CRITICAL AREAS REPORT & PROPOSED MITIGATION PLAN
GAMLAM PROPOSED 12-LOT PLAT
INCORPORATED CITY OF MARYSVILLE, WASHINGTON
CURRENT TAX PARCEL #00590700001900

PREPARED FOR:
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(Property Owner)
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TABLE OF CONTENTS

ATTACHMENTS:

INTRODUCTION AND BRIEF SITE DESCRIPTION

The project site is located at 5811—87th Avenue NE in the incorporated city of Marysville, Washington. The subject property is currently owned by John Gamlam and the current tax parcel number for the project site follows: 00590700001900. Based on the survey map provided by *Sound Development Group, LLC*, the project site encompasses approximately 4.64 acres. The subject property currently contains an existing gravel driveway, concrete areas, a single-family residence, a wellhouse, an auxiliary building, and additional infrastructure normal to single-family residential development in the region.

The property owner retained *Wetlands & Wildlife, Inc.* to evaluate the site features and proposed site development described in this report for compliance with Chapter 22E.010 (Critical Areas Management) of the City of Marysville's Municipal Code (MMC). *Wetlands & Wildlife, Inc.* conducted detailed on-site Critical Areas evaluations on the project site in August of 2021 and February of 2022, pursuant to the code requirements outlined in the MMC and professional ecological industry standards. Please view the attached Critical Areas Overview Map (Map Sheet CA1.00) and the RESULTS AND FINDINGS OF CRITICAL AREAS EVALUATION section of this report for further information.

STATEMENT OF QUALIFICATIONS TO CONDUCT THIS EVALUATION

Per requirements outlined in the Marysville Municipal Code, Chapter 22E.010 (Critical Areas Management), a qualified professional is required to perform Critical Areas evaluations and write accompanying reports for submittal. Therefore, the following provides a brief overview of my experience and credentials to conduct the required detailed evaluations on the subject property. I am the Founder, Owner, and Principal Wetland and Wildlife Ecologist of *Wetlands & Wildlife, Inc*. I attended the University of Montana where I graduated cum laude with a degree in Wildlife Biology. As of 2023, I have 22 years of direct experience as a professional Biologist / Ecologist in western Washington and 26 years of overall experience completing natural resource assessments among many different ecosystems across the western United States. I have worked as a professional Biologist / Ecologist for federal, state, and county environmental agencies, as well as several private environmental consulting firms with specialties in wetlands, streams, rivers, lakes, and wildlife habitat. In my 26 years of experience, I have specialized in review of proposed land use and building development permit applications as they pertain to Critical Areas (wetlands, rivers, streams, lakes, and habitats of protected fish and wildlife species). I gained some of that experience working as a Senior Reviewing Ecologist for King County DDES and a Regulatory Biologist for Snohomish County PDS, while I also have many years of experience as a private environmental consultant.

I am listed on several Preferred / Qualified Consultant Rosters throughout western Washington. I am highly experienced with the required U.S. Army Corps of Engineers and Washington State wetland delineation methods. In addition to the wetland delineation certification, I am trained by the Washington Department of Ecology and have 18 years of experience in the use of the required Wetland Rating Form for western Washington (since its inception). I am trained by the Washington Department of Ecology to determine Ordinary High Water Mark (OHWM) locations for rivers, streams, and lakes. In addition to my expertise related to wetlands and streams, I have many years of experience conducting surveys of special-status wildlife species in the western U.S. I received certifications from the Washington Department of Fish and

Wildlife for terrestrial wildlife habitat assessments and wildlife surveys of special-status wildlife species.

I have conducted over 2,300 biological / ecological assessments in different capacities on properties with many habitat types and zoning designations, from small, urban properties (0.25 acres) to large, rural properties (up to 2,000 acres in size). I have been selected by several local city jurisdictions to provide on-call 3rd-party environmental reviews of proposed development projects for compliance with local Critical Areas Ordinances and the FEMA Floodplain Habitat Assessment and Mitigation document.

BRIEF DESCRIPTION OF PROPOSED PROJECT

Please see the project Site Plan prepared by *Sound Development Group, LLC* and the attached Map Sheet CA1.00 prepared by *Wetlands & Wildlife, Inc.* for a depiction of the information provided in this report section. The property owner is proposing to subdivide the existing 4.64-acre property into 12 single-family residential lots (a proposed 12-lot plat). The property owner is also proposing to demolish and remove the existing residential structures and other existing site improvements. As depicted on the project Site Plan and the attached Map Sheet CA1.00, the proposed lots will be accessed from a new cul-de-sac which extends from 88th Avenue NE and a new alleyway is also proposed.

Prior to any earthwork associated with the proposed project, temporary erosion and sediment control (TESC) best management practices (silt fence or similar) will be installed down-gradient of the proposed clearing / grading activities in order to avoid erosion and sediments from reaching the on-site wetland and buffer areas. All TESC measures will be installed in accordance with industry standards and the applicant shall ensure proper function of the TESC measures throughout the duration of the project.

One regulated wetland and its associated protective buffer exists on-site. As part of the proposed 12-lot plat, the wetland and the final buffer will be permanently protected and placed into a Critical Areas Tract. In order to accommodate the proposed development, the applicant is proposed buffer width averaging in accordance with the City of Marysville Critical Areas Code. Per specific project design, the vast majority of the proposed development will be located outside of the proposed Critical Area buffer. The only portion of the proposed project that will create unavoidable buffer impacts is the proposed stormwater discharge required to discharge stormwater from the proposed detention pond. The proposed stormwater features will create temporary buffer impacts (521 square feet) during installation of the proposed stormwater transport pipe and those temporarily impacted buffers will be restored. The proposed stormwater trench and catch basins will create minor permanent buffer impacts (110 square feet), and those permanent buffer impacts will be mitigated via buffer enhancement. Per the code requirements outlined in MMC 22E.010.370, the applicant is proposing to install permanent split-rail fencing and permanent signage along the proposed Critical Areas buffer on-site, and the Critical Areas and their buffers will be placed into separate tracts for permanent protection of the Critical Areas and buffers per MMC 22E.010.350.

This report is intended to outline how the proposal on the subject property adheres to the requirements outlined in MMC Chapter 22E.010 (Critical Areas Management) related to regulated Critical Areas. See the report sections below for more details regarding how the proposed project complies with the City of Marysville regulations. Please also see the attached Map Sheet CA1.00 depicting the project proposal.

METHODOLOGIES OF CRITICAL AREAS EVALUATION

Wetlands & Wildlife, Inc. used methodologies described in Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State to determine whether any regulated Ordinary High Water Marks (OHWM's) exist on or near the subject property.

The routine methodologies described in the Washington State Wetlands Identification and Delineation Manual were used to make a determination regarding any potential regulated wetlands. In addition, *Wetlands & Wildlife, Inc.* evaluated the site using 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, this Regional Supplement takes precedence over the Corps Manual for applications in the Western Mountains, Valleys, and Coast Region.

According to the federal and state methodologies described above, identification of wetlands is based on a three-factor approach involving indicators of hydrophytic vegetation, hydric soils, and 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 site characteristics 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.) Examination to determine if adequate hydrology exists for sufficient durations during the early part of the growing season in the same locations as the previous two steps.

Wetlands & Wildlife, Inc. examined the entire subject property. *Wetlands & Wildlife, Inc.* also visually assessed adjacent properties within approximately 300 feet of the proposed project limits, to the maximum extent possible without entering adjacent private properties. While a detailed assessment of Critical Areas on adjacent private properties was not possible due to lack of legal site access, *Wetlands & Wildlife, Inc.* conducted a review of all available information to assess the presence of off-site Critical Areas within 300 feet of the subject site. This review is necessary to determine if any regulated Critical Areas exist off-site which would cause protective buffers to extend on-site and affect the development proposal.

In addition to on-site field evaluations, *Wetlands & Wildlife, Inc.* examined aerial photographs, public utility infrastructure, and topographical data (elevation contours) on Snohomish County's PDS Portal map system and the City of Marysville's Maps. 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), Priority Habitats and Species (PHS) maps produced by the Washington Department of Fish and Wildlife (WDFW), and fish distribution maps produced by the WDFW (SalmonScape), Pacific States Marine Fisheries

Commission (StreamNet) and Washington Department of Natural Resources (Forest Practices Application Mapping Tool [FPAMT]) were also evaluated as part of this project review.

In addition to the review of the resources listed above, *Wetlands & Wildlife, Inc.* also obtained the plat map for the adjacent development to the south of the project area—Caleb's Park. The wetland delineation boundary for that project aided in the mapping and classification of the off-site portions of the identified wetland for this project.

The on-site portions of the wetland shown on Map Sheet CA1.00 as dark / bold lines were delineated by *Wetlands & Wildlife, Inc.* using bright pink delineation flags, and these flags were labeled in sequential order in accordance with industry standards. The delineation flags were then surveyed by *Sound Development Group*, *LLC*, a professionally licensed land survey company. After the delineation flags were surveyed, *Wetlands & Wildlife, Inc.* imported the surveyed flag location data into a computer-aided drawing (CAD) program to depict the delineated wetland boundaries in relation to the property boundaries and other existing site features. Please view the attached Map Sheet CA1.00 which is attached to this report for a depiction of Critical Areas and buffers among the subject property and project vicinity.

RESULTS AND FINDINGS OF CRITICAL AREAS EVALUATION

As shown on the attached Map Sheet CA1.00, one wetland is located on the subject property. Our evaluations did not reveal any other Critical Areas located on or near the subject property that would affect the proposed development described in this report.

Cowardin Classifications:
According to the Cowardin System, as described in Classification of Wetlands and Deepwater Habitats of the United States, the classifications for the wetland follows:

Wetland A: Palustrine, Forested, Broad-Leaved Deciduous, Permanently Flooded (PFO1H)

Marysville Municipal Code Classifications:
Per the Marysville Municipal Code, Chapter 22E.010 (Critical Areas Management), the subject wetland located partially on the subject property is classified as follows:

Wetland A is located east and north of the proposed development area, as shown on the attached Map Sheet CA1.00. Wetland A was rated using the 2014 Washington State Wetland Rating System for Western Washington, Washington State Department of Ecology Publication No. 14-06-029, published October 2014. Wetland A appears to meet the outlined criteria for a "Depressional" wetland. Therefore, the hydrogeomorphic (HGM) class used to rate the wetland is a "Depressional" wetland on the Wetland Rating Form. Using the Wetland Rating Form, the subject wetland scored a total of 21 points (7 points for Water Quality Functions, 8 points for Hydrologic Functions, and 6 points for Habitat Functions) and is therefore considered a **Category II wetland**. The buffer for Wetland A is established according to MMC 22E.010.100(4). Per the "Wetland Buffer Widths" table in this code section, the buffer width for Category II wetlands equal 100 feet **Therefore, the proposed buffer width required for Wetland A equals 100 feet**. Please view the attached Map Sheet

CA1.00 for a depiction of Wetland A. Please note that permanent signage, a split-rail fence, and creation of separate Critical Areas Tracts are also proposed as part of this project. See the PROPOSED PERMANENT SPLIT-RAIL FENCE AND PERMANENT CRITICAL AREAS SIGNS section of this report below for more details.

