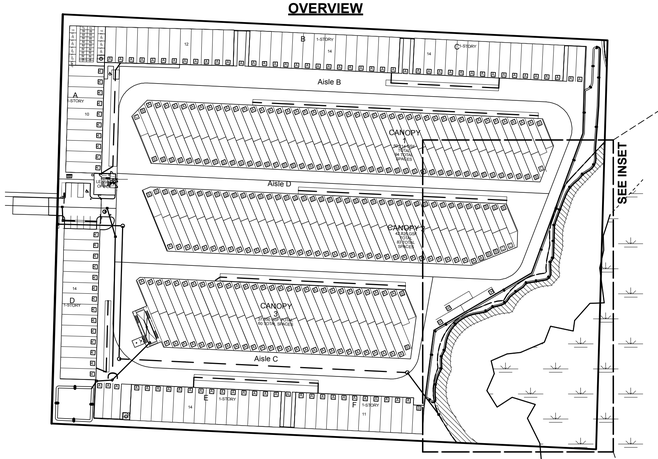
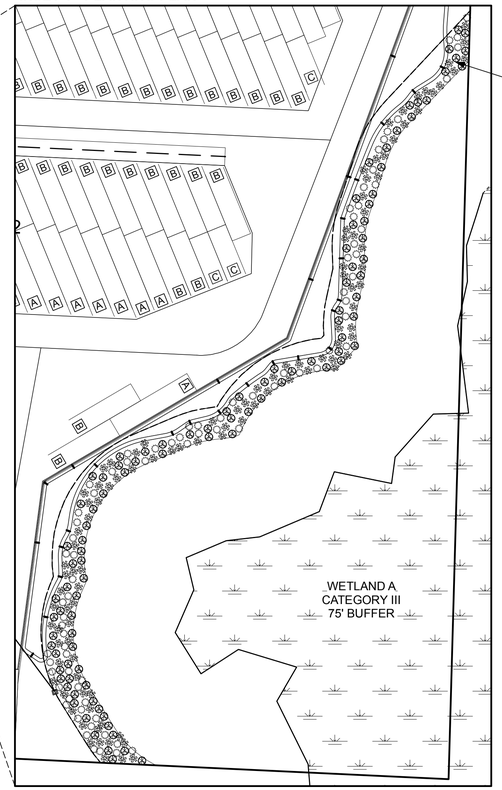
BUFFER RESTORATION PLAN
163 RV STORAGE

OVERVIEW



INSET 1 - PLANTING PLAN



LEGEND

- WETLAND
- WETLAND (APPROX.)
- BUFFER
- BUFFER RESTORATION AREA

Scale 1" = 100'
0 50 100 150 200

Inset Scale 1" = 40'
0 20 40 60 80

INSET LEGEND

- ○ SALMONBERRY
- ❋ BLACK TWINBERRY
- ⊗ SWAMP ROSE

EACH SYMBOL ON THE PLANTING PLAN REPRESENTS 1 INDIVIDUAL PLANT

PROJECT DESCRIPTION

The applicant proposes to restore a 7,137 square foot buffer area that will be impacted from grading and installation of a bioswale. Restoration of the buffer will include installation of native shrubs only, as tree roots could damage the bioswale.

BUFFER RESTORATION PLANTINGS

The following plants shall be installed in in the buffer restoration area:

Buffer Restoration Area (7,137 square feet)

Common Name	Latin Name	Size	Spacing	Quantity
Salmonberry	*Rubus spectabilis*	1 gallon	5'	95
Black twinberry	*Lonicera involucrata*	1 gallon	5'	95
Swamp rose	*Rosa pisocarpa*	1 gallon	5'	95

PROJECT MONITORING PROGRAM

INSPECTION AND REPORTING REQUIREMENTS

1. Initial compliance/as-built report at completion of construction
2. Inspection and brief status report 30 days after planting
3. Inspection and brief status report early in the first growing season
4. Inspection and brief status report and the end of the first growing season
5. Inspection and brief status report early in the second growing season
6. Inspection and brief status report and the end of the second growing season
7. Annual site inspection (once per year in the fall) in years 3-5
8. Annual reports (one report submitted in the fall of each monitored year) for years 3-5

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 definitions of success stated below are met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscape and/or wetland specialist and City of Marysville staff during the monitoring period, until the project is evaluated as successful.

Monitoring

Monitoring shall be conducted in accordance with the proposed mitigation plan. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented and City staff inspects the site and issues approval of the installation. The monitoring period is proposed to last for five years, however, if the site meets the Year 5 performance standards in earlier years, the monitoring program can be completed early. If the site does not meet the Year 5 performance standards at the end of Year 5, contingency actions may be necessary and monitoring may be extended one year at a time until the Year 5 performance standards are met.

Vegetation Monitoring

Sampling points or transects will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points shall be identified in the field and on the monitoring map in the first monitoring report. Each sampling point or transect shall detail tree, shrub, and herbaceous aerial coverage. During Years 3 through 5, vegetation monitoring shall occur between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

Photo points

At least one photo point shall be established in each buffer restoration area and at least four permanent photo points shall be established within each buffer enhancement area. Photographs will be taken from these points to visually record the condition of the restoration/enhancement area. Photos shall be taken between May 15 and September 30 (prior to leaf drop), unless otherwise specified. Photo points shall be identified on the monitoring map in the first monitoring report.

Monitoring Report Contents

During Years 3 through 5, monitoring reports shall be submitted by October 31 of each year. As applicable, monitoring reports must include descriptions / 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. Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
5. Observed wildlife, including amphibians, avians, and others
6. Assessment of nuisance / exotic biota and recommendations for management
7. Descriptions of any structural repair or replacement (i.e. fencing, signs, etc.)
8. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map

PROJECT SUCCESS & COMPLIANCE

Criteria for Success

Upon completion of the proposed mitigation project, an inspection by a qualified wetland professional shall be made to determine plan compliance. An as-built report will be supplied to the City of Marysville after the completion of planting to show compliance with the mitigation plan. The qualified wetland professional will perform condition monitoring of the plantings and provide reports according to the schedule described.

Goal

To restore functions of the on-site wetland buffer.

Definition of Success

The mitigation project goal will be deemed successful when objectives are met, as evidenced through the observation of set performance standards.

Objectives

Objective 1: To restore an area of buffer that was disturbed during grading and installation of a bioswale, with installation of native shrubs.

Performance Standards

The objectives will be considered successfully met when, and if, the following performance standards are observed in the enhancement area:

	Year 1	Year 2	Year 3	Year 4	Year 5
Survivorship*	90%	80%	70%	n/a	n/a
Native species cover**	n/a	n/a	30%	40%	50%
Invasive cover	<10%	<10%	<10%	<10%	<10%

*Only applies to installed native plantings.
**Native volunteer species may be included to meet native cover requirements.

If Year 5 performance standards are met early, the City may consider the project to be successful and terminate the monitoring period at that time.

CONTINGENCY PLAN

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

ASSURANCE DEVICE

Performance and/or maintenance bonds, or other assurance device, may be required by the City of Marysville, in an amount to be determined by the City. The following is an estimate of the cost to install the mitigation measures.

One-gallon plants	404 x $20.00/plant, installed	$8,080.00
Mulch	$3.25/SY	$900.00
Total Estimated Cost		**$8,980.00**

PROJECT NOTES

Pre-Construction Meeting

Mitigation projects are typically more complex to install than can be described in plans. Careful monitoring by a wetland professional for all portions of this project is strongly recommended. Construction timing and sequencing is important to the success of this type of project. There shall be a pre-construction meeting on this site between the Permittee, consulting wetland professional, and laborers. The objective will be to verify the location of erosion control facilities, verify the location of mitigation areas, and to discuss project sequencing.

