



EXHIBIT "9"

*Original Critical
Areas Report*

**CRITICAL AREAS REPORT
AND
BUFFER MITIGATION PLAN**

FOR

**MARKWOOD EAST PHASE II
BURLINGTON, WA**

Wetland Resources, Inc. Project #22292

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December 15, 2022

TABLE OF CONTENTS

1.0 INTRODUCTION	3
1.1 SITE DESCRIPTION	3
1.2 PROJECT DESCRIPTION.....	4
2.0 CRITICAL AREAS DELINEATION METHODOLOGY	4
2.1 LIMIT OF STUDY	4
2.2 WETLAND DETERMINATION AND DELINEATION	4
2.3 STREAM BOUNDARY DETERMINATION METHODOLOGY.....	5
3.0 CRITICAL AREAS DELINEATION REPORT.....	5
3.1 REVIEW OF EXISTING INFORMATION	5
3.2 FINDINGS.....	6
4.0 BUFFER IMPACTS AND MITIGATION	6
4.1 MITIGATION SEQUENCING	6
4.2 BUFFER AND WETLAND ENHANCEMENT PLAN.....	7
4.3 PROJECT NOTES	8
4.4 PLANTING NOTES.....	8
4.5 MAINTENANCE	11
5.0 CONTINGENCY	12
6.0 PROJECT MONITORING	12
6.1 PROJECT GOALS AND OBJECTIVES.....	12
6.2 MONITORING REQUIREMENT	13
6.3 MONITORING REPORT CONTENTS.....	13
6.4 PURPOSE FOR MONITORING	13
6.5 MONITORING METHODOLOGY	14
6.6 PHOTO POINTS	14
6.7 MONITORING PROGRAM.....	14
7.0 FUNCTIONS AND VALUES ASSESSMENT.....	14
7.1 EXISTING WETLAND AND BUFFER CONDITIONS	14
7.2 POST MITIGATION FUNCTIONS AND VALUES	15
8.0 PROJECT COST ESTIMATE	15
9.0 FLOODPLAIN HABITAT ASSESSMENT	15
9.1 OVERVIEW	15
9.2 EFFECTS DETERMINATION	16
10.0 USE OF THIS REPORT	17

LIST OF FIGURES

FIGURE 1 – AERIAL VIEW OF THE SUBJECT PROPERTY.	3
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APPENDICES

APPENDIX A: USACE WETLAND DETERMINATION DATA FORMS	
APPENDIX B: DOE WETLAND RATING FORMS	

APPENDIX C: CRITICAL AREAS AND BUFFER MITIGATION PLAN MAP

1.0 INTRODUCTION

The subject property is 1.74-acres in size, located northwest of the intersection of Goldenrod Road and West Stevens Road, in the city of Burlington, WA. *Wetland Resources, Inc.* conducted a site investigation on December 5, 2022, to verify conditions and identify and evaluate wetlands and streams on and near the subject property for on site features and off-site mitigation potential. The site is comprised of two Skagit County tax parcel (Tax ID#: 34040640060402 and 34040640060501) and is located by the Public Land Survey System (PLSS) as a portion of Section 6, Township 34N, Range 4E, W.M. It is located within the Lower Skagit - Samish watershed (WRIA 3).



Figure 1 – Aerial view of the subject property.

1.1 SITE DESCRIPTION

The site condition is currently undeveloped with minimal vegetation consisting of grasses and invasive species. Dominant on-site vegetation consists of perennial ryegrass (*Lolium perenne*, FAC), field horsetail (*Equisetum arvense*, FAC), plantain (*Plantago lanceolata*, FACU), red clover (*Trifolium*

pratense, FACU), and Himalayan blackberry (*Rubus armeniacus*, FAC). The existing topography is relatively level, with an approximate 3-foot elevation change across the property.

No critical areas were identified on site. Gages Slough is located approximately 150 feet south of the site and across Stevens Road.

Surrounding land use consists of high intensity commercial developments, high traffic adjacent public roads, and open space along Gages Slough.

1.2 PROJECT DESCRIPTION

The applicant is proposing to develop a 58-unit residential complex, with parking and associated infrastructure. A large portion of the site is positioned within the buffer associated with Gages Slough. This buffer is bisected by Stevens Road, which significantly limits its ability to function. Offsite mitigation along Gages Slough is proposed to compensate for buffer impacts as a result of the project.

2.0 CRITICAL AREAS DELINEATION METHODOLOGY

2.1 LIMIT OF STUDY

The proposed project occurs within two Skagit County tax parcels (Tax ID#: 34040640060402 and 34040640060501). Offsite mitigation is proposed to compensate for buffer impacts from the development on the two parcels as there is no feasible area for mitigation onsite. The city has granted access to the parcels to the south consisting of Gages Slough to address mitigation site potential. Lack of legal access prevents WRI staff from performing routine wetland and stream determinations on adjacent parcels to the subject site. Site access on adjacent parcels was not permitted. Wetland and stream boundaries depicted outside of the subject parcels are based on visual observation from the edge of legal access, publicly available resources, fine-scale elevation contours, and best professional judgment.

2.2 WETLAND DETERMINATION AND DELINEATION

Wetland conditions were evaluated and delineated using routine methodology described in the *Corps of Engineers Wetlands Delineation Manual (Final Report, January 1987)*, except where superseded by the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0, referred to as 2010 Regional Supplement)*. Our findings are consistent with these manuals. The following criteria descriptions were used in the boundary determination:

- 1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
- 2.) Examination of the site for hydric soils;
- 3.) Determining the presence of wetland hydrology

2.2.1 Hydrophytic Vegetation Criteria

The manuals define hydrophytic vegetation as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant

species present. One of the most common indicators for hydrophytic vegetation is when more than 50 percent of a plant community consists of species rated “Facultative” and wetter on lists of plant species that occur in wetlands.

2.2.2 Soils Criteria and Mapped Description

The manuals define hydric soils as those that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Field indicators are used for determining whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic depressions.

2.2.3 Hydrology Criteria

The 2010 Regional Supplement defines wetland hydrology as “areas that are inundated (flooded or ponded) or the water table is less than or equal to 12 inches below the soil surface for 14 or more consecutive days during the growing season at a minimum frequency of 5 years in 10.” During the early growing season, wetland hydrology determinations are made based on physical observation of surface water, a high-water table, or saturation in the upper 12 inches. Outside of the early growing season, wetland hydrology determinations are made based on physical evidence of recent inundation or saturation (i.e., water marks, surface soil cracks, water-stained leaves).

2.3 STREAM BOUNDARY DETERMINATION METHODOLOGY

The OHWM was delineated/estimated based on the methodology described in the Washington State Department of Ecology document Determining the Ordinary High-Water Mark for Shoreline Management Act Compliance in Washington State (Anderson et al. 2016). Streams were typed according to the water typing system rules set forth in KCC 21A.24.355.

3.0 CRITICAL AREAS DELINEATION REPORT

3.1 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resource information was reviewed to gather background information on the subject site and the surrounding area in regards to wetlands, streams, and other critical areas. These sources included the USFWS National Wetlands Inventory (NWI), USDA/NRCS Web Soil Survey, WDFW Priority Habitat and Species (PHS) Interactive Map, WDFW SalmonScape mapping tool and DNR Forest Practices Application Mapping Tool (FPAMT).

- USFWS National Wetlands Inventory (NWI): This resource does not depict wetlands or streams on the subject site. The nearest depicted wetland is approximately 150 feet to the south of the subject site.
- USDA/NRCS Web Soil Survey: This resource depicts the underlying soils as Field silt loam, protected and Suman silt loam.

- WDFW Priority Habitat and Species (PHS) Interactive Map: This resource does not depict wetlands or streams on the subject site. The nearest depicted feature is a wetland approximately 150 feet to the south of the subject site.
- WDFW SalmonScape: This resource depicts no streams on the subject site. Gages Slough is depicted approximately 150 feet to the south is identified as gradient accessible for Pink, Coho, Steelhead, Chum and Chinook.
- DNR FPAMT: This resource does not depict wetlands or streams on the subject site. The nearest depicted feature is a wetland, Gages Slough, approximately 150 feet to the south of the subject site.

3.2 FINDINGS

Gages Slough Wetland (off-site)

The off-site wetland is known as Gages Slough. It is located approximately 150 feet to the south of the subject property. It is a depressional wetland dominated by red alder (*Alnus rubra*; FAC), salmonberry (*Rubus spectabilis*; FAC), red osier dogwood (*Cornus sericea*; FACW), cattails (*Typha latifolia*, OBL), reed canary grass (*Phalaris arundinacea*, FACW), and pacific willow (*Salix lucida*, FACW).

Soils within the wetland from 0 to 13 inches were generally (10YR 3/2) with 9 percent (10YR 3/4) redoximorphic features. From 13 to 17 inches solid were generally (10YR 4/1) with 15 percent (10YR 3/4) redoximorphic features. Soils were not saturated at the time of the December 2022 visit; however hydrology of the site was analyzed using best professional opinion based on topography.

The wetland receives a total score of 20 points for functions on the 2014 Wetland Rating Form. The score of 20 points equates to a Category II classification. According to BMC15.15.205, Category II wetlands on lands with high-intensity use are dedicated 300-foot protective buffers. The Cowardin classification system classifies the wetland as a palustrine, scrub-shrub, seasonally flooded (PSSC) wetland.

4.0 BUFFER IMPACTS AND MITIGATION

4.1 MITIGATION SEQUENCING

Per BMC14.15.220, the applicant is required to demonstrate the preferred sequence for mitigation as follows:

1. Avoid the impact altogether by not taking a certain action or parts of an action.
2. Minimize impacts by limiting the degree or magnitude of the action and its implementation,
by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.
3. Rectify the impact by repairing, rehabilitating, or restoring the affected environment.
4. Reduce or eliminate the impact over time by preservation and maintenance operations.
5. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments.

6. Monitor the required compensation and take remedial or corrective measures when necessary.

This project avoids direct wetland impacts but cannot avoid buffer impacts. The 300-foot wetland buffer associated with Gages Slough crosses West Stevens Road and encumbers nearly half of the subject development site. Completely avoiding the buffers, either by leaving the buffers as they are or averaging the buffer width, renders this infeasible. The project simply could not be achieved while maintain the standard 300-foot buffer. Moreover, the wetland buffer is already interrupted by West Stevens Road, which significantly limits its ability to provide valuable functions to the wetland.

Given the significant constraints on the site, the applicant plans to eliminate 62,062 square feet of buffer. As mitigation for this impact the applicant will enhance the buffer and degraded wetland areas connected to the Gages Slough. Enhancing the buffer and wetland involves removing and controlling invasive/non-native plants and planting diverse native plant species. Buffer and wetland enhancement measures are proposed at a 1:1 (combined buffer and wetland enhancement to reduction) ratio. Vegetation enhancement is expected to improve habitat functions within the connecting upland areas and wetland.

The project will be monitored and maintained for five years to ensure long-term success. The above discussion demonstrates that the applicant cannot achieve a viable project without eliminating the buffer. Efforts to enhance the off-site buffer and wetland areas with native vegetation will fully mitigate the impact. The conclusions of this analysis are consistent with the requirements for mitigation sequencing under BMC14.15.220.

4.2 BUFFER AND WETLAND ENHANCEMENT PLAN

The proposed project will impact 62,062 square feet of onsite buffer projecting from wetland associated with Gages Slough. As compensatory mitigation for buffer impacts the applicant is proposing wetland and buffer enhancement planting off-site on a city owned parcel immediately south of the subject site. Combination of buffer and wetland enhancement will be at a 1:1 ratio per BMC 14.15.210.J. Buffer enhancement will be 27,623 square feet and wetland enhancement will be a total 34,439 square feet for a total of 62,062 square feet.

Wetland Enhancement Area (34,439 SF)

Common Name	Latin Name	Size	Spacing	Quantity
Western red cedar	<i>Thuja plicata</i>	1 gallon	10'	200
Sitka spruce	<i>Picea sitchensis</i>	1 gallon	10'	200
Pacific willow	<i>Salix lucida</i>	Stake	3'	1276
Sitka willow	<i>Salix sitchensis</i>	Stake	3'	1275
Red-osier dogwood	<i>Cornus sericea</i>	Stake	3'	1275

Buffer Enhancement Area (27,623 SF)

Common Name	Latin Name	Size	Spacing	Quantity
Western red cedar	<i>Thuja plicata</i>	1 gallon	10'	160
Douglas fir	<i>Pseudotsuga menziesii</i>	1 gallon	10'	160
Vine maple	<i>Acer circinatum</i>	1 gallon	6'	150
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	6'	150
Beaked hazelnut	<i>Corylus comuta</i>	1 gallon	6'	150
Serviceberry	<i>Amelanchier arborea</i>	1 gallon	6'	150
Butter Cherry	<i>Prunus emarginata</i>	1 gallon	6'	150
Oceanspray	<i>Holodiscus discolor</i>	1 gallon	6'	150

4.3 PROJECT NOTES

Pre-construction

The edge of the work area will be marked with appropriate construction fencing before the work begins. This may require the wetland edge to be marked out first. The temporary fencing will be maintained while the mitigation project is being installed. The fencing will not be removed until directed by a city representative until permanent signs are in place.

Inspections

A wetland biologist shall be contracted to oversee the mitigation installation described in this plan. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or hidden site conditions. A city of Burlington representative and/or the consulting biologist will make these decisions during construction.

4.4 PLANTING NOTES

Pre-Planting Meeting

Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the consulting wetland professional shall occur to resolve any questions that may arise. During this meeting a discussion regarding plant spacing and locations of plant species including wetland verses buffer species shall occur between the landscape contractor and the consulting wetland professional.

Timing of Planting

Unless otherwise approved by City staff, all planting shall occur between November 1 and March 1. Overall, the earlier plants go into the ground during the dormant period, the more time they have to adapt to the site and extend their root systems before the water demands of spring and summer.

Handling

Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements, and shall not be used unless planted between November 1 and March 1, and only with the permission of the landscape designer, wetland biologist, and City staff. Bare root plants must have enough fibrous root to ensure plant survival. Roots must be covered at all times with mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Storage

Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows, and treated in a manner suitable to that species' horticultural requirements. Plants must be re-inspected by the wetland biologist and/or landscape designer prior to installation.

Damaged plants

Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names

Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the landscape designer, wetland biologist, or city staff. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition

Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1" in diameter will be rejected.

Roots

All plants shall be balled and burlapped or containerized, unless explicitly authorized by the landscape designer and/or wetland biologist. Rootbound plants or B&B plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and / or twisted roots) must be root-pruned. Matted or

circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places. Bare root plantings of woody material are allowed only with permission from the landscape designer, wetland biologist and/or city staff.

Sizes

Plant sizes shall be the size indicated in the plant schedule in approved plans. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Measurements, caliper, branching, and balling and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form

Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Weeding

Existing and exotic vegetation in the mitigation areas will be hand weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is allowed without the written permission of city staff.

Site conditions

The contractor shall immediately notify the landscape designer and/or wetland biologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits

Planting pits shall be circular or square with vertical sides, and shall be 6" deeper and 12" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting down soils.

Fertilizer

Slow release fertilizer may be used if pre-approved by the city. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No soil amendment or fertilizers will be placed in planting holes.

Water

Plants shall be watered midway through backfilling, and again upon completion of backfilling. For spring plantings (if approved), a rim of earth shall be mounded around the base of the tree or shrub no closer than the drip line, or no less than 30" in diameter, except on steep slopes or in hollows. Plants shall be watered a second time within 24-48 hours after installation. The earthen rim / dam should be leveled prior to the second growing season.

Staking

Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Plant Location

Colored surveyors' ribbon or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

Arrangement and Spacing

The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the landscape designer, wetland biologist, and/or city staff.

4.5 MAINTENANCE

The mitigation area will require periodic maintenance to ensure success of the mitigation measures. Maintenance shall occur in accordance with the approved plans. Maintenance may include, but will not be limited to: removal of invasive species and competing grasses (by hand if necessary), irrigation, fertilization (if necessary), replacement of plant mortality, and the replacement of mulch as needed. Chemical control, only if approved by City staff, shall be applied by a licensed applicator following all label instructions.

Duration and Extent

In order to achieve performance standards, the permittee shall have the mitigation area maintained for the duration of the 5-year monitoring period or until performance standards are met, whichever is greater. Maintenance will include: watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005), and any other measures needed to ensure plant survival. The landscape designer and/or wetland biologist shall direct all maintenance.

Survival

The permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation has been accepted by the City of Burlington. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15 of the following year). For fall installation (often required), the growing season will begin the following spring. The permittee shall replace any plants that are: failing, weak, defective in manner of growth, or dead during this growing season, as directed by the landscape designer, wetland biologist, and/or County staff.

Installation Timing for Replacement Plants

Replacement plants shall be installed between November 1 and March 1, unless otherwise determined by the landscape designer, wetland professional, and/or County staff.

Standards for Replacement Plants

Replacement plants shall meet the same standards for size and type as those specified for the original installation, unless otherwise directed by the landscape designer, wetland professional, and/or County staff.

Replanting

Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted as directed by the landscape designer, wetland professional, and/or County staff.

Herbicides / Pesticides

Chemical controls shall be used in the buffer enhancement area only in accordance with the approved mitigation plan as approved by the City.

Irrigation / Watering

Water shall be provided during the dry season (July 1 through October 15 at minimum) for the first two years after installation to ensure plant survival and establishment. A temporary above ground irrigation system and/or water truck should provide water. Water should be applied at a rate of 1" of water twice per week for Year 1, and 1" per week during Year 2.

General

The permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences, or other structural components of this mitigation site.

5.0 CONTINGENCY

If more than 20% of the plants are severely stressed during any of the inspections, or it appears more than 20% may not survive, additional plantings of the same species or, if necessary, alternative species may be added to the planting area. If this situation persists into the next inspection, a meeting with a representative for the City of Lake Stevens, the consulting wetland biologist and the property owner will be scheduled to decide upon contingency plans. Elements of the contingency plan may include, but will not be limited to: more aggressive weed control, plant mortality replacement, species substitution, fertilization, soil amendments and/or irrigation.

6.0 PROJECT MONITORING

6.1 PROJECT GOALS AND OBJECTIVES

The general goal of this mitigation plan is to enhance buffer functions and values on site. The specific goals of the mitigation plan are to increase vegetative cover and species diversity, increase soil stabilization capacity, limit erosion, create a human disturbance deterrent effect, improve the bio-filtration capacity of the buffer, and increase browsing and cover opportunities for wildlife.

To achieve these goals, native vegetation will be installed within degraded portions of the buffers. Proposed plantings have high value to wildlife, are armored and thicket-forming, form wide-spreading and/or deep roots, and will densely cover the ground surface.

Over time, this mitigation project is expected to achieve a net-gain in ecological functions, as native vegetation and habitat features improve wildlife habitat functions by creating more diverse and complex structure and dense vegetation improves the hydrologic and water quality improvement function provided by the wetland and buffer.

6.2 MONITORING REQUIREMENT

The monitoring plan shall include methodology, planting schedule, and reporting requirements.

Report Schedule

1. Initial compliance report at the completion of planting (As-Built Report);
2. Condition report thirty days after planting;
3. Semi-annual reports for the first two years, one early in the growing season and one at the end of the growing season;
4. Annual reports thereafter at the end of the growing season until the monitoring program ends.

6.3 MONITORING REPORT CONTENTS

As applicable, monitoring reports must include descriptions and data for:

1. Site plan and vicinity map
2. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation / restoration goals, and performance standards
3. Plant survival, vigor, and areal coverage for every plant community (transect or sampling point data), and explanation of monitoring methodology in the context of assessing performance standards
4. Slope condition, site stability, any structures or special features
5. Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
6. Observed wildlife, including amphibians, avians, and others
7. Assessment of nuisance / exotic biota and recommendations for management
8. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map.

6.4 PURPOSE FOR MONITORING

The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows that the goals and performance standards are being met five years after installation. If the project does not meet the definition of success, the City may extend the bonding period. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscaper, wetland specialist, and the City representative during the monitoring period until the project is evaluated as successful.

6.5 MONITORING METHODOLOGY

Sampling points or transects will be established for vegetation monitoring, and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points must be identified on the mitigation site plans in the first monitoring report. Each sampling point shall detail herbaceous, shrub, and tree coverage. Monitoring of vegetation sampling points shall occur annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

6.6 PHOTO POINTS

No less than four permanent photo points will be established within the enhancement areas. Photographs will be taken from these points to visually record condition of the enhancement areas. Photos shall be taken annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

6.7 MONITORING PROGRAM

Monitoring to document compliance with the project goals, targets, and standards for the Gages Slough wetland buffer shall be completed as follows:

- 1) Baseline monitoring inspection (time zero) with baseline/completed measures documented.
- 2) Fall monitoring in Years 1, 2, 3, and 5 with fall monitoring reports submitted to the city.
- 3) Spring reconnaissance-level monitoring in Years 1, 2, 3, and 5 to discuss conditions and maintenance recommendations (as needed) with the applicant.

A total of 12 (12) 50'x50' transects or plots will be established at the time of the initial Year 0 inspection. At each plot, at a minimum, record location, cover, number, and composition of plants installed and percent cover and composition of invasive species. Plant survival will be estimated in each planting area during each monitoring visit. Visual observations of fauna will be recorded.