Building Setback Line:

In addition to the protective buffer widths described above, Marysville Municipal Code Section 22E.010.380 states that "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." As such, the 15-foot building setback line (BSBL) is depicted on the Critical Areas Overview Map (Map Sheet CA1.00), and no future structures shall be located within 15 feet of the established overriding buffers described above.

On-site Vegetation and Soils Data:

Wetlands & Wildlife, Inc. collected detailed vegetation and soils data at six (6) different locations on the subject property to gain representative data regarding on-site vegetative and soil characteristics. Please view the six Wetland Determination Data Forms (produced by the Army Corps of Engineers) which describe the actual vegetation and soil characteristics at each data point location. The Wetland Determination Data Forms are attached to this report and are labeled as DP1 through DP6. Please also view the location of these data points (labeled as DP1 through DP6) shown on the attached Map Sheet CA1.00. Please note that *Wetlands & Wildlife, Inc.* gathered wetland determination data at two additional locations (DP5 and DP6) on the property on April 24, 2023 per the request of Amy Hess, Senior Planner at the City of Marysville.

Natural Resource Conservation Service Soils Description:

The Natural Resources Conservation Service (NRCS) mapped the subject property as being underlain by Norma loam and Tokul gravelly medial loam (0 to 8 percent slopes and 8 to 15 percent slopes).

Norma loam is mapped among the northeastern corner of the subject property. Norma loam is typically formed on drainage-ways and depressions from parent material of alluvium. The depth to the restrictive layer in this soil type is typically more than 80 inches. Norma loam soils are generally poorly drained and ponding is frequent, though flood frequency is none. The available water capacity is moderate. The typical profile of this soil is characterized as ashy loam (0 to 10 inches below the soil surface) and sandy loam (10 to 60 inches below the surface). Minor inclusions noted for this soil are Bellingham (5 percent), Custer (5 percent), Terric Medisaprists (3 percent), and Alderwood (2 percent) soil series.

The Natural Resources Conservation Service (NRCS) mapped the remainder of the property as being underlain by Tokul gravelly medial loam (0 to 8 percent slopes and 8 to 15 percent slopes). Tokul gravelly medial loam is typically formed in till plains and hillslopes with a parent material of volcanic ash mixed with loess over glacial till. The depth to the restrictive feature is typically between 20 to 39 inches where a cemented horizon occurs. This soil series is moderately well-drained, and the frequency of flooding and ponding is none. The available water capacity is moderate. The typical soil profile of Tokul gravelly medial loam is slightly decomposed (0 to 1 inch below the surface) and highly decomposed plant material (1 to 2 inches below the surface), gravelly medial loam 2 to 24 inches below the surface, gravelly medial fine sandy loam 24 to 33 inches below the surface, and cemented material from 33 to 62 inches below the surface. Minor inclusions noted for this soil are Pastik (5 percent), Barneston (5 percent), Norma (3 percent) and McKenna (2 percent) soil series.

EXISTING ECOLOGICAL FUNCTIONS AND VALUES ASSESSMENT

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

The three main functions provided by wetlands include water quality, stormwater / hydrologic control, and wildlife habitat. These functions become increasingly important in an urbanizing environment. The on-site wetland is dominated by a variety of vegetation types including emergent, scrub-shrub, and forested Cowardin classes. Established vegetation serves to intercept rain fall before it strikes the soil, thereby preventing erosion and improving water quality. The vegetation and adsorbent soils serve to trap sediment and pollutants and provide increased water quality functions to aid in a reduction of suspended sediment in surface water flows which results in cleaner water leaving the site. Among areas of steep gradient topography, the function of these characteristics is particularly important to decrease the water velocity of the associated down-gradient systems, which can reduce peak flood stages during heavy rainfall and increase water retention during dry periods. Water retained within the wetland slowly infiltrates into the ground, thus recharging groundwater and helping to moderate groundwater levels and reduce down-gradient flows.

As evidenced by the Habitat Functions score of 6 on the Wetland Rating Form, Wetland A provides a low to moderate level of habitat for wildlife species. The on-site wetland contains multiple dominant vegetation classes and multiple hydroperiods (permanently flooded or inundated and saturated), which provide functional habitat for wildlife. However, the overall function of these areas is significantly reduced due to the dense residential land-use in the vicinity and proximity to roadways that support daily vehicular traffic. The acreage of habitat provided by the on-site Critical Areas increase the ecological functions associated with wildlife habitat by providing hiding cover, thermal cover and forage opportunities in close proximity. As areas become further populated with humans and many habitat areas become fragmented, the protected habitat provided by wetlands and associated buffers become increasingly important.

In addition to the functions mentioned above, regulated Critical Areas in western Washington also often provide aesthetic value, recreational opportunities, and educational tools.

PROPOSED BUFFER WIDTH AVERAGING

As depicted on the attached Map Sheet CA1.00, the property owner is proposing to divide the existing parcel into twelve (12) separate buildable lots. Portions of the proposed lots are located within the standard overriding buffer associated with Wetland A, and there is no opportunity to avoid these impacts due to site conditions / constraints and the extent of the property encumbered by the standard overriding wetland buffer. Therefore, the property owner is proposing buffer width averaging in accordance with MMC 22E.010.100(5)(a) to allow for the proposed development shown on the attached Map Sheet CA1.00.

Marysville Municipal Code section 22E.010.100(5)(a) allows applicants to reduce the standard wetland buffer by up to 25% when applying buffer averaging. Furthermore, this code section states the following: "… the total area contained within the buffer after averaging is no less than that contained within the standard buffer

prior to averaging". As shown on Map Sheet CA1.00, the proposed buffer width averaging (reduction) area will reduce the standard buffer width associated with Wetland A from the 100-foot standard buffer to a minimum width of approximately 76.1 feet (23.9% reduction of the standard buffer with 76% of the standard buffer remaining), thereby meeting the code requirements related to the minimum buffer distance associated with the proposed buffer averaging. The proposed buffer averaging (reduction) area equals 4,492 square feet.

To offset the proposed 4,492 square feet of buffer averaging (reduction), the property owners are proposing a total of 4,639 square feet of buffer width averaging (addition) in two separate locations on the property. The western proposed buffer averaging (addition) area equals 215 square feet (near the western property line), while the eastern proposed buffer averaging (addition) area equals 4,424 square feet located along east of the proposed lots. Please see Map Sheet CA1.00 for the two proposed locations. The buffer width averaging proposal will result in a ratio of 1.03:1 (buffer width addition to buffer width reduction), resulting in a slightly larger area of buffer on the property compared to using the current / minimum buffer averaging requirements. The proposed buffer averaging plan has been prepared in accordance with the code requirements listed in MMC 22E.010.100(5)(a) and in accordance with professional ecological industry standards. Therefore, the total area of buffer on the project site will be slightly larger than that contained within the standard buffer prior to the buffer width averaging proposal.

An additional code requirement for buffer averaging proposals as described in MMC 22E.010.100(5)(a) is that the averaging will "not impair or reduce the habitat, water quality purification and enhancement, storm water detention, ground water recharge, shoreline protection and erosion protection and other functions of the wetland and buffer. Based upon the detailed ecological functions assessment conducted on-site by *Wetlands & Wildlife, Inc.*, the vast majority of the proposed buffer averaging (reduction) area contains non-native vegetation, maintained lawn, and / or impervious surfaces associated with the northern portion of the existing house and concrete walkway. The proposed buffer averaging (addition) areas are dominated by native forested vegetation. Therefore, the applicant's buffer averaging proposal will not diminish the ecological functions and values provided by the Critical Areas. In fact, the proposed buffer averaging plan will provide a significant increase in ecological functions when compared to the current / baseline buffer conditions due to the inclusion of areas dominated by native forested buffer.

Based on the detailed Critical Areas assessment conducted by *Wetlands & Wildlife, Inc.,* the applicant's buffer width averaging proposal clearly meets all of the code criteria outlined in MMC 22E.010.100(5)(a) and will not create any adverse ecological impacts. Per City of Marysville requirements, the buffer averaging (addition) area will be preserved as regulated buffer in perpetuity among the permanently protected Critical Areas Tract as a result of the proposed buffer averaging plan.

PROPOSED TEMPORARY BUFFER IMPACTS WITHIN REDUCED BUFFER

As part of this project proposal, the applicant will install temporary erosion and sediment control (TESC) best management practices (BMP's) prior to any clearing or grading associated with the proposed temporary buffer impacts. The TESC BMP's will be installed per current industry standards and will remain

in place until the soils among all temporarily impacted buffer areas are stabilized, in an effort to minimize adverse impacts to Critical Area buffers.

Based on our detailed site review, it is the professional opinion of *Wetlands & Wildlife, Inc.* that the project has been specifically designed to avoid and / or minimize impacts to Critical Areas and associated buffers in accordance with the requirements in the City of Marysville Code. Where avoidance is not possible due to stormwater engineering requirements associated with proposed project described in this report, the project design will minimize impacts within Critical Area buffers.

As part of the proposed project, the applicant is proposing to demolish the existing dilapidated house and the concrete walkway around the house. As depicted on Map Sheet CA1.00, the portion of the proposed house and concrete walkway to be removed from the averaged buffer area equal 1,084 square feet. As described earlier in this report, the applicant is proposing to install the necessary stormwater drainage features within the averaged wetland buffer. The proposed project will result in 521 square feet of temporary buffer impacts among the averaged buffer in order to install the proposed / required stormwater transport pipe for the stormwater discharge. The proposed stormwater pipe will transport stormwater from the proposed detention pond to the gravel-filled dispersion trench. Due to the topography on the property, the dispersion trench is required to be placed as shown on the Site Plan and Map Sheet CA1.00 in order to gain the elevation drop / decrease for the stormwater system to function as designed. If the proposed stormwater trench was installed higher in elevation, the proposed stormwater system would not function properly and would also result in more erosion and sedimentation due to being placed higher on the slope. Due to these factors, no alternative location for the proposed stormwater components exists on the subject property per detailed evaluations by *Sound Development Group, LLC*. The proposed stormwater drainage features (new utilities) are allowed within Critical Area buffers if no other feasible alternative exists and if the location, design, and construction minimizes impacts to the Critical Area buffer. Based on very specific design by the project team, the location, design, and construction techniques associated with the proposed stormwater components will minimize impacts to the buffers in accordance with the code requirements outlined in the City of Marysville Code.

Based on detailed ecological assessments by *Wetlands & Wildlife, Inc.*, the proposed temporary buffer impact areas currently provide very low ecological functions, and those functions will be quickly restored to their current ecological conditions after the proposed temporary buffer impacts occur. Based upon our detailed evaluations, the temporary buffer impacts described above are being proposed entirely among existing impervious surfaces associated with the existing house and concrete walkway (which will be removed as part of this project), legally established, maintained areas currently dominated by grasses, herbs, or non-native, invasive vegetation (no native trees and shrubs among these temporary buffer impact areas). All of the temporarily impacted buffer areas will be seeded and restored after the temporary buffer disturbances occur. Please see the section below titled PROPOSED RESTORATION OF TEMPORARY BUFFER IMPACTS for a discussion regarding the proposed restoration efforts related to the proposed temporary buffer impacts.

PROPOSED RESTORATION OF TEMPORARY BUFFER IMPACTS

As discussed above, the applicant is proposing to temporarily impact a total of 1,605 square feet of the averaged buffer on the property in order to install the proposed stormwater components and to demolish the existing residence and concrete walkway. To aid in soil stabilization and erosion reduction, any temporarily disturbed bare ground areas within the on-site buffer shall be seeded with the recommended, certified grass / herb seed mixtures below (or a similar native grass seed mixture as approved by the City of Marysville reviewer or consulting biologist) after the temporary buffer disturbances have occurred:

Proposed Grass / Herb Seed Mixture for Non-Wetland Restoration Areas

Common Name	Latin Name	lbs./1,000 s.f.
Colonial bentgrass	*Agrostis tenuis*	0.6
Annual ryegrass	*Lolium multiflorum*	0.3
White clover	*Trifolium repens*	0.2

After the grass / herb seed mixtures have been applied to all bare ground areas within the proposed mitigation / restoration areas, weed-free straw shall be placed on top of the seed to aid in soil stabilization and erosion reduction while the grass / herb seed germinates and begins root growth. The silt fence and / or any other temporary erosion and sediment control measures will remain in place until the soil is sufficiently stabilized to prevent erosion of soil among the proposed restoration areas.

PROPOSED PERMANENT BUFFER IMPACTS WITHIN REDUCED BUFFER

In addition to the proposed temporary buffer impacts among the reduced buffer, the applicant is proposing 110 square feet of permanent buffer impacts among the reduced buffer in order to accommodate the above-ground portions of the proposed / required stormwater dispersion trench and stormwater catch basins. This unavoidable, permanent buffer impacts associated with utilities will be mitigated for via buffer enhancement Please see the section below titled PROPOSED MITIGATION EFFORTS FOR PERMANENT BUFFER IMPACTS for more information.

PROPOSED COMPENSATORY MITIGATION EFFORTS FOR PERMANENT BUFFER IMPACTS

As previously described in this report, the applicant is proposing to install stormwater components (utilities) within the on-site averaged wetland buffer. The only portion of the proposed utilities within the reduced buffer that will persist above the ground surface will be the proposed gravel-filled dispersion trench and catch basins at each of the dispersion trench, thereby constituting 110 square feet of permanent buffer impacts.

Based on our detailed ecological assessments associated with this proposal, the area where the permanent buffer impacts will occur currently contains two western red cedar trees or shaded bare ground areas, herbs (such as creeping buttercup, common dandelion, or hairy cat's ear), or trailing blackberry.

The applicant is proposing to provide mitigation via vegetative enhancement among the buffer in order to compensate for the 110 square feet of permanent buffer impacts. As the area for the proposed dispersion trench contains two trees the applicant is proposing to provide the standard tree replacement ratio of 3:1 (3 trees planted for each tree removed / impacted by the proposal). Since the trees are proposed to be planted on 10-foot centers, planting a total of six trees among the mitigation area results in the proposed mitigation area being 600 square feet in size, which is nearly six times the standard mitigation ratio of 1:1 which would normally be required per the City of Marysville Code. The proposed mitigation plan (buffer enhancement) includes removal of any non-native, invasive vegetation among the buffer enhancement area on the site AND planting native trees and shrubs. The mitigation proposal includes planting plant species (willow whips and western red cedar) that can tolerate fluctuating hydrology, which is necessary when planting down-gradient of a stormwater trench. The proposed mitigation area is located immediately down-gradient of the proposed stormwater dispersion trench, between the proposed trench and the on-site wetland area. This mitigation proposal will aid in increasing plant diversity among the buffer, will significantly increase the hydrologic / stormwater control down-gradient of the proposed trench, and will also aid in water quality functions because the increased plants will reduce the potential for erosion down-gradient of the proposed stormwater trench. Please see Map Sheet CA1.00 for location of this proposed enhancement area, labeled as Proposed Mitigation Area A. Per professional ecological industry standards, this mitigation proposal includes calculating required plant quantities by planting 100% of the mitigation area (600 square feet) with native trees and planting 50% of the mitigation area with native shrubs (whips / cuttings when planted). **Using these calculations, the applicant is proposing to plant 6 trees and 33 willow whips / cuttings among Proposed Mitigation Area A.** Please see the table below for the proposed buffer enhancement plantings among Proposed Mitigation Area A on the project site:

Proposed Buffer Enhancement Plantings (Proposed Mitigation Area A); approx. 60 square feet				
Common Name	**Latin Name**	**Size**	**Spacing**	**Quantity**
1. Western red cedar	*Thuja plicata*	2-gallon	10' o.c. min.	6
2. Scouler's willow	*Salix scouleriana*	Whip / Cutting	3' o.c. min.	33

MITIGATION PLANTING NOTES AND GUIDELINES

Mitigation projects of this sort are typically more complex to install than can be described in plans. Careful monitoring by a qualified professional ecologist for all portions of this planting project is strongly recommended. Timing and sequencing are important to the success of this type of project.

Mitigation plants should be installed between the dates of October 15th and March 15th if possible. If needed, obtain prior approval from the City of Marysville to plant outside of these dates. 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 professional ecologist and / or the City of Marysville.

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 surveyor's ribbon, or other approved marking device, shall be attached 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 during the 5-year monitoring period (if required).

Wood chips or other suitable material shall be used for mulching in the planting areas. Mulch is to be placed in a two-foot diameter area around the base of each planted tree or shrub at a depth of three to four inches. However, a four-inch diameter ring around the base of each plant shall be kept free of mulch. Arborist's woodchips are the preferred mulch material.

Irrigation / Watering: Water shall be provided during the dry season (May 1 through October 1) for the first two years (minimum) after installation to ensure plant survival and establishment. Water should be applied at a rate of one inch of water twice per week.

Upon complete installation of the required plantings, an inspection by a qualified professional ecologist shall be made to determine plan compliance. A compliance report (As-Built Report) shall be supplied to the City of Marysville within 30 days after the completion of planting, unless otherwise approved by the City of Marysville. See below for more information.

MITIGATION PLAN PERFORMANCE STANDARDS, MONITORING, MAINTENANCE, AND CONTINGENCY

Goals and Objectives of the Proposed Mitigation Plan:

The primary goal of the project is to effectively compensate for the any potential adverse impacts to the ecological functions resulting from the unavoidable buffer impacts associated with the proposed stormwater dispersion features. This primary goal will be achieved by removing all non-native, invasive vegetation among the mitigation planting areas, planting native trees and shrubs among the proposed mitigation areas as outlined in this report, and monitoring / maintaining the planting areas to ensure that the plan meets performance standards as outlined in this report.

Mitigation Plan Implementation Inspection and As-Built Report:

Following the implementation of the proposed mitigation efforts described in this report, the applicant will contact *Wetlands & Wildlife, Inc.* or another qualified professional of their choosing within 30 days of plant installation to conduct a site visit to confirm that all mitigation plan components have been implemented as outlined in this report. After conducting that installation inspection, *Wetlands & Wildlife, Inc.* will prepare a Mitigation Plan As-Built Report and submit that report to the City of Marysville for their review. The As-Built Report will provide confirmation that the mitigation plan was implemented as outlined in the approved report, or detail any minor adjustments required to the mitigation plan during its on-site implementation. Per standards, the As-Built Report will not be considered final until the City of Marysville has reviewed and approved the As-Built report, providing agreement with the findings.

Discussion Regarding Monitoring:

The applicant or assigned representatives shall monitor the mitigation planting area for a period of 5 years from the date of the City of Marysville approving the As-Built Report. The purpose of monitoring this mitigation project is to evaluate the success of the mitigation planting area. The project will be considered successful if monitoring demonstrates that the stated goals are met by the end of five years. Condition monitoring of the plantings will be done by a qualified ecologist. **Per the MMC, "The reports are to be prepared by a qualified scientific professional and reviewed by the community development department and should include monitoring information on wildlife, vegetation, water quality, water flow, storm water storage and conveyance, and existing or potential degradation, and shall be produced on the following schedule: (i) At time of construction; (ii) Thirty days after planting; (iii) Early in the growing season of the first year; (iv) End of the growing season of first year; (v) Twice the second year; and (vi) Annually thereafter.** Written monitoring reports describing the monitoring results will be submitted to the City of Marysville shortly after the inspection of each monitored year, or as required by the City. A final inspection will occur five years from the date of plant installation. The contracted ecologist or the property owner will prepare a final report discussing the success of the project or outlining contingency plans if needed. The property owner (and all successive property owners) shall grant access to the site for inspection and maintenance to the contracted Ecologist and to the City of Marysville during the monitoring / maintenance period or until the project is deemed successful by the Ecologist and the City of Marysville.

Discussion Regarding Maintenance Duration and Schedule:

The applicant or assigned representatives shall perform maintenance of the mitigation / restoration area(s) in accordance with ecological industry standards and guidelines. Maintenance may include watering, weeding, removal of all noxious and invasive weeds, and any other measures needed to ensure performance standards are met throughout the mitigation area.

Success Criteria / Performance Standards:

The applicant proposes to meet the following industry standards among the mitigation area in an attempt to measure success of the proposed mitigation planting plan and compensate for project impacts among the on-site Critical Area buffers:

Performance Standards					
Monitoring Year after installation	*Year One*	*Year Two*	*Year Three*	*Year Four*	*Year Five*
Shrub and Sapling Tree Cover**	>30%	>30%	>40%	>60%	>75%
Shrub and Sapling Tree Survival**	100%	>90%	>80%	>80%	>80%
Percent Invasive Species	<20%	<20%	<20%	<20%	<10%

**Notes: The performance standards above include beneficial native plants in that naturally pioneer in the planted area. Also note that the percent cover performance standards shown above are related to bare ground areas that are planted with the full tree and shrub cover requirements, and these percentages do not apply to those areas where trees and shrubs are planted among existing vegetation (if applicable).

Contingency Plan:

If it is determined at any time during the monitoring period that the goals of the mitigation / restoration plan or performance standards outlined in this report are not being met, a contingency plan will be devised to

improve or alter those elements that are deficient. If measures beyond standard maintenance of the mitigation / restoration areas are required, a plan containing these measures shall be submitted to the City of Marysville for their review prior to implementation.

DISCUSSION REGARDING PERFORMANCE BOND

Per the City of Marysville Code requirements, a final plan consistent with the standards in MMC 22E.010.160 will be submitted to the City prior to final development approval. The applicant will provide a financial guarantee, in the form of a bond or other security device in a form acceptable to the city attorney, assuring that the work will be performed as planned and approved, consistent with MMC 22E.010.160(2). Please see the total estimated cost of the proposed mitigation planting efforts below:

Install 6 2-gallon trees @ approximately $15.00 each (installed price):	$90.00
Install 33 willow whips / live cuttings @ approximately $3.00 each (installed price):	$99.00
Grass / herb seed mixture to spread among temporary buffer impact areas (approx. cost):	$50.00
TOTAL ESTIMATED COST OF PLANT MATERIAL AND INSTALLATION LABOR	**$239.00**

DISCUSSION REGARDING EXTENT OF NON-NATIVE, INVASIVE SPECIES AMONG BUFFER

In accordance with MMC section 22E.010.100(3), *Wetlands & Wildlife, Inc.* evaluated the vegetative condition of the on-site buffer area to determine if any additional compensatory mitigation efforts are required to ensure appropriate ecological function protection of the on-site Critical Areas and associated buffers. During our on-site evaluations, we examined the existing conditions among the proposed Critical Areas Tract (NGPA Tract) which includes the wetland and protective buffer areas including the proposed buffer averaging plan described in this report. Based on our evaluations and calculations, the total Critical Areas Tract on the subject property (including the wetland and overriding buffer) equals 129,940 square feet. The total amount of buffer area (but not the wetland or stream) equals 93,323 square feet. Per very site-specific ecological analyses on the property, the only portion of the proposed averaged buffer that is dominated by non-native, invasive vegetation species is located among the extreme western portion of the property (west of the existing house). The square footage of this area within the overriding buffer that is dominated by non-native, invasive species such as Himalayan blackberry and / or Japanese knotweed equals approximately 5,306 square feet. Based on these calculations, the percentage of the proposed Critical Areas Tract that is dominated by non-native, invasive species equals 4.0% and the percentage of the proposed averaged buffer that is dominated by non-native, invasive species equals 5.7%. Therefore, the percentage of area that is currently dominated by non-native, invasive vegetation is significantly less than 20%, the City's allowed percentage based on past projects that we have consulted on within the City of Marysville's jurisdiction.

Therefore, in accordance with City of Marysville standards and requirements, the proposed project does not include a proposal to remove the non-native, invasive species and enhance that area among the Critical Areas Tract, since the area is significantly less than 20% of the overall portion of the site that is within Critical Areas and / or protective buffer. The vast majority of the on-site Critical Areas (wetland and buffer) are

already dominated by native vegetation and will continue to be maintained that way in perpetuity since the Critical Areas Tract will be protected in perpetuity as part of this project.

PROPOSED PERMANENT FENCING AND CRITICAL AREA SIGNS

Per MMC Section 22E.010.370, permanent two-rail fencing and permanent signage adjacent to a regulated wetland shall be required. Two-rail fencing shall be constructed with pressure treated posts and rails and cemented into the ground with either cedar or treated rails. Per City of Marysville and industry standards, permanent signs designating the presence of an environmentally sensitive area shall be posted along the buffer boundary. The signs shall be posted at a minimum rate of one every 100 lineal feet and at least one sign shall be placed in any lot that borders the Critical Area. Per these standards and code requirements, the applicant is proposing to construct a permanent two-rail fence along the proposed averaged wetland buffer line, in the locations depicted on the attached Map Sheet CA1.00. Permanent Critical Area signs will be attached to the permanent two-rail fence no farther apart than one sign every 100 lineal feet, resulting a proposed total of 7 permanent Critical Area signs for this proposed project. See the attached Map Sheet CA1.00 for a depiction of the proposed signage and permanent fencing.

PROJECT'S IMPACT DETERMINATION RELATED TO CRITICAL AREAS

It is the professional opinion of *Wetlands & Wildlife, Inc.* that the proposed project has been specifically designed to avoid impacts to the on-site wetland and to minimize project-related impacts among the on-site protective wetland buffer in accordance with ecological industry standards and City of Marysville requirements. Based on our detailed site evaluation in conjunction with the applicant's project proposal, it is the professional opinion of *Wetlands & Wildlife, Inc.* that no permanent adverse environmental impacts will occur to the subject wetland or any associated buffer areas when completing the proposed 12-lot plat as described in this report and depicted on Map Sheet CA1.00. This determination is dependent upon all mitigation and restoration measures outlined in this report being applied.

The proposed buffer averaging plan will result in a slight increase in the permanently protected buffer compared to the existing buffer square footage (more than the required 1:1 ratio for buffer averaging). The project will also result in a net reduction of impervious surfaces within the wetland buffer due to the removal of the existing house and concrete walkway surrounding the house (1,084 square feet of existing impervious surface to be removed from the buffer and the area restored by seeding). All temporary buffer impacts will be restored by seeding with a grass / herb seed mixture such that those temporary impacts will not persist. To compensate for the proposed permanent 110 square feet of buffer impacts associated with the proposed stormwater features, the applicant is proposing to provide mitigation plantings among 600 square feet (significantly more mitigation area than the standard 1:1 ratio required for buffer impacts).

After the proposed project is approved, the on-site regulated wetland and associated buffers will be protected in perpetuity among the proposed Critical Areas Tract in accordance with City of Marysville standards and requirements.

LIMITATIONS AND USE OF THIS REPORT

This Critical Areas Report & Proposed Mitigation Plan is supplied to John Gamlam as a means of determining whether any wetlands, streams, and / or wildlife habitat conservation areas regulated by the City of Marysville Municipal Code exist on the site or within close proximity of the site which would affect the permit requirements of the proposed development on the site. This report is intended to provide information deemed relevant in the applicant'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 Puget Sound region. No other representation or warranty is made 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 arise, the information contained in this report may change based upon those conditions. Please note that *Wetlands & Wildlife, Inc.* did not provide detailed analysis 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 *Wetlands & Wildlife, Inc.* upheld professional industry standards when completing these evaluations, the information in this report does not guarantee approval by any federal, state, and / or local permitting agencies. Therefore, the work associated with this proposal shall not commence until permits have been obtained from all applicable agencies.

If any questions arise regarding our detailed evaluations, please contact me directly at (425) 337-6450.

Wetlands & Wildlife, Inc.

Scott Spooner
Owner / Principal Wetland & Wildlife Ecologist

REFERENCES AND LITERATURE REVIEWED

Anderson, Paul S., Susan Meyer, Dr. Patricia Olson, and Erik Stockdale. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. October 2016 Final Review. Washington State Department of Ecology, Shorelands & Environmental Assistance Program. Ecology Publication No. 16-06-029.

Cowardin, et al, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S.D.I. Fish and Wildlife Service. FWS/OBS-79/31. December 1979.

Forest Practices Application Mapping Tool. Maintained by the Washington State Department of Natural Resources. https://fortress.wa.gov/dnr/protectiongis/fpamt/index.html.

Hruby, T. 2014. *Washington State Wetland Rating System for Western Washington: 2014 Update*. (Publication # 04-06-029). Olympia, WA: Washington Department of Ecology.

Marysville Municipal Code. Title 22E. Environmental Standards. Ch. 22E.010 Critical Areas Management

Marysville GIS/Maps. Maps and Online Maps. https://www.marysvillewa.gov/295/GISMaps

SalmonScape. Interactive Mapping website administered by the Washington Department of Fish and Wildlife. http://wdfw.wa.gov/mapping/salmonscape/index.html.

Snohomish County PDS Map Portal. Snohomish County Planning and Development Services. http://gismaps.snoco.org/Html5Viewer/Index.html?viewer=pdsmapportal.

U.S. Army Corps of Engineers. 2010. "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)," ERDC/EL TR-10-3, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

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

U.S. Fish and Wildlife Service. National Wetlands Inventory Wetlands Mapper. http://107.20.228.18/Wetlands/WetlandsMapper.html#.

Washington State Department of Fish and Wildlife. Priority Habitats and Species map http://fortress.wa.gov/dfw/gispublic/prodphsontheweb/viewer.

Web Soil Survey. United States Department of Agriculture. Natural Resources Conservation Service. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.

