

## SUPPLEMENTAL MEMORANDUM

November 2, 2022

To:	Mr. David Morse Toll Brothers, Inc. 9720 NE 120th Place, Suite 100 Kirkland, WA. 98034
From:	Kolten Kosters, MS, PWS Annamaria Clark, BS, PWS Raedeke Associates, Inc. 2111 N. Northgate Way, Suite 219 Seattle, WA. 98133
RE:	Toll 44 <sup>th</sup> Street NE Marysville – Response to City Comments (R.A.I. No. 2021-056-101) City of Marysville File No. PA22-024

This memorandum has been prepared in response to comments provided by the City of Marysville in a letter dated August 17, 2022 and via email on October 27, 2022 regarding the Wetland Delineation & Buffer Enhancement Plan for the Toll 44<sup>th</sup> Street NE project (Raedeke Associates, Inc. 2022).

## **DIRECT BUFFER IMPACTS**

Section 5.1 on page 8 of the report (RAI 2022) states that no direct impacts to wetlands are proposed by the project. However, Section 5.2 describes road frontage improvements along 44<sup>th</sup> Street NE required by the City of Marysville. These road improvements constitute direct impacts to the wetland buffer but are considered indirect impacts to the wetland. The road improvements would permanently impact an estimated 8,800 square feet of buffer area, along with an additional 2,200 square feet of temporary impacts, per calculations provided by D.R. Strong.

In addition, a 10-foot-wide water easement is located within the buffer which has been reviewed and approved by the City of Marysville, per information provided by D.R. Strong. Utility corridors are allowed within wetlands or buffers if specific criteria is met (MMC 22E.010.100.9(a-h)).

Mr. David Morse, Toll Brothers, Inc. November 2, 2022 Page 2

To mitigate for the 8,800 square feet of permanent buffer impact, approximately 26,582 square feet of buffer enhancement is proposed for what is currently degraded buffer. The enhancement area greatly exceeds the area of impacts. Enhancement will include removal of the residential structure, gravel driveway, and invasive species, followed by replanting the degraded areas with native trees and shrubs. The enhancement plan is further described on pages 11 - 16 of the report (RAI 2022).

The buffer enhancement plan has been updated to show the split rail fence and critical area signage around the wetland buffer and along 44<sup>th</sup> Street NE (see Sheet 2 of attached sheets). The split rail fence may need to included openings or gates to allow maintenance access to the buffer enhancement area from 44<sup>th</sup> Street NE and openings where the split rail fence may intersect with any proposed trails.

# CONCLUSION

Required 44<sup>th</sup> Street NE frontage improvements will result in approximately 8,800 square feet of permanent buffer impact and 2,200 square feet of temporary buffer impact. Approximately 26,582 square feet of buffer enhancement is proposed as mitigation, as described in further detail in the buffer enhancement plan (RAI 2022).

# LIMITATIONS

We have prepared this memorandum for the exclusive use of Toll Brothers, Inc. and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Toll Brothers, Inc.

We warrant that the work performed conforms to standards generally accepted in our field, and has been prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

If you have any questions or comments, please contact Kolten Kosters or Annamaria Clark at (206) 525-8122 or at <u>kkosters@raedeke.com</u> or <u>aclark@raedeke.com</u>.

Mr. David Morse, Toll Brothers, Inc. November 2, 2022 Page 3

## LITERATURE CITED

- Marysville, City of. 2022. August 17, 2022 letter from Emily Morgan, City of Marysville, to David Morse, Toll Brother, Inc. regarding PA22-024 – Marysville 44<sup>th</sup> PRD – Technical Review 1.
- Marysville, City of. 2022. October 27, 2022 email from Emily Morgan, City of Marysville, to Raedeke Associates, Inc. and D.R. Strong regarding Toll 44<sup>th</sup> Critical Area Comments.
- Raedeke Associates, Inc. 2022. Toll 44<sup>th</sup> Street Wetland Delineation Update and Preliminary Buffer Enhancement Plan. June 10, 2022, report prepared for Toll Brothers, Inc., Kirkland, WA.





## **BUFFER RESTORATION**

TREES							
SCIENTIFIC NAME	COMMON NAME	WIS STATUS	MIN. SIZE	QTY.	SPACING	LOCATION	
Malus fusca	Pacific crabapple	FACW	4' tall	44	10' O.C.	SUN	
Picea sitchensis	Sitka spruce	FAC	4' tall	44	10' O.C.	SUN	
Pinus contorta var. contorta	Beach pine	FAC	4' tall	44	10' O.C.	SUN	
Prunus emarginata	Bittercherry	FACU	2 gal.	44	10' O.C.	SUN	
Pseudotsuga menziesii	Douglas fir	FACU	4' tall	44	10' O.C.	SUN	
Thuja plicata	Western red arborvitae	FAC	4' tall	44	10' O.C.	SHADE	

### SHRUBS

SCIENTIFIC NAME	COMMON NAME	FAC STATUS	MIN. SIZE (container)	QTY.	SPACING	LOCATION
Acer circinatum	Vine Maple	FAC	1 gal.	106	5' O.C.	SHADE
Cornus alba	Red osier dogwood	FACW	1 gal.	106	5' O.C.	EITHER
Gaultheria shallon	Salal	FACU	1 gal.	106	4' O.C.	SHADE
Rubus spectabilis	Salmonberry	FACU	1 gal.	106	5' O.C.	SUN
Mahonia aquifolium	Hollyleaved oregon grape	FACU	1 gal.	106	5' O.C.	SHADE
Physocarpus capitatus	Pacific ninebark	FAC	1 gal.	106	5' O.C.	SUN
Rosa nutkana	Nootka rose	FAC	1 gal.	106	5' O.C.	SUN
Sambucus racemosa	Red elder	FACU	1 gal.	106	5' O.C.	SUN
Symphoricarpos albus	Common snowberry	FACU	1 gal.	106	5' O.C.	SHADE
Vaccinium ovatum	Evergreen blueberry	FACU	1 gal.	106	5' O.C.	SHADE

### HERBACEOUS

SCIENTIFIC NAME	COMMON NAME	FAC STATUS	MIN. SIZE (container)	QTY.	SPACING	LOCATION		
Polystichum munitum	Pineland Swordfern	FACU	1 gal.	831	4' O.C.	SHADE		







EXCEPT FOR SPLIT RAIL, A GATE IS REQUIRED FOR PEDESTRIAN ACCESS TO THE BUFFER;

2. SOLID FENCING IS NOT PERMITTED

2 NGPA SPLIT RAIL CEDAR FENCE OR SIMILAR









3)CRITICAL AREAS SIGN DETAIL

ATTACHED TO THE FENCE STATING THAT THE PROTECTED CRITICAL AREA AND BUFFER MUST NOT BE DISTURBED OTHER THAN NECESSARY FOR MAINTENANCE OF VEGETATION; 2) THE SIGNS MUST BE MAINTAINED AND REMAIN IN PERPETI JITY REMAIN IN PERPEIDINY; 3) SIGNAGE SHALL MEET THE ADMINISTRATIVE STANDARDS OF THE PLANNING AND BUILDING DEPARTMENT FOR DESIGN, NUMBER AND LOCATION:



(4) CONTAINER TREE OR SHRUB PLANTING DETAIL

CONSTRUCTION SEQUