datum: _____

Soil Map Unit Name: Custer fine sandy loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _ __, Soil _ __, or Hydrology _ __ significantly disturbed? Are "Normal Circumstances" present? Yes _ ✓ _ No __ _

Are Vegetation _____, Soil _ __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _ __	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _ __ No ✓ __	
Wetland Hydrology Present?	Yes _____ No ✓ __	

Remarks:

Non-wetland in the north eastern part of the site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 meters)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10 meters)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 1 meter)			
1. Agrostis capillaris,	60	Y	Fac
2. Holcus lanatus	20	Y	Fac
3. Schedonorus arundinaceus	10	N	Fac
4. Hypochaeris radicata	5	N	FacU
5. Dactylis glomerata	5	N	FacU
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is Ã3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Wetland Non-Vascular Plants[1]

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: DP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (**LRR A**)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

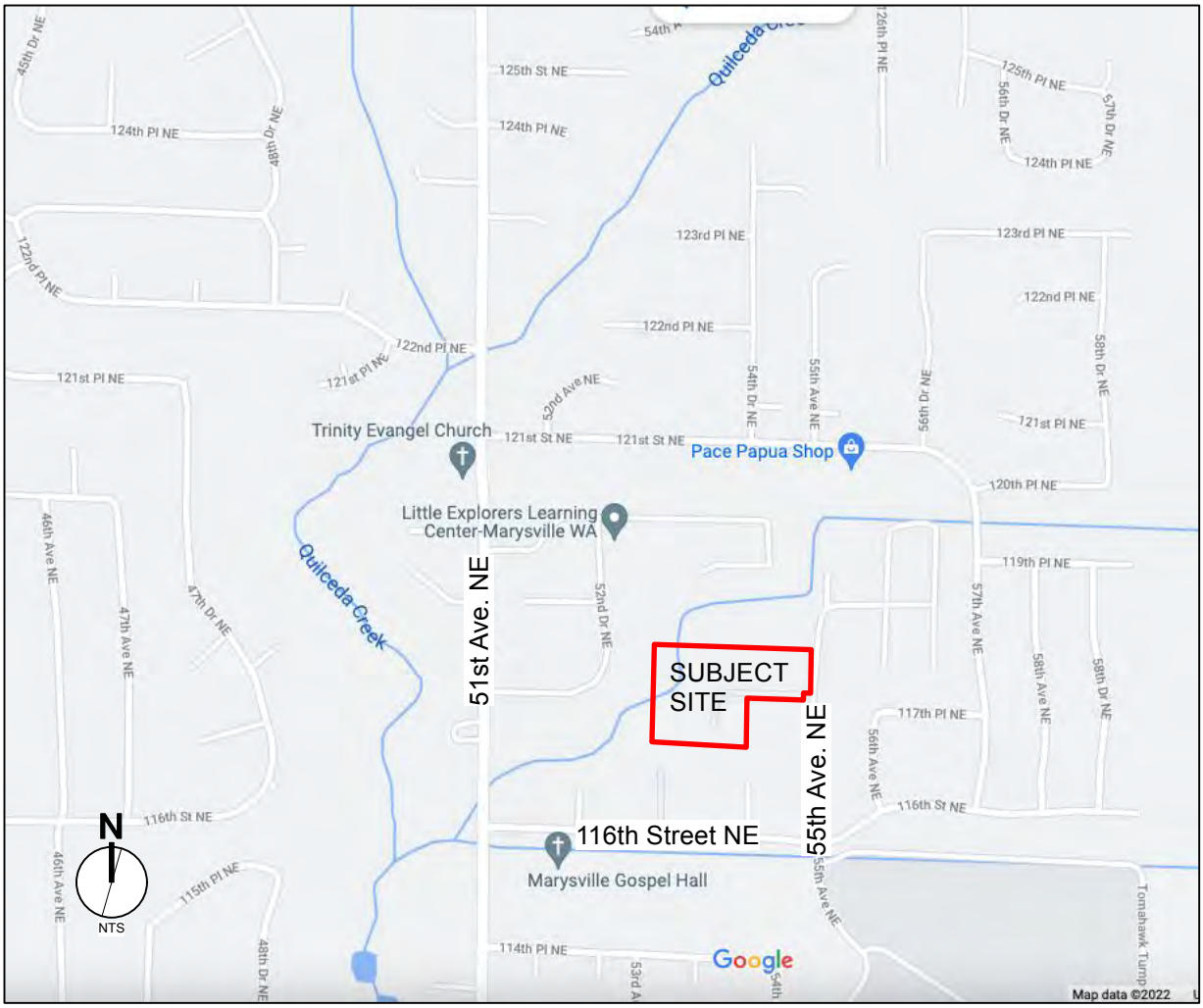
Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