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

Project/Site: 5811 87th Avenue NE (Tax Parcel #00590700001900) City/County: Incorporated City of Marysville Sampling Date: 9/22/2021

Applicant/Owner: John Gamlam (Property Owner / Applicant) State: WA Sampling Point: DP1

Investigator(s): Scott Spooner (Wetlands & Wildlife, Inc.) Section, Township, Range: S36, T30N, R05E

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

Subregion (LRR): LRR-A Lat: 48.048730° Long: -122.111922° Datum: WGS84

Soil Map Unit Name: Norma Loam NWI classification: PFO1H

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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	60	YES	FAC
2. Alnus rubra	10	NO	FAC
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 feet)			
1. Acer circinatum	40	YES	FAC
2. Rubus spectabilis	10	YES	FAC
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Athyrium cyclosorum	30	YES	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus ursinus	5	YES	FACU
2.			
	5	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (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 ≤3.0[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
0-12	10YR 3/1	90	10YR 3/2	10	C	M	SILO	Inundated during investigation

[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): 2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Ponded during investigation

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

Project/Site: 5811 87th Avenue NE (Tax Parcel #00590700001900) City/County: Incorporated City of Marysville Sampling Date: 9/22/2021

Applicant/Owner: John Gamlam (Property Owner / Applicant) State: WA Sampling Point: DP2

Investigator(s): Scott Spooner (Wetlands & Wildlife, Inc.) Section, Township, Range: S36, T30N, R05E

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

Subregion (LRR): LRR-A Lat: 48.048699° Long: -122.112035° Datum: WGS84

Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	40	YES	FAC
2. Tsuga heterophylla	30	YES	FACU
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 feet)			
1. Rubus spectabilis	20	YES	FAC
2. Acer circinatum	10	YES	FAC
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Athyrium cyclosorum	20	YES	FAC
2. Polystichum munitum	20	YES	FACU
3. Blechnum spicant	5	NO	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus ursinus	15	YES	FACU
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57 (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 ≤3.0[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)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/6	100					SALO	Slightly moist during investigation

[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: 5811 87th Avenue NE (Tax Parcel #00590700001900) City/County: Incorporated City of Marysville Sampling Date: 9/22/2021

Applicant/Owner: John Gamlam (Property Owner / Applicant) State: WA Sampling Point: DP3

Investigator(s): Scott Spooner (Wetlands & Wildlife, Inc.) Section, Township, Range: S36, T30N, R05E

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

Subregion (LRR): LRR-A Lat: 48.048983° Long: -122.113478° Datum: WGS84

Soil Map Unit Name: Tokul gravelly medial loam, 0 to 8 percent slopes NWI classification: PFO1H

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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 feet)			
1. Rubus spectabilis	10	YES	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10 feet)			
1. Athyrium cyclosorum	30	YES	FAC
2. Equisetum arvense	20	YES	FAC
3. Phalaris arundinacea	15	NO	FACW
4. Convolvulus arvensis	15	NO	NOL (UPL)
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	20	YES	FAC
2.			
	20 = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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 ≤3.0[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
0-8	10YR 3/1	95	10YR 4/4	5	C	M	SILO	Moist during investigation
8-12	10YR 3/1	95	10YR 3/4	5	C	M	SILO	Saturated during investigation

[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): 8

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: 5811 87th Avenue NE (Tax Parcel #00590700001900) City/County: Incorporated City of Marysville Sampling Date: 9/22/2021

Applicant/Owner: John Gamlam (Property Owner / Applicant) State: WA Sampling Point: DP4

Investigator(s): Scott Spooner (Wetlands & Wildlife, Inc.) Section, Township, Range: S36, T30N, R05E

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

Subregion (LRR): LRR-A Lat: 48.048912° Long: -122.113407° Datum: WGS84

Soil Map Unit Name: Tokul gravelly medial loam, 0 to 8 percent slopes NWI classification: N/A

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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	40	YES	FAC
2.			
3.			
4.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 30 feet)			
1. Rubus spectabilis	5	YES	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 10 feet)			
1. Heracleum maximum	30	YES	FAC
2. Athyrium cyclosorum	10	NO	FAC
3. Convolvulus arvensis	5	NO	NOL (UPL)
4. Polystichum munitum	5	NO	FACU
5. Blechnum spicant	5	NO	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus ursinus	25	YES	FACU
2.			
	25 = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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 ≤3.0[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
0-2	10YR 2/2	100					SALO	Slightly moist during investigation
2-12	10YR 4/4	100					SALO	Slightly moist during investigation

[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: 5811 87th Avenue NE (Tax Parcel #00590700001900) City/County: Incorporated City of Marysville Sampling Date: 4/24/2023

Applicant/Owner: John Gamlam (Property Owner / Applicant) State: WA Sampling Point: DP5

Investigator(s): Scott Spooner (Wetlands & Wildlife, Inc.) Section, Township, Range: S36, T30N, R05E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): ~5%

Subregion (LRR): LRR-A Lat: 48.04874° N Long: 122.11274° W Datum: WGS84

Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	35	YES	FAC
2. Tsuga heterophylla	15	YES	FACU
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 feet)			
1. Sambucus racemosa	5	YES	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Phalaris arundinacea	20	YES	FACW
2. Ranunculus repens	20	YES	FAC
3. Taraxacum officinale	15	YES	FACU
4. Plantago lanceolata	15	YES	FACU
5. Rumex crispus	5	NO	FAC
6. Trifolium pratense	5	NO	FACU
7. Jacobaea vulgaris	5	NO	FACU
8. Plantago major	5	NO	FAC
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus ursinus	15	YES	FACU
2. Rubus armeniacus	10	YES	FAC
	25	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44 (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 ≤3.0[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
0-3	10YR 3/4	100					SALO	Slightly moist during investigation
3-12	10 YR 3/6	100					GRSALO	Slightly moist during investigation

[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: 5811 87th Avenue NE (Tax Parcel #00590700001900) City/County: Incorporated City of Marysville Sampling Date: 4/24/2023

Applicant/Owner: John Gamlam (Property Owner / Applicant) State: WA Sampling Point: DP6

Investigator(s): Scott Spooner (Wetlands & Wildlife, Inc.) Section, Township, Range: S36, T30N, R05E

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None Slope (%): ~17%

Subregion (LRR): LRR-A Lat: 48.04878° N Long: 122.11301° W Datum: WGS84

Soil Map Unit Name: Tokul gravelly medial loam, 8 to 15 percent slopes NWI classification: N/A

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:

Surface hydrology nearby due to stormwater runoff from adjacent imperv. surfaces & compaction; artificial /not regulated

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus contorta	30	YES	FAC
2. Thuja plicata	10	YES	FAC
3. Tsuga heterophylla	10	YES	FACU
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 feet)			
1. Rubus spectabilis	15	YES	FAC
2. Oemleria cerasiformis	15	YES	FACU
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 10 feet)			
1. Ranunculus repens	15	YES	FAC
2. Plantago lanceolata	15	YES	FACU
3. Plantago major	10	YES	FAC
4. Taraxacum officinale	10	YES	FACU
5. Agrostis capillaris	10	YES	FAC
6. Trifolium pratense	10	YES	FACU
7. Galium aparine	5	NO	FACU
8. Cirsium vulgare	5	NO	FACU
9. Lapsana communis	5	NO	FACU
10. Jacobaea vulgaris	5	NO	FACU
11. Dactylis glomerata	3		FACU
	93	= Total Cover	
Woody Vine Stratum (Plot size: 10 feet)			
1. Rubus armeniacus	20	YES	FAC
2. Hedera helix	15	YES	FACU
	35	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 13 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 46 (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 ≤3.0[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: DP6

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
0-6	10YR 4/6	100					SALO	Slightly moist during investigation
6-12	10 YR 3/4	100					SALO	Slightly moist during investigation

[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 name or number Wetland A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A (Gamlam Property) Date of site visit: 9/22/2021

Rated by Scott Spooner (Wetlands & Wildlife, Inc.) Trained by Ecology? ✓ Yes ___No Date of training 10/05 & 4/15

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✓ N

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

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics___)

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H M (L)	H (M) L	H (M) L	
Landscape Potential	(H) M L	(H) M L	H (M) L	
Value	(H) M L	(H) M L	H (M) L	**TOTAL**
Score Based on Ratings	7	8	6	21

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number Wetland A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

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

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number Wetland A

DEPRESSIONAL AND FLATS WETLANDS

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

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

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	3

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

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	2
Total for D 3 Add the points in the boxes above	3

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

Wetland name or number Wetland A

DEPRESSIONAL AND FLATS WETLANDS

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

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

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

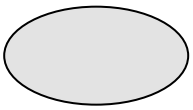
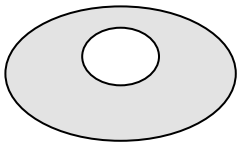
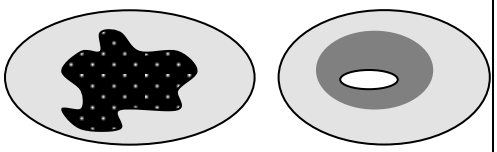
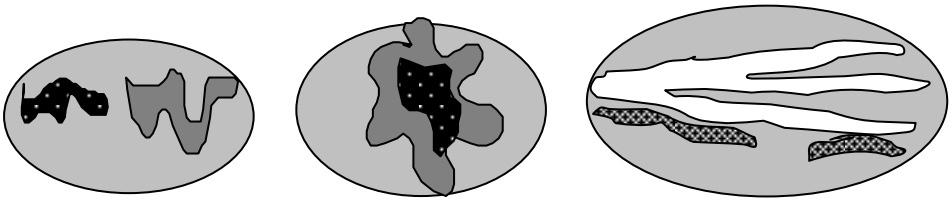
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	3

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	2

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

Wetland name or number Wetland A

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

Wetland name or number Wetland A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* ✓ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). ✓ Standing snags (dbh > 4 in) within the wetland ✓ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* ✓ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ___ Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	4
Total for H 1 Add the points in the boxes above	14

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 0 **+** [(% moderate and low intensity land uses)/2] 0.5 **=** 0.5 % If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 5 **+** [(% moderate and low intensity land uses)/2] 31.5 **=** 36.5 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	1

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

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan ✓ Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	1