Monitoring reports will be prepared and submitted to the City in the fall of each monitoring year. The reports will summarize the overall conditions of the planting areas and discuss whether the performance standards are being met. Photos of the planting areas will also be provided. In year 5, the final monitoring report will be prepared. It will determine if the mitigation plan has been successful per the established goals, objectives, and performance standards. If the mitigation plan is deemed unsuccessful, contingency actions will be utilized, or the monitoring period may be extended.

7.0 FUNCTIONS AND VALUES ASSESSMENT

7.1 EXISTING WETLAND AND BUFFER CONDITIONS

The surrounding landscape and further downstream. These high levels of function are chiefly due to the degraded conditions of surrounding lands, and significant water quality and flooding problems exist in the same drainage basin.

The wetland supports multiple plant communities, hydroperiods, and interspersed habitats, making it a valuable habitat for local wildlife. Its surrounding buffers are somewhat degraded.

Wildlife typically found in the wetland includes waterfowl, passerine birds, and amphibians. West Stevens Road and surrounding disturbed lands isolate the wetland from other valuable habitats and diminish its overall value for habitat function on the landscape level. Vegetation enhancement within the contiguous buffer could improve habitat functions.

The existing conditions of the wetland and its surroundings indicate that its primary functions are limited to water quality improvement and hydrologic control functions. Please refer to the 2014 DOE Rating Form and associated figures for a detailed demonstration of functions offered by this wetland.

7.2 POST MITIGATION FUNCTIONS AND VALUES

The mitigation project provides a functional lift in the plant community, complexity, and faunal support functions. The planted areas will be permanently protected and allowed to establish and grow. Over time, a vegetated barrier will screen and protect the wetland from outside developed areas.

Enhanced buffer vegetation will shade the Gages Slough channel and provide nutrients and protection for amphibian species. The planted areas will increase cover, foraging, perching, and eventually nesting opportunities for birds. Based on anticipated conditions, the correctly executed enhancement measures are expected to significantly improve the habitat functions and values on the site over that which existed before mitigation.

Based on anticipated conditions, the proposed alterations and mitigation measures meet the objectives of BMC 14.15.210.

8.0 PROJECT COST ESTIMATE

Estimated project costs include the cost of plant materials and labor to install plants, as well as the cost for mulching service. Additional charges associated with site preparations and weed management are to be determined later.

Estimated cost of mitigation measures:

Estimated cost for 1,620 one-gallon plants (\$10.00/plant) =	\$ 16,200.00
Estimated cost for 3,826 willow stakes (\$200/bundle of 100) =	\$ 7,652.00
Estimated Projects Costs=\$	23,852.00

9.0 FLOODPLAIN HABITAT ASSESSMENT

9.1 OVERVIEW

According to FEMA Flood Insurance Rate Maps, about half of the proposed development site is within a special flood hazard area (SFHA) labeled Zone A.

Projects within the designated floodplain areas require habitat assessments to determine the project's effects on species and habitats protected under the Endangered Species Act (ESA) and the Magnuson-Stevens Act.

For the subject project, the action area to be analyzed includes all areas within one mile downstream and within the SFHA of the proposed project.

The nearest listed species and critical habitats are approximately 4,200 feet from the subject site in the Skagit River.

Information provided by NOAA Fisheries and USFWS indicates that the project will occur within the range of the following species, listed in Table 1.

Table 1. Species in the Vicinity

Common Name	Scientific Name	Federal Status	WA State Status	Regulatory Agency
Puget Sound Coho	<i>Oncorhynchus kisutch</i>	Candidate	Not Listed	NMFS
Steelhead	<i>Oncorhynchus mykiss</i>	Threatened	Candidate	NMFS
Puget Sound Chinook	<i>Oncorhynchus tshawytscha</i>	Threatened	Candidate	NMFS
Bull trout	<i>Salvelinus confluentus</i>	Threatened	Candidate	USFWS

9.2 EFFECTS DETERMINATION

9.2.1 Effect Determination for ESA Species and Critical Habitats

A May Affect, Not Likely to Adversely Affect (NLAA) determination is warranted based on the following rationale:

- There are listed species within one mile of the subject site in the Skagit River.
- Stormwater infiltration will match the existing condition of the site.
- No significant vegetation is being removed from the site.
- No in-water work of any kind is proposed as part of the subject project.
- Noise resultant from construction is likely to be minimal and of short duration.
- No sedimentation is expected as a result of this project.

9.2.2 Effect Determination for Essential Fish Habitat

The Magnuson-Stevens Act (or the Sustainable Fisheries Act) broadly defines Essential Fish Habitat (EFH) to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The federal register defines an adverse effect on EFH to include any impact that reduces the quality and/or quantity of EFH. The Skagit River is the nearest documented water with EFH. A May Affect, Not Likely to Adversely Affect (NLAA) determination is warranted based on the following rationale:

- There are listed species within one mile of the subject site in the Skagit River.
- Stormwater infiltration will match the existing condition of the site.
- No significant vegetation is being removed from the site.

- No in-water work of any kind is proposed as part of the subject project.
- Noise resultant from construction is likely to be minimal and of short duration.
- No sedimentation is expected as a result of this project.

10.0 USE OF THIS REPORT

This Critical Area Report and Buffer Mitigation Plan is supplied to Sage Homes Northwest LLC, as a means of identifying all on-site critical areas and mitigating for proposed impacts. 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.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.



Shaun Sweeney
Associate Ecologist

References

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APPENDIX A:
WETLAND DETERMINATION DATA FORMS

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

Project/Site: 22292 - Markwood East City/County: Burlington, Skagit County Sampling Date: 12/5/22
 Applicant/Owner: Sage Homes Northwest LLC State: WA Sampling Point: S1
 Investigator(s): EC, SS Section, Township, Range: Sec. 6, Twp 34, Rge. 4
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): ~2%
 Subregion (LRR): LRR A Lat: 48.457562 Long: -122.342966 Datum: NAD83
 Soil Map Unit Name: Sumas Silt loam NWI classification: PSSC

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: Data pit located near wetland delineation flag WRA19.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m ²)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Alnus rubra</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Thuja plicata</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. <u>*Salix lasiandra</u>	<u>40</u>	<u>--</u>	<u>FACW</u>	
4. _____	<u>50</u>	<u>= Total Cover</u>		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 3m²)				
1. <u>Cornus sericea</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Salix lasiandra</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Rubus spectabilis</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ☐ Rapid Test for Hydrophytic Vegetation ☒ 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.
4. _____	<u>80</u>	<u>= Total Cover</u>		
Herb Stratum (Plot size: 1m²)				
1. <u>Phalaris arundinacea</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: * Species not rooted within the wetland.				