Inspections

A wetland professional shall be contracted to periodically inspect 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 Marysville representative and/or the consulting professional will make these decisions during construction and any changes will be reflected in the As-built report.

PLANTING NOTES

Plant in the early spring or late fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some species substitution may be allowed due to the availability of plants, only with the agreement of the wetland professional and/or City staff.

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 discuss the intent of the project and resolve any questions. During this meeting, a discussion regarding plant spacing and locations of plant species shall occur.

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 those species' horticultural requirements. Plants must be re-inspected by the wetland professional prior to installation.

Damaged plants

Damaged, dried out, or otherwise mishandled plants will be rejected at the 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 professional, 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 containerized or balled and burlapped (B&B), unless explicitly authorized by the wetland professional. 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 wetland professional 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.

Flagging

All mitigation plantings shall be clearly flagged with highly visible flagging tape at the time of the installation. Clear identification of mitigation plants will aide in future assessments of performance standards during monitoring visits.

Timing of Planting

Unless otherwise determined by the consulting biologist and City staff, initial planting shall occur between October 15 and March 15. 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.

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 recommended.

Site conditions

The contractor shall immediately notify the wetland professional 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 soils.

Fertilizer

Slow release fertilizer may be used if pre-approved by the City of Marysville. 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.

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

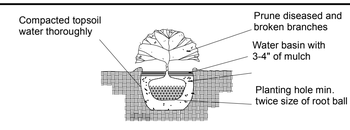
Colored surveyors ribbon or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

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 wetland professional and/or City staff.

Mulch

All landscaped areas denuded of vegetation and soil surface surrounding all planting pit areas shall receive no less than 2 to 4 inches of organic compost or certified weed free straw after planting. A layer of woodchips will be placed around the base of each plant in a 3-foot radius and at a depth of 2 to 4 inches. Mulch and woodchips shall not be allowed to contact plant stems in order to avoid plant decay and rot.



SHRUB PLANTING DETAIL
No Scale

MAINTENANCE

The mitigation areas will require periodic maintenance to remove undesirable species and replace vegetation mortality. Maintenance shall occur in accordance with the approved plans. Maintenance may include, but will not be limited to: removal of competing grasses (by hand if necessary), irrigation, fertilization (if necessary), replacement of plant mortality, and the replacement of mulch for each maintenance period. 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 be responsible for maintaining the mitigation area for the duration of the five-year monitoring period. 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) as well as Himalayan blackberry, cutting down competing grasses, and any other measures needed to ensure plant survival.

Survival

The permittee shall be responsible for the health of 100 percent of all newly installed plants for one growing season after installation has been accepted by the City of Marysville. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 14 of the following year). For fall installation (if required), the growing season will begin the following spring. The permittee shall replace any plants that are failing, weak, defective in manner of growth, dead, or missing during the first growing season.

Installation Timing for Replacement Plants

Replacement plants shall be installed between November 1 and March 15, unless otherwise determined.

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 a qualified professional.

Replanting

Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted.

Herbicides / Pesticides

Unless deemed absolutely necessary by the consulting biologist and/or the City, chemical controls shall not be used in the mitigation area, critical areas, or their buffers. Any chemical controls used shall be applied by a licensed applicator following all label instructions.

Irrigation / Watering

Water shall be provided during the dry season (July 1 through October 15) for the first two years after installation to ensure plant survival and establishment. A temporary above-ground irrigation system shall provide water at a rate of one inch (1") of water twice per week for year one and one inch (1") per week during year two. Adjustments to this schedule may be recommended by the wetland professional during the monitoring period.

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.

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

BUFFER RESTORATION PLAN
163 RV STORAGE
MARYSVILLE, WA

Lee & Associates
Attn: Richard Peterson
701 Pike Street, #1025
Seattle, WA 98101

WRI #: 21333
Drawn by: AR
Date: 1/17/24