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

Wetland name or number Wetland A

WDFW Priority Habitats

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

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

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

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

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

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

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

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

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

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

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

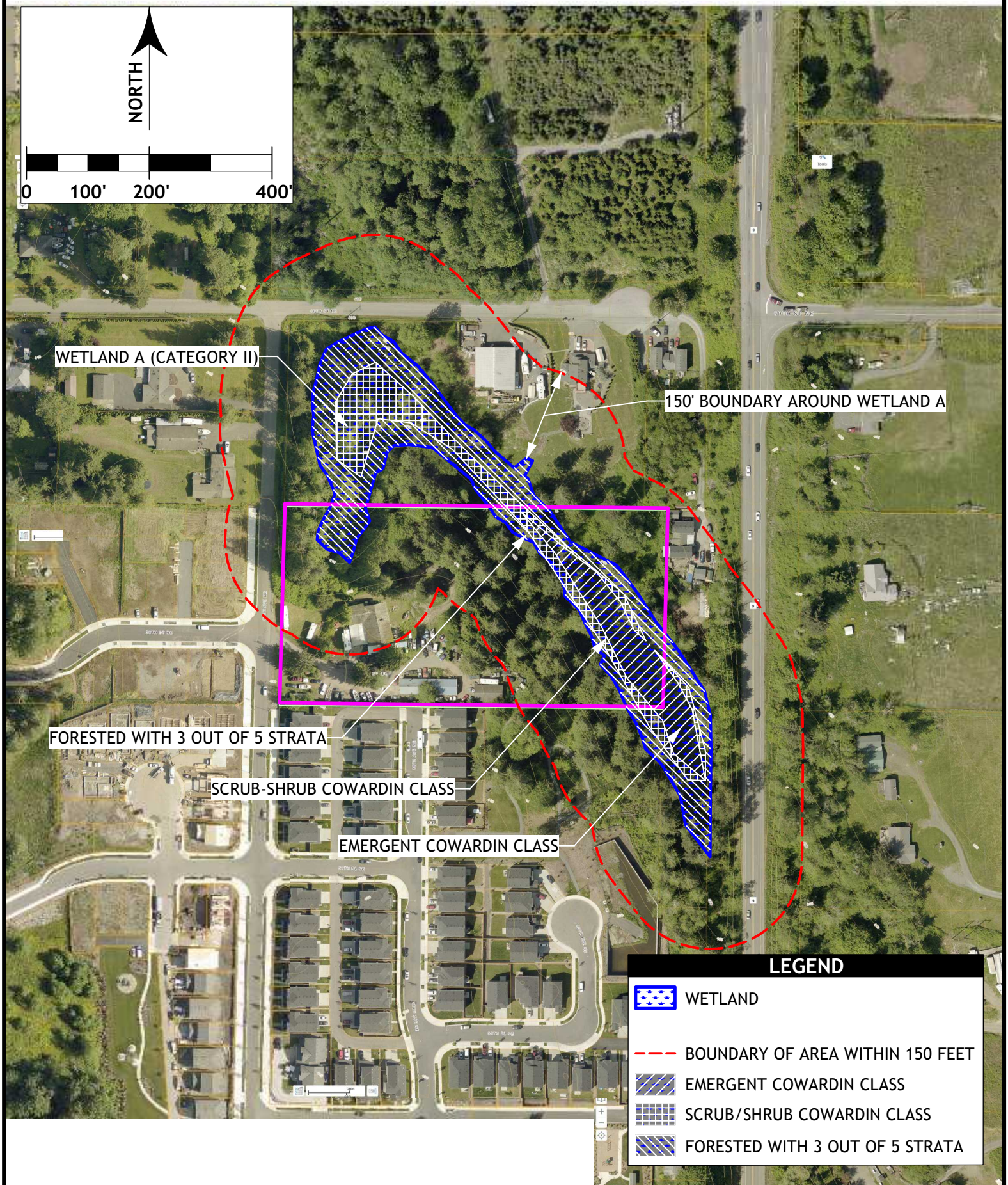
— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

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

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

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

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



WETLANDS & WILDLIFE
Environmental Consulting

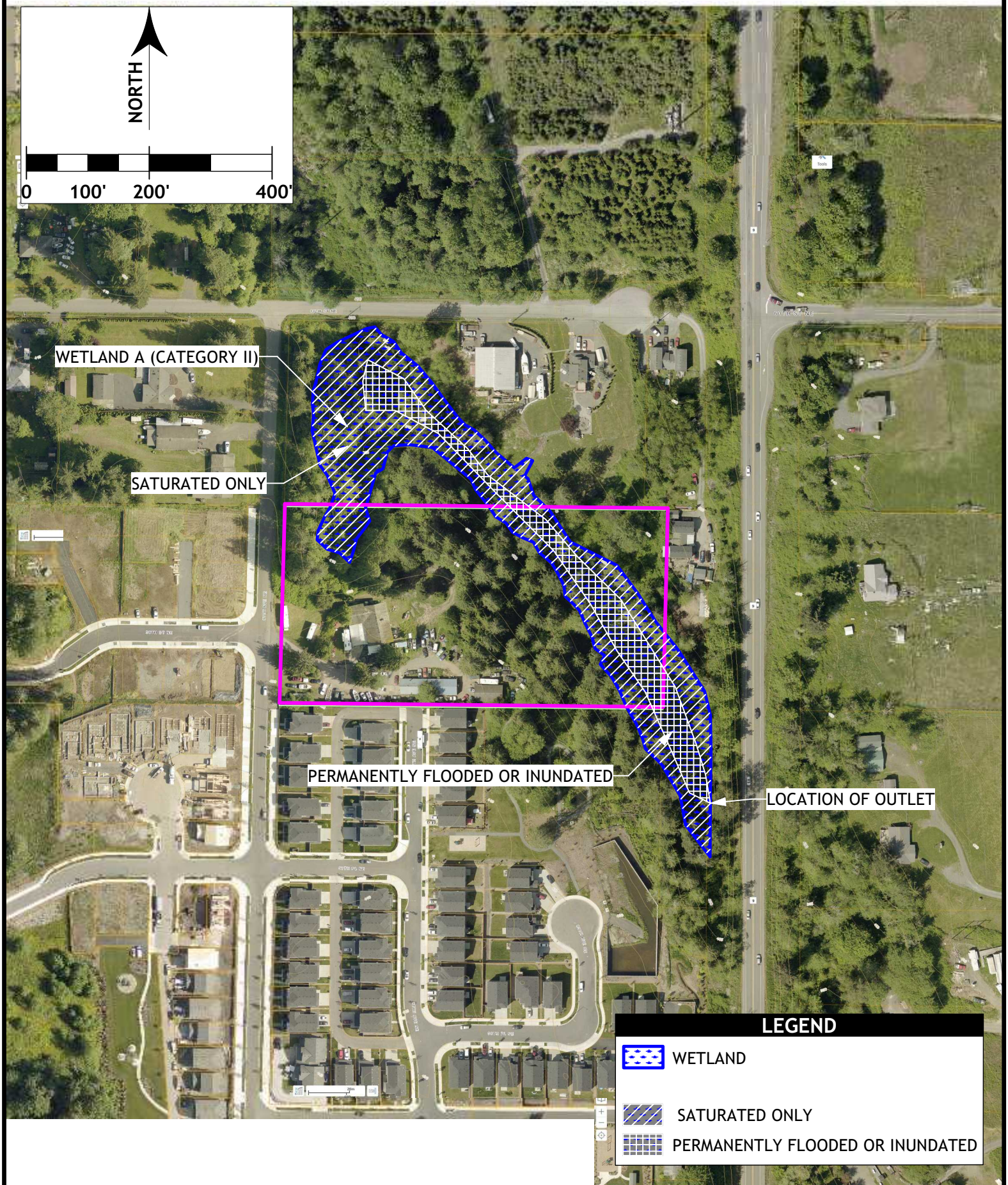
PREPARED FOR:
Mr. John Gamlam
(Property Owner)
127 Skyline Drive
Edmonds, WA 98020

WETLAND RATING FORM--FIGURE 1

COWARDIN PLANT CLASSES AMONG WETLAND A
INCORPORATED CITY OF MARYSVILLE
TAX PARCEL #00590700001900

W&W Job: N21100
Drawn By: Teddi McFall
Date: 4/27/2023
Revision #: 1

MAP SHEET: WR1.00



WETLANDS & WILDLIFE
Environmental Consulting

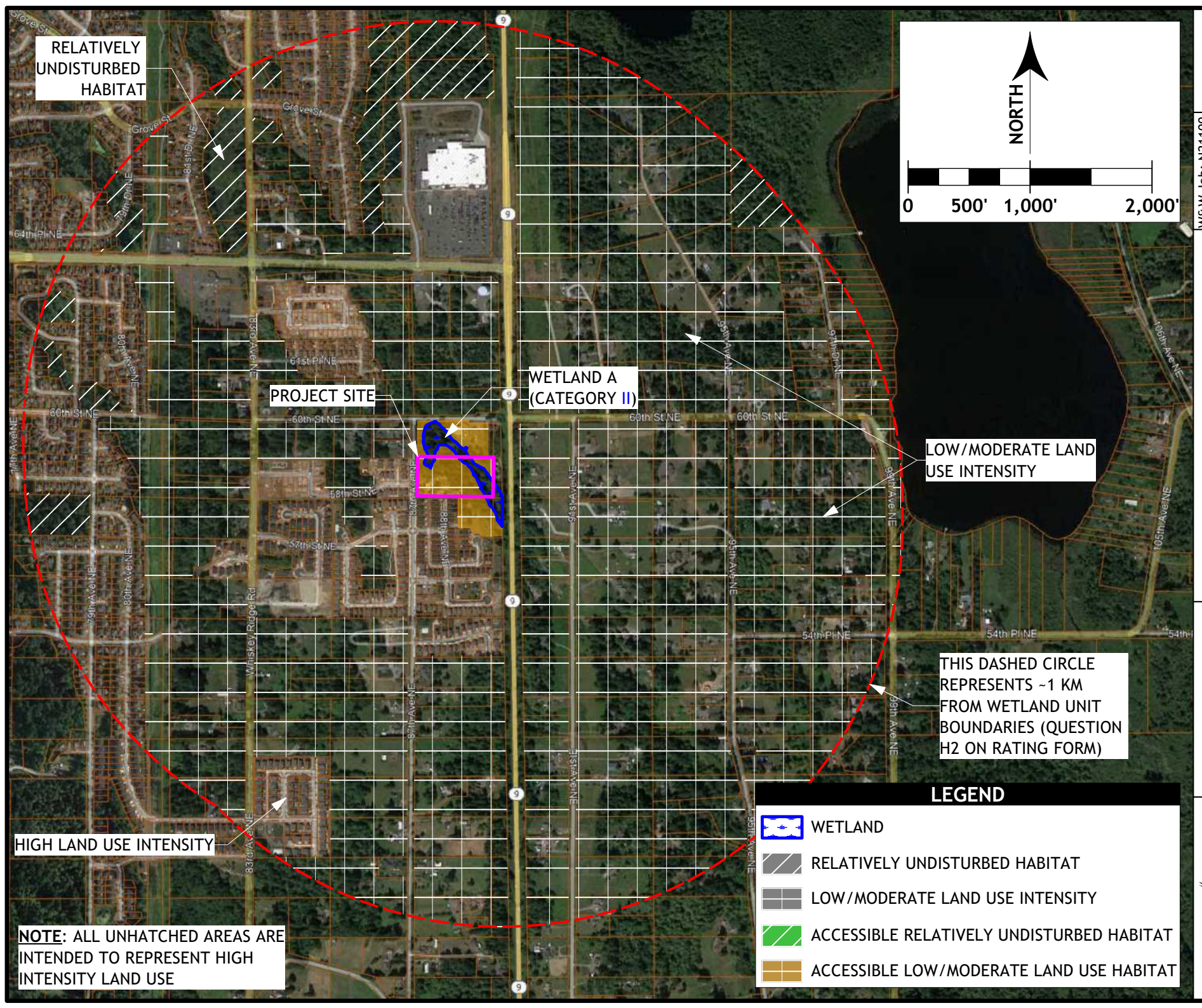
PREPARED FOR:
Mr. John Gamlam
(Property Owner)
127 Skyline Drive
Edmonds, WA 98020