SOIL

Sampling Point: S1

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-13	10YR 3/2	91	10YR 3/4	9	C	M	SALO	
13-17	10YR 4/1	85	10YR 3/4	15	C	M	SALO	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators 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) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☒ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

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? Yes ☒ No ☐ Depth (inches): to surface
(includes capillary fringe)

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: 22292 - Markwood East City/County: Burlington, Skagit County Sampling Date: 12/5/22
 Applicant/Owner: Sage Homes Northwest LLC State: WA Sampling Point: S2
 Investigator(s): EC, SS Section, Township, Range: Sec. 6, Twp 34, Rge. 4
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): ~2%
 Subregion (LRR): LRR A Lat: 48.457619 Long: -122.342634 Datum: NAD83
 Soil Map Unit Name: Sumas Silt loam NWI classification: PSSC

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: Data pit located near wetland delineation flag WRA19	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m ²)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
1. <u>Alnus rubra</u>	<u>45</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Salix lasiandra</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Thuja plicata</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
<u>85</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: 3m ²)				
1. <u>Symphoricarpos albus</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Rubus spectabilis</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ☐ Rapid Test for Hydrophytic Vegetation ☒ 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.
3. <u>Sambucus racemosa</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>80</u> = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Herb Stratum (Plot size: 1m ²)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
<u>0</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
<u>0</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				

SOIL

Sampling Point: S2

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-14	10YR 3/2	95	10YR 3/4	5	C	M	SALO	
14-18	10YR 4/1	85	10YR 3/4	15	C	M	SALO	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators 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) | ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| ☐ High Water Table (A2) | ☐ Salt Crust (B11) |
| ☒ Saturation (A3) | ☐ Aquatic Invertebrates (B13) |
| ☐ Water Marks (B1) | ☐ Hydrogen Sulfide Odor (C1) |
| ☐ Sediment Deposits (B2) | ☐ Oxidized Rhizospheres along Living Roots (C3) |
| ☐ Drift Deposits (B3) | ☐ Presence of Reduced Iron (C4) |
| ☐ Algal Mat or Crust (B4) | ☐ Recent Iron Reduction in Tilled Soils (C6) |
| ☐ Iron Deposits (B5) | ☐ Stunted or Stressed Plants (D1) (LRR A) |
| ☐ Surface Soil Cracks (B6) | ☐ Other (Explain in Remarks) |
| ☐ Inundation Visible on Aerial Imagery (B7) | |
| ☐ Sparsely Vegetated Concave Surface (B8) | |

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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

APPENDIX B:
DOE WETLAND RATING FORMS

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 12/8/22

Rated by SS Trained by Ecology? ☒ Yes ☐ No Date of training 6/22

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 Skagit County ESRI

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 ☐ ☒ L	H ☐ ☒ L	H ☐ ☒ L	
Landscape Potential	☒ M L	☒ M L	H M ☒ L	
Value	☒ M L	☒ M L	☒ M L	TOTAL
Score Based on Ratings	8	8	6	22

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

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	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	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

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 (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	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 (<i>can be added to another figure</i>)	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 (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number **A**_____

HGM Classification of Wetlands in Western Washington

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

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

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

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

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

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

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

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

NO – go to 3

YES – The wetland class is **Flats**

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

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

._The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

._At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

._The wetland is on a slope (*slope can be very gradual*),

._The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

._The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

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

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

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

._The overbank flooding occurs at least once every 2 years.

Wetland name or number A**NO** – go to 6**YES** – The wetland class is **Riverine****NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

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

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

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

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

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

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

HGM classes within the wetland unit being rated		HGM class to use in rating
Slope + Riverine	☐	Riverine
Slope + Depressional	☐	Depressional
Slope + Lake Fringe	☐	Lake Fringe
Depressional + Riverine along stream within boundary of depression	☐	Depressional
Depressional + Lake Fringe	☐	Depressional
Riverine + Lake Fringe	☐	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	☐	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☒ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	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: <i>This is the area that is ponded for at least 2 months. See description in manual.</i> ☒ 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	4	
Total for D 1	Add the points in the boxes above	9

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	1
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	4

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

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Wetland name or number A**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- | | | |
|---|------------|----------|
| ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) | points = 4 | 2 |
| ☒ 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 | |

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 | 5 |
| ☒ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet | points = 5 | |
| ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet | points = 3 | |
| ☐ 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 | |

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 | 3 |
| ☒ 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 | |

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 | 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 | |

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?

Yes = 2 No = 0

2

Total for D 6

Add the points in the boxes above

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

Record the rating on the first page

Wetland name or number A**These questions apply to wetlands of all HGM classes.****HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- ☐ Aquatic bed 4 structures or more: points = 4
☒ Emergent 3 structures: points = 2
☒ Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1
☒ Forested (areas where trees have > 30% cover) 1 structure: points = 0

If the unit has a Forested class, check if:

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

2**H 1.2. Hydroperiods**

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

- ☒ Permanently flooded or inundated 4 or more types present: points = 3
☒ Seasonally flooded or inundated 3 types present: points = 2
☐ Occasionally flooded or inundated 2 types present: points = 1
☐ Saturated only 1 type present: points = 0
☒ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ **Lake Fringe wetland** 2 points
☐ **Freshwater tidal wetland** 2 points

2**H 1.3. Richness of plant species**

Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold 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

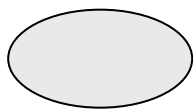
points = 1

< 5 species

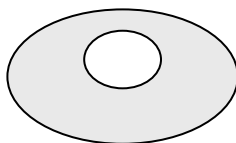
points = 0

1**H 1.4. Interspersion of habitats**

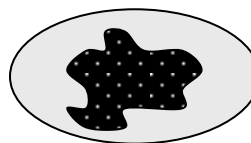
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



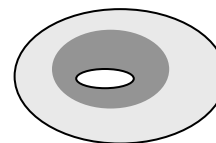
None = 0 points



Low = 1 point

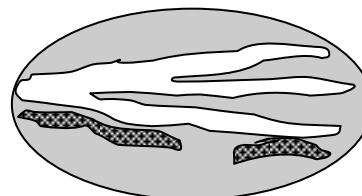
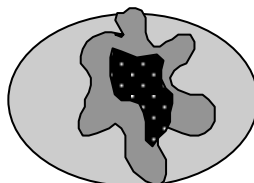
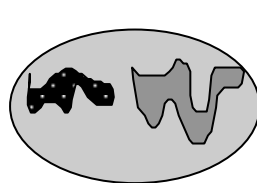


Moderate = 2 points

**3**

All three diagrams in this row

are **HIGH** = 3 points



Wetland name or number A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i> ☐ 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) ☒ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)		1
Total for H 1	Add the points in the boxes above	9

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 <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> % 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. <i>Calculate:</i> % undisturbed habitat <u>0</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>0</u> % ☐ 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		0
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	0

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

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

Record the rating on the first page

Wetland name or number A

WDFW Priority Habitats

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

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

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a 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.