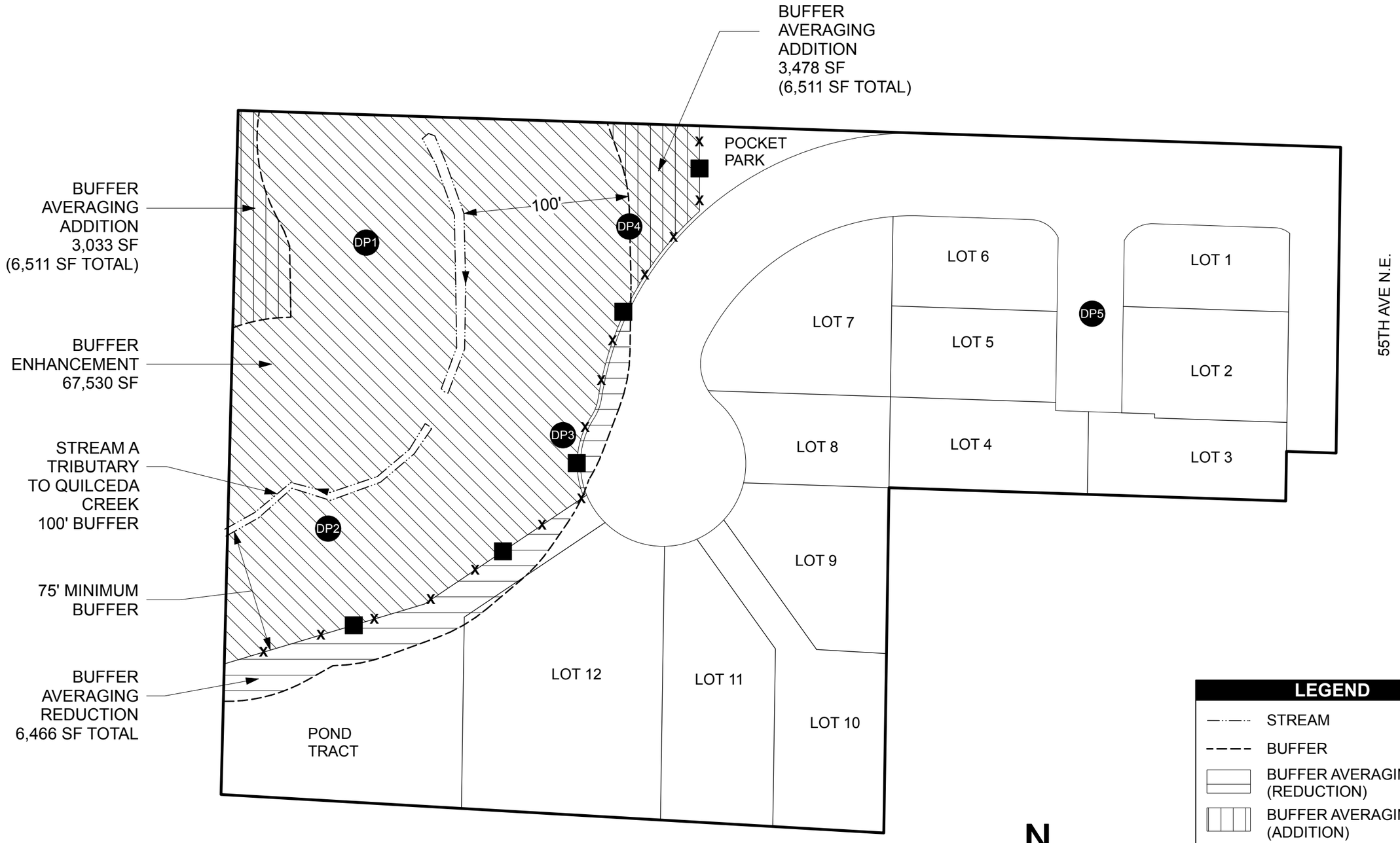
Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Acre Job: 21071 Drawn By: L. Emenhiser Date: 01.13.2022	PREPARED FOR: David Ross 11718 55th Avenue NE Marysville, WA 98271	VICINITY MAP ROSS 11718 & 11800 55TH AVENUE NE MARYSVILLE, WA TAX PARCEL NOS. 30051000201600 & 30051000204200.	PREPARED BY: Acre Environmental Consulting, LLC PO Box 55248 Shoreline, WA 98155 Phone: (206) 450-7746 Email: louis@acreenvironmental.com	ACRE ENVIRONMENTAL CONSULTING, LLC	MAP SHEET: Vicinity



LEGEND

- STREAM
- BUFFER
- BUFFER AVERAGING (REDUCTION)
- BUFFER AVERAGING (ADDITION)
- BUFFER ENHANCEMENT
- X X TWO-RAIL FENCE
- CRITICAL AREAS SIGN
- DP1 DATA POINT (5 TOTAL)

N

SCALE 1" = 60'

0 60 120

MAP SHEET: CA1.00

ACRE ENVIRONMENTAL CONSULTING, LLC

PREPARED BY:
Acre Environmental Consulting, LLC
PO Box 55248
Shoreline, WA 98155
Phone: (206) 450-7746
Email: louis@acreenvironmental.com

CRITICAL AREA STUDY & MITIGATION MAP
ROSS 11718 & 11800 55TH AVENUE NE
MARYSVILLE, WA
TAX PARCEL NOS. 30051000201600 & 30051000204200.

PREPARED FOR:
David Ross
11718 55th Avenue NE
Marysville, WA 98271

Acre Job: 21071
Drawn By: L. Emenhiser
Date: 01.13.2022