WETLAND RATING FORM--FIGURE 2

HYDROPERIODS AMONG WETLAND A
INCORPORATED CITY OF MARYSVILLE
TAX PARCEL #00590700001900

W&W Job: N21100
Drawn By: Teddi McFall
Date: 4/27/2023
Revision #: 1

MAP SHEET: WR2.00



NOTE: ALL UNHATCHED AREAS ARE INTENDED TO REPRESENT HIGH INTENSITY LAND USE

LEGEND

- WETLAND
- RELATIVELY UNDISTURBED HABITAT
- LOW/MODERATE LAND USE INTENSITY
- ACCESSIBLE RELATIVELY UNDISTURBED HABITAT
- ACCESSIBLE LOW/MODERATE LAND USE HABITAT

MAP SHEET: WR3.00

W&W Job: N21100
Drawn By: Teddi McFall
Date: 4/27/2023
Revision #: 1

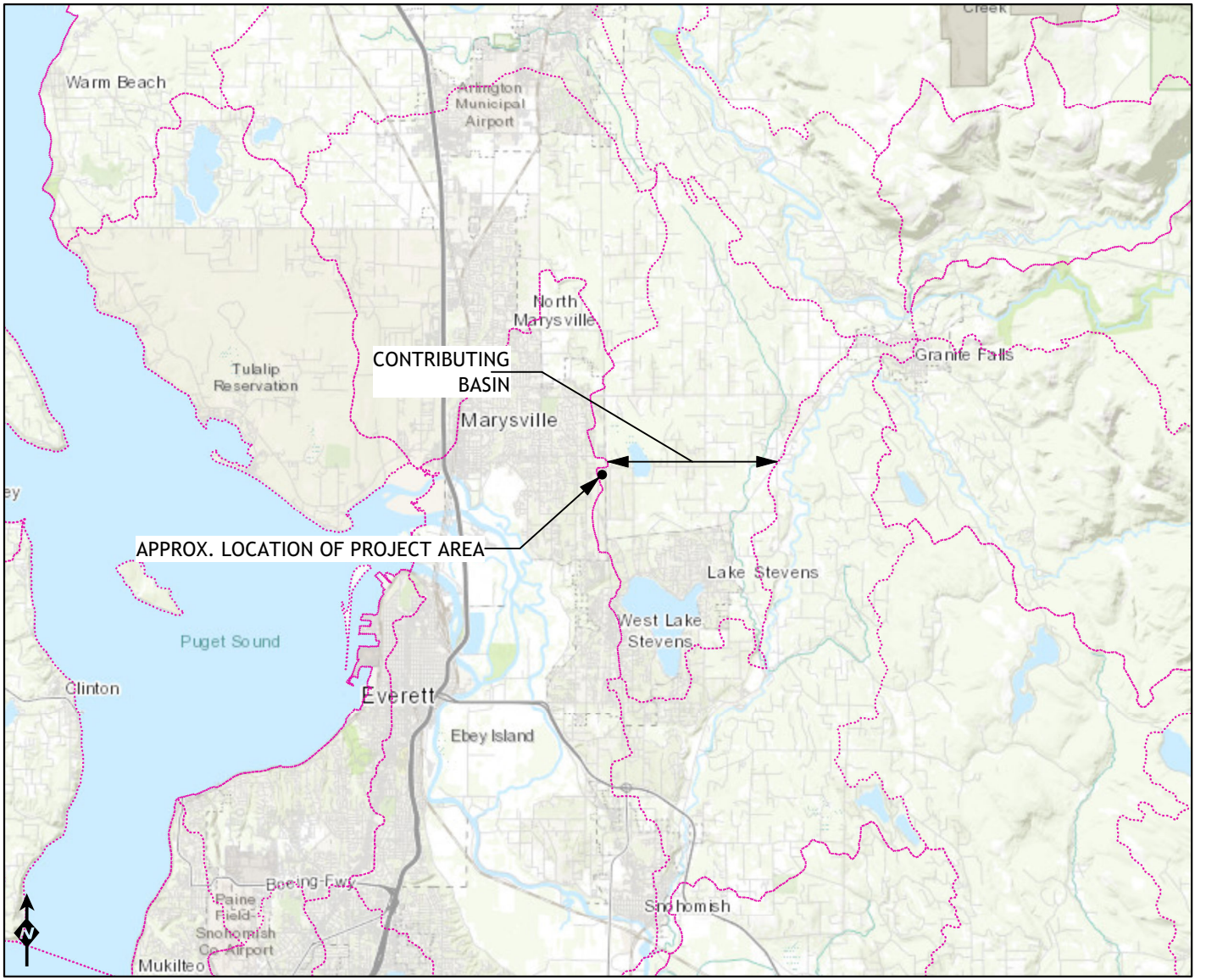
WETLAND RATING FORM--FIGURE 3

HABITAT QUALITY WITHIN 1KM OF WETLAND A
INCORPORATED CITY OF MARYSVILLE, WA
TAX PARCEL #00590700001900

PREPARED FOR:
Mr. John Gamlam
(Property Owner)
127 Skyline Drive
Edmonds, WA 98020

WETLANDS & WILDLIFE
Environmental Consulting

Water Quality Atlas



Subbasins (12 digit HUCs)

HUC boundary

Miles

0 2 4 8

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

DEPARTMENT OF ECOLOGY State of Washington

MAP SHEET: WR4.00

W&W Job: N21100 | Drawn By: Teddi McFall | Date: 4/27/2023 | Revision #: 1

WETLAND RATING FORM--FIGURE 4

MAP OF THE CONTRIBUTING BASIN
INCORPORATED CITY OF MARYSVILLE, WA
PARCEL #00590700001900

PREPARED FOR:

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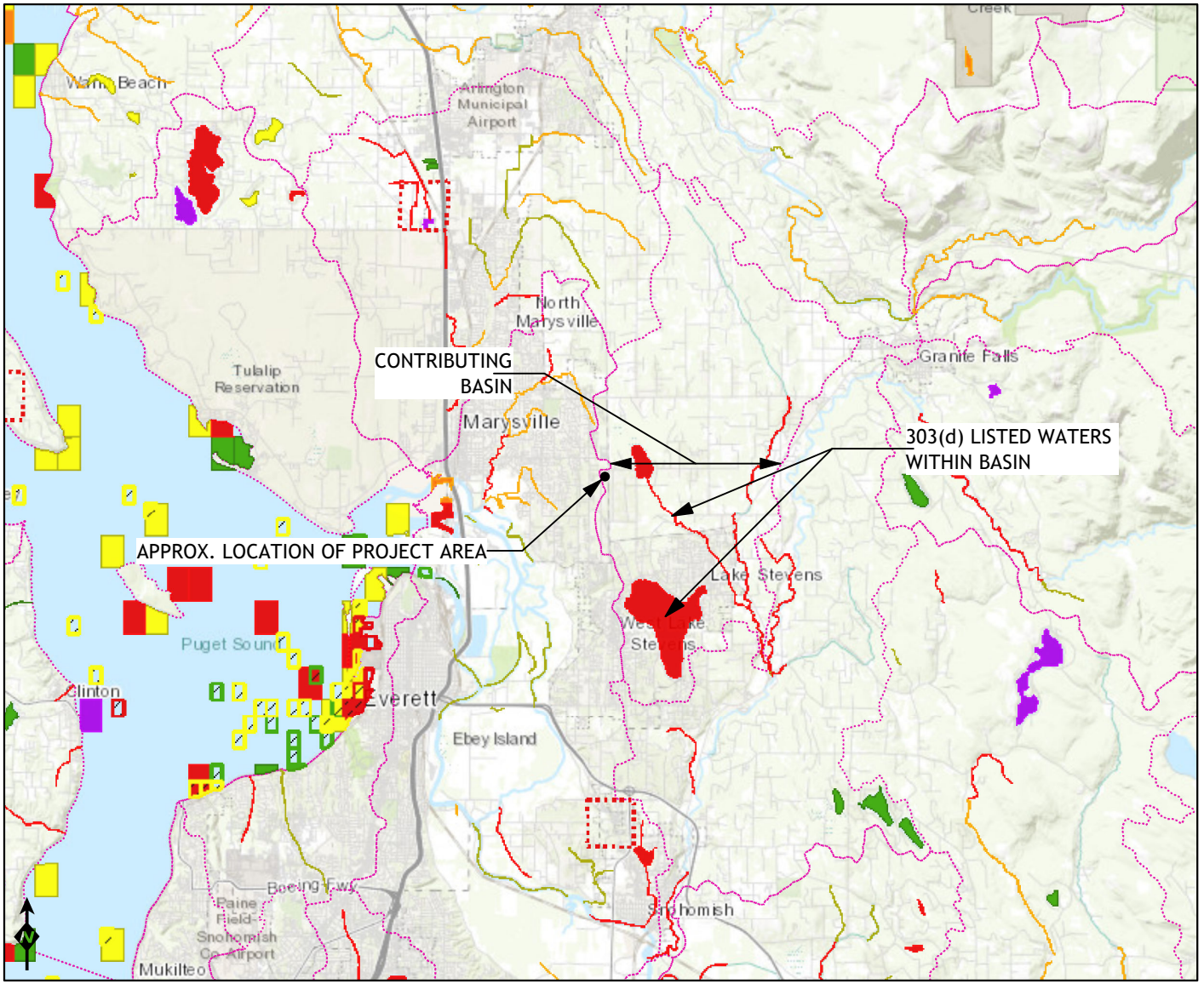
(Property Owner)
127 Skyline Drive
Edmonds, WA 98020

WETLANDS & WILDLIFE Environmental Consulting

Water Quality Atlas



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Subbasins (12 digit HUCs)
- HUC boundary