Wetland name or number A**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

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

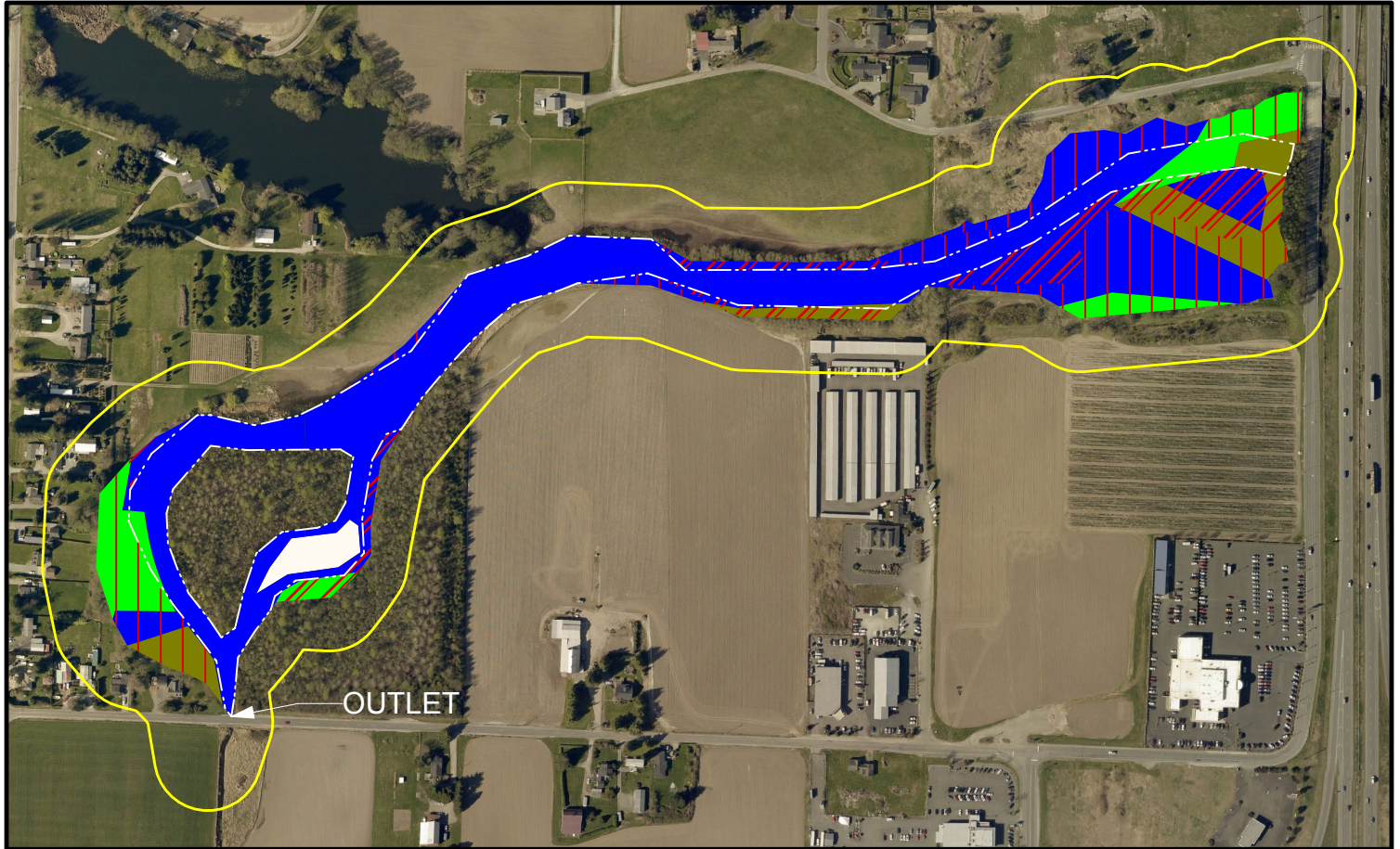
Wetland name or number A

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> ☐ Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. ☐ Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>) Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. ☐ The wetland is larger than 1/10 ac (4350 ft²) Yes = Category I No = Category II	Cat. I Cat. II
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to SC 6.1 No = not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV	Cat I Cat. II Cat. III Cat. IV
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	N/A

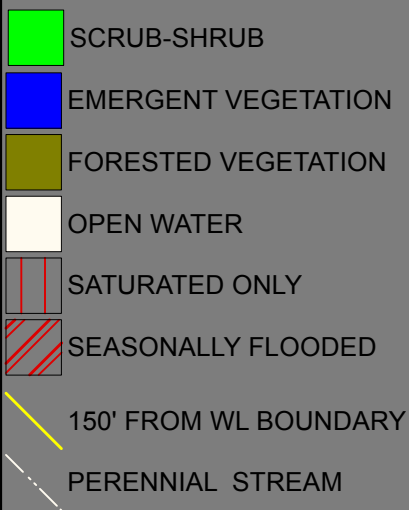
Wetland name or number _____

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SAGE HOMES - MARKWOOD EAST PHASE II
WETLAND RATING FIGURE 1- WETLAND A



LEGEND



Scale 1" = 500'

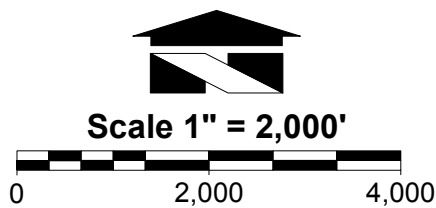
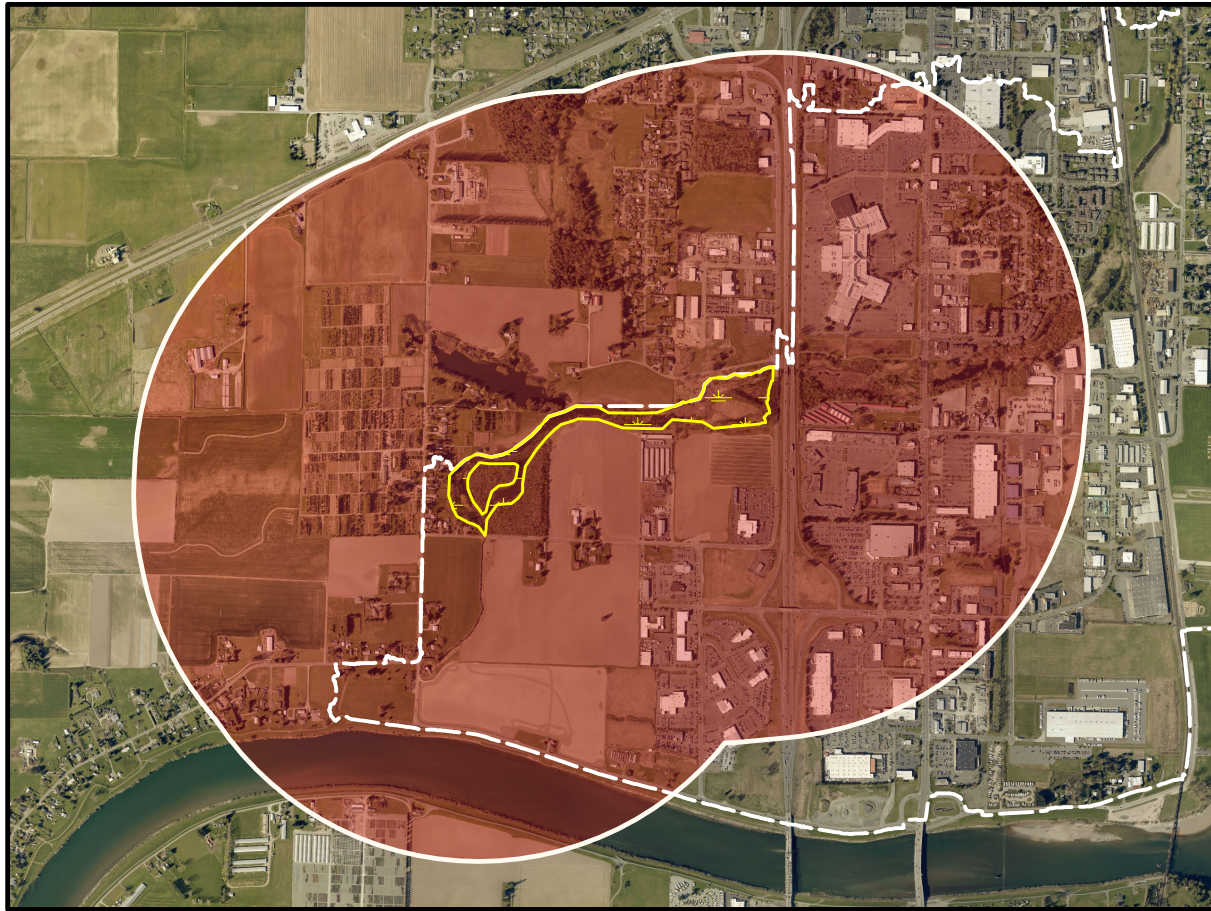


Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

Figure A-1
WRI Job # 22292
Rated by: SS

SAGE HOMES - MARKWOOD EAST PHASE II
WETLAND RATING FIGURE 2- WETLAND A



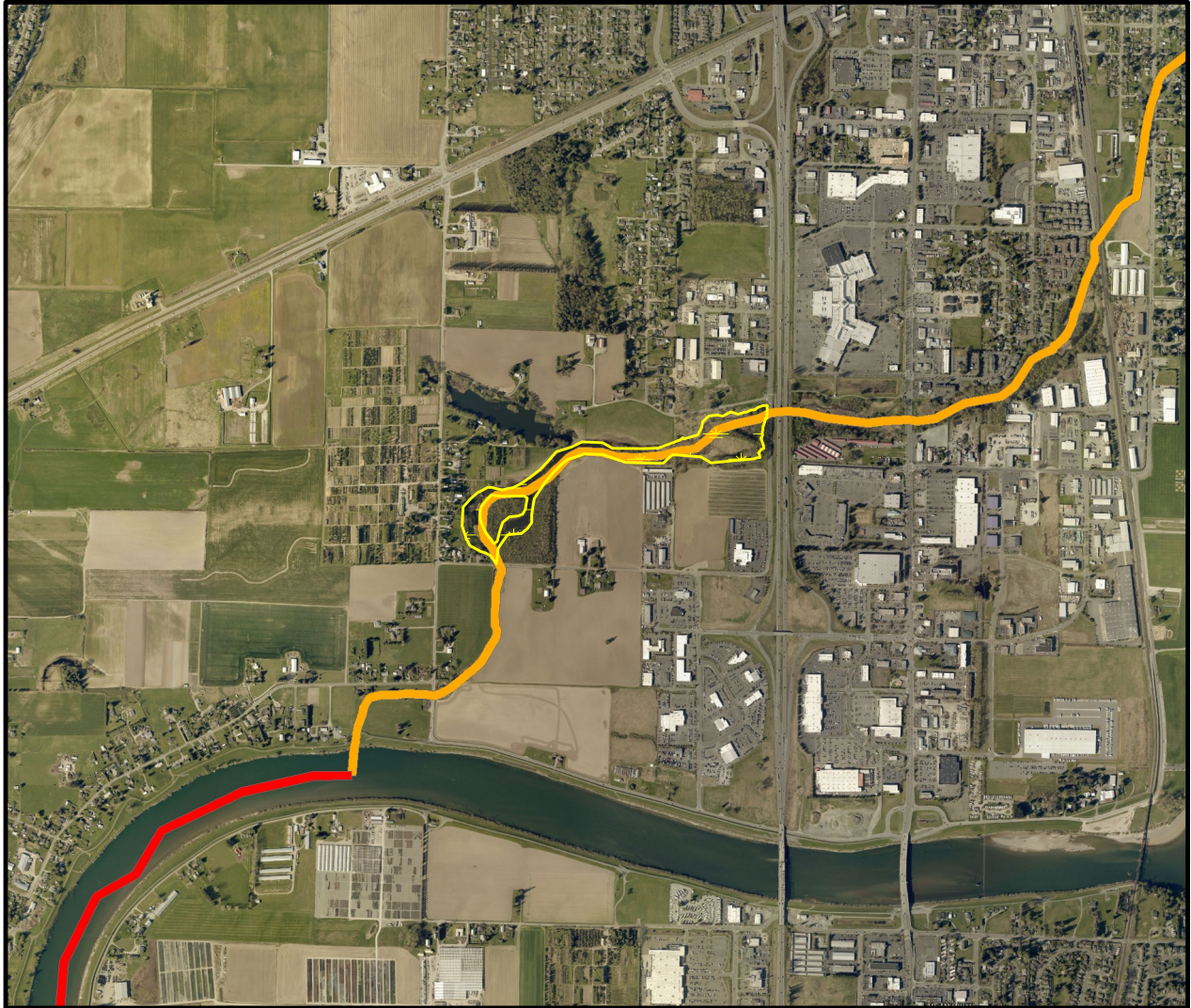
**CONTRIBUTING BASIN
AREA RELATIVE TO
WETLAND UNIT IS 56:1**

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**WETLAND RATING
Wetland A**

Figure A-2
WRI Job # 22292
Rated by: SS

SAGE HOMES - MARKWOOD EAST PHASE II
WETLAND RATING FIGURE 3- WETLAND A



LEGEND



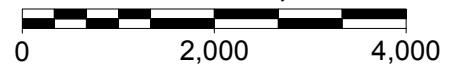
WETLAND



AQUATIC RESOURCES
ON THE 303(d) LIST



Scale 1" = 2,000'



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WETLAND RATING
Wetland A

Figure A-3
WRI Job # 22292
Rated by: SS

SAGE HOMES - MARKWOOD EAST PHASE II

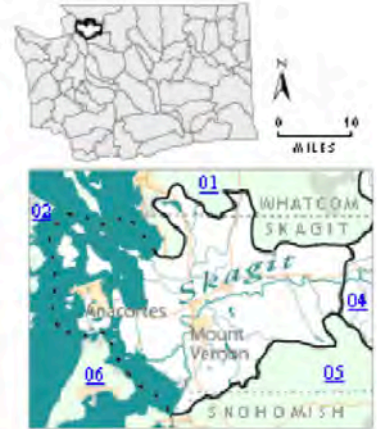
WETLAND RATING FIGURE 4- WETLAND A

WRIA 3: Lower Skagit-Samish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area ([WRIA](#)). Please use links (where available) for more information on a project.