DEPARTMENT OF ECOLOGY State of Washington

MAP SHEET: WR5.00

W&W Job: N21100 | Drawn By: Teddi McFall | Date: 4/27/2023 | Revision #: 1

WETLAND RATING FORM--FIGURE 5

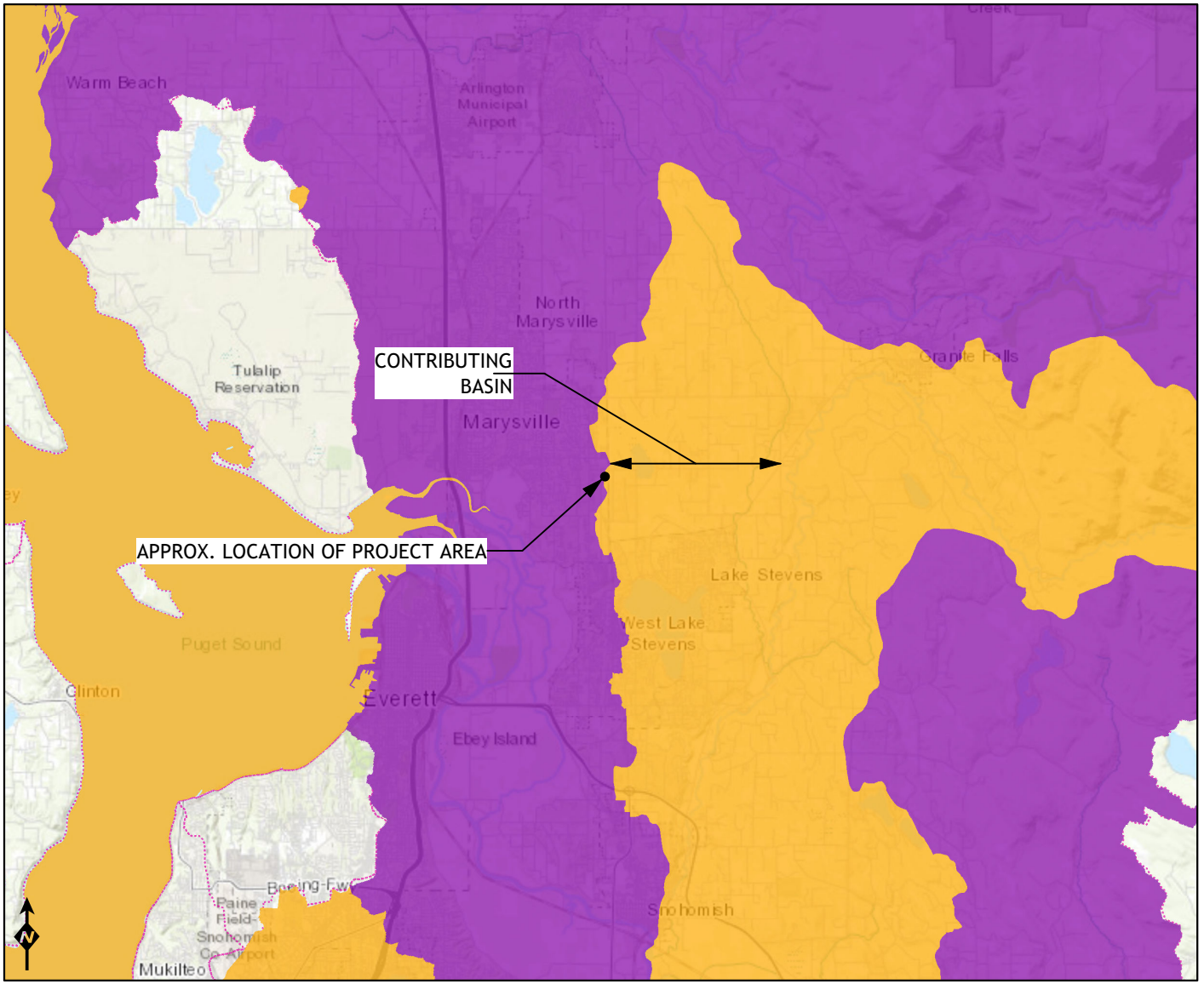
SCREEN SHOT OF 303(d) LISTED WATERS
INCORPORATED CITY OF MARYSVILLE, WA
PARCEL #00590700001900

PREPARED FOR:

Mr. John Gamlam
(Property Owner)
127 Skyline Drive
Edmonds, WA 98020

WETLANDS & WILDLIFE Environmental Consulting

Water Quality Atlas



WQ Improvement Projects
- Approved
- In Development

Subbasins (12 digit HUCs)
- HUC boundary

Miles
0 2 4 8

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and

DEPARTMENT OF ECOLOGY
State of Washington

MAP SHEET: WR6.00

W&W Job: N21100
Drawn By: Teddi McFall
Date: 4/27/2023
Revision #: 1

WETLAND RATING FORM--FIGURE 6
SCREEN SHOT OF LISTED TMDL's
INCORPORATED CITY OF MARYSVILLE, WA
PARCEL #00590700001900

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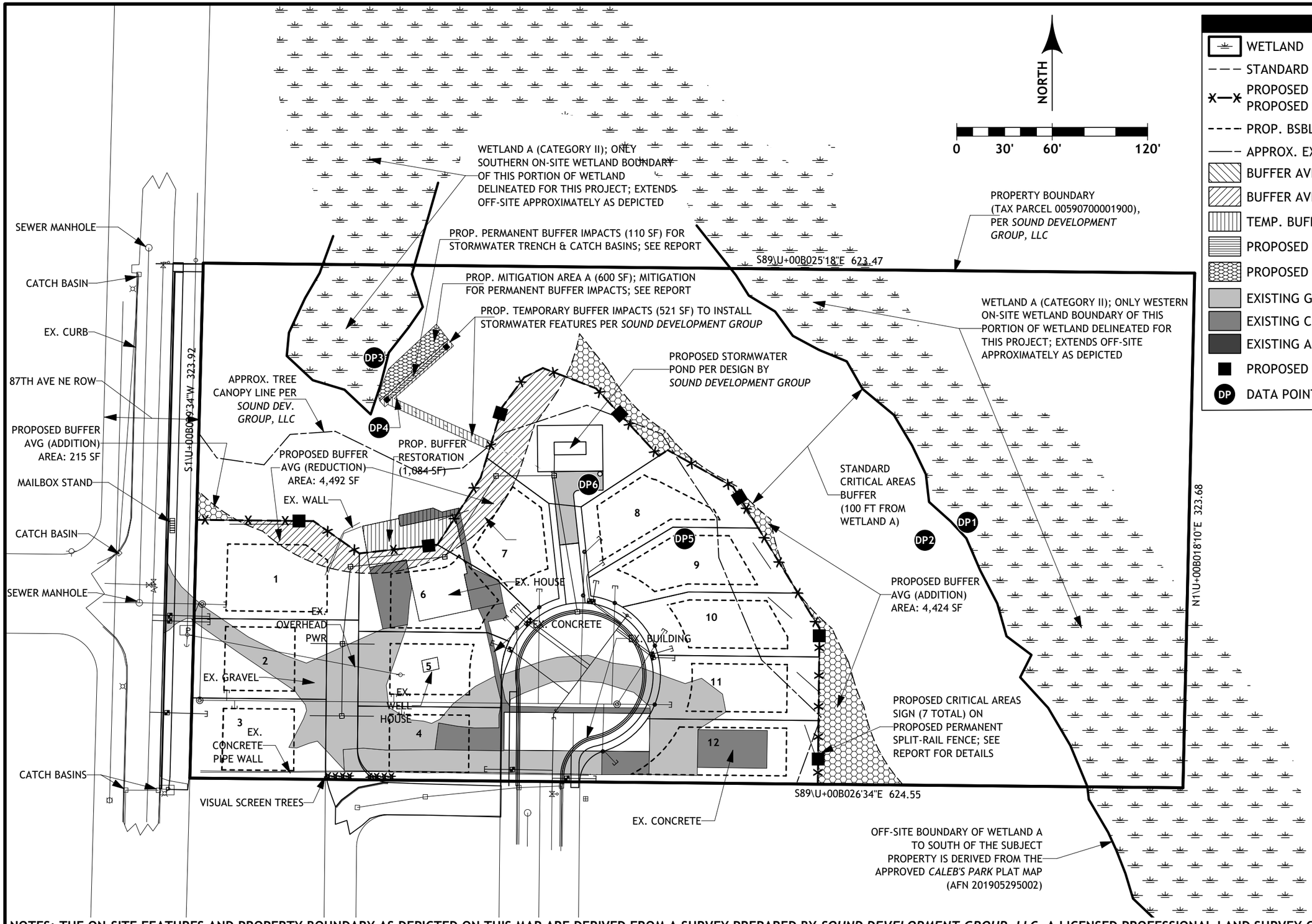
WETLANDS & WILDLIFE
Environmental Consulting



LEGEND

- WETLAND
- STANDARD CRITICAL AREAS BUFFER
- PROPOSED SPILT-RAIL FENCE ALONG PROPOSED BUFFER
- PROP. BSBL AMONG PROP. LOTS
- APPROX. EX. TREE CANOPY LINE
- BUFFER AVERAGING (ADDITION)
- BUFFER AVERAGING (REDUCTION)
- TEMP. BUFFER IMPACTS (RESTORE)
- PROPOSED PERM. BUFFER IMPACTS
- PROPOSED BUFFER MITIGATION AREA
- EXISTING GRAVEL
- EXISTING CONCRETE
- EXISTING ASPHALT
- PROPOSED PERMANENT CAPA SIGNS (7)
- DP DATA POINT LOCATIONS (6 TOTAL)

NOTES: THE ON-SITE FEATURES AND PROPERTY BOUNDARY AS DEPICTED ON THIS MAP ARE DERIVED FROM A SURVEY PREPARED BY *SOUND DEVELOPMENT GROUP, LLC*, A LICENSED PROFESSIONAL LAND SURVEY COMPANY. THE ON-SITE WETLAND BOUNDARY DEPICTED WAS DELINEATED BY *WETLANDS & WILDLIFE, INC.* USING BRIGHT PINK FLAGS AND THEN LOCATED BY *SOUND DEVELOPMENT GROUP, LLC*. FOR PLACEMENT ON THIS MAP. PLEASE VIEW THE ASSOCIATED CRITICAL AREAS STUDY & PROPOSED MITIGATION PLAN FOR FURTHER DISCUSSION REGARDING THIS CRITICAL AREAS EVALUATION. OFF-SITE CRITICAL AREAS SHOWN ARE APPROXIMATE, BASED ON VISUAL OBSERVATION ONLY, AND HAVE NOT BEEN ACCURATELY DELINEATED OR LOCATED DUE TO A LACK OF LEGAL ACCESS TO OFF-SITE PRIVATE PROPERTIES. THIS MAP IS INTENDED FOR SUBMITTAL TO THE CITY OF MARYSVILLE COMMUNITY DEVELOPMENT DEPARTMENT FOR REVIEW OF THE ASSOCIATED CRITICAL AREAS STUDY & PROPOSED MITIGATION PLAN. NO OTHER USE IS INTENDED AT THIS TIME. IF ANY QUESTIONS ARISE REGARDING THIS MAP, PLEASE CONTACT *WETLANDS & WILDLIFE, INC.* DIRECTLY.

MAP SHEET: CA1.00

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CRITICAL AREAS OVERVIEW MAP

PROPOSED 12-LOT PLAT
INCORPORATED CITY OF MARYSVILLE
PARCEL NUMBER 00590700001900

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