Counties

- [Skagit](#)
- [Snohomish](#)
- [Whatcom](#)



Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Campbell Lake	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Erie Lake	Total Phosphorus	EPA approved	Tricia Shoblom 425-649-7288
Lake Ketchum	Total Phosphorus	Under development as a straight to implementation project	Tricia Shoblom 425-649-7288
Padilla Bay	Fecal Coliform	Under development	Danielle DeVoe 425-649-7036
Samish Watershed	Fecal Coliform	EPA approved Has an implementation plan	Danielle DeVoe 425-649-7036
Skagit Basin	Fecal Coliform	EPA approved Has an implementation plan	Danielle DeVoe 425-649-7036
	Temperature	EPA approved	

** Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

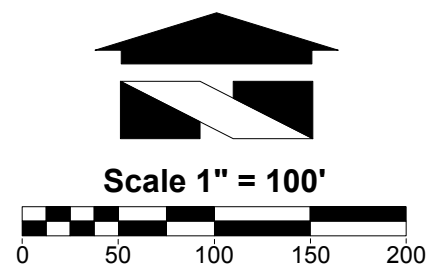
APPENDIX C:
CRITICAL AREAS DETERMINATION
AND MITIGATION MAP

CRITICAL AREAS DETERMINATION MAP
SAGE HOMES - MARKWOOD EAST PHASE II
PORTION OF SECTION 6, TOWNSHIP 34N, RANGE 4E, W.M.



LEGEND

-  WETLAND
-  PROPERTY BOUNDARY
-  BUFFER



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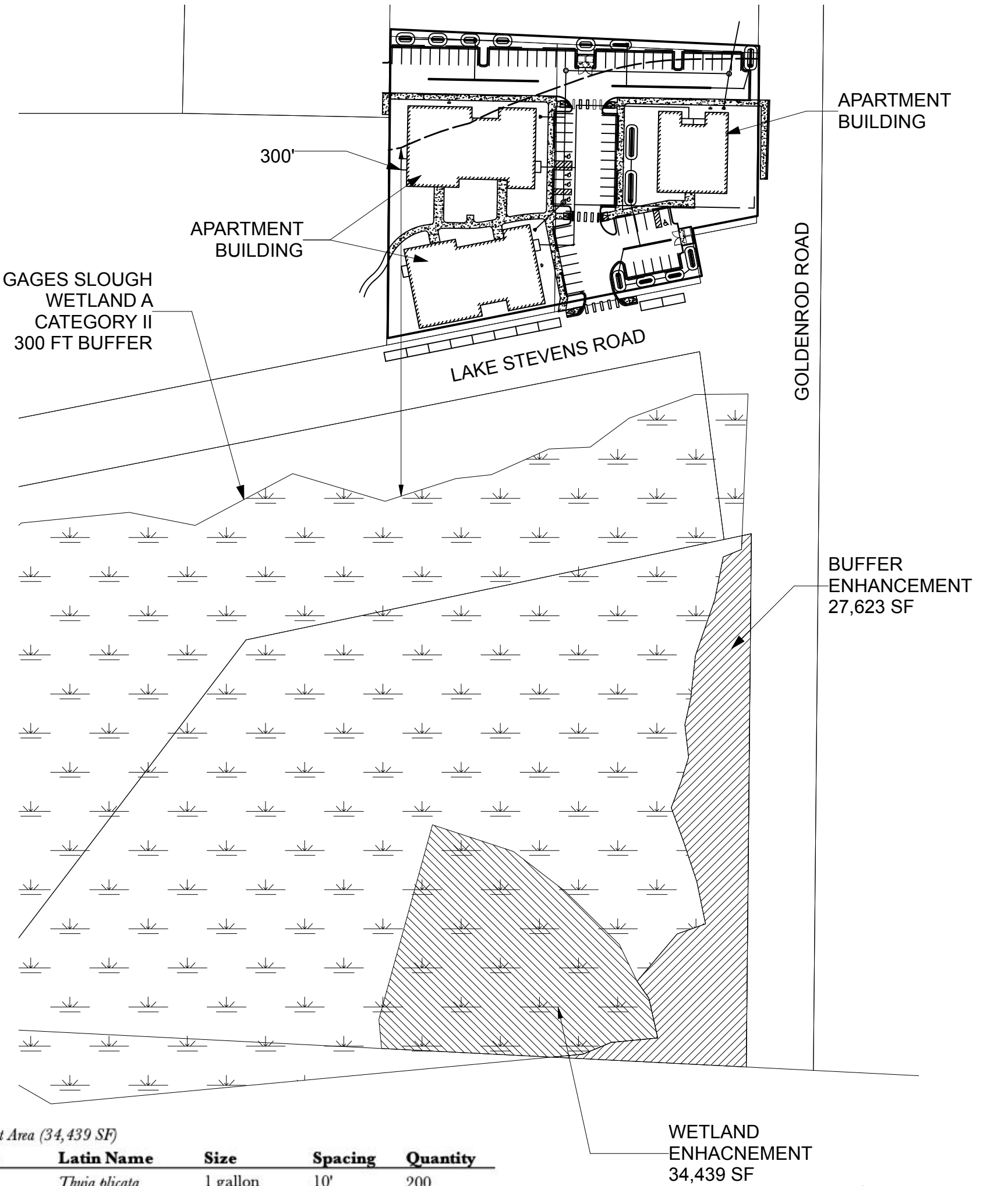
Critical Areas Determination Map
Sage Homes - Markwood East Phase II
Burlington, WA

Sage Homes Northwest LLC
Attn: Brett Treloar
9505 19th Avenue SE #118
Everett, WA 98208

Sheet 1/2
WRI #: 22292
Drawn by: SS
Date: 12/05/2022

CRITICAL AREAS AND MITIGATION PLAN MAP
SAGE HOMES - MARKWOOD EAST PHASE II

PORTION OF SECTION 6, TOWNSHIP 34N, RANGE 4E, W.M.

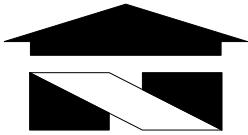


Wetland Enhancement Area (34,439 SF)

Common Name	Latin Name	Size	Spacing	Quantity
Western red cedar	<i>Thuja plicata</i>	1 gallon	10'	200
Sitka spruce	<i>Picea sitchensis</i>	1 gallon	10'	200
Pacific willow	<i>Salix lucida</i>	Stake	3'	1276
Sitka willow	<i>Salix sitchensis</i>	Stake	3'	1275
Red-osier dogwood	<i>Comus sericea</i>	Stake	3'	1275

Buffer Enhancement Area (27,623 SF)

Common Name	Latin Name	Size	Spacing	Quantity
Western red cedar	<i>Thuja plicata</i>	1 gallon	10'	160
Douglas fir	<i>Pseudotsuga menziesii</i>	1 gallon	10'	160
Vine maple	<i>Acer circinatum</i>	1 gallon	6'	150
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	6'	150
Beaked hazelnut	<i>Corylus comuta</i>	1 gallon	6'	150
Serviceberry	<i>Amelanchier arborea</i>	1 gallon	6'	150
Butter Cherry	<i>Prunus emarginata</i>	1 gallon	6'	150
Oceanspray	<i>Holodiscus discolor</i>	1 gallon	6'	150



Scale 1" = 100'



LEGEND	
	WETLAND
	BUFFER
	BUFFER ENHANCEMENT
	WETLAND ENHANCEMENT

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Critical Areas Determination and Mitigation Plan Map
Sage Homes - Markwood East Phase II
Burlington, WA

Sage Homes Northwest LLC
Attn: Brett Treloar
9505 19th Avenue SE #118
Everett, WA 98208

Sheet 2/2
WRI #: 22292
Drawn by: SS
Date: 12/09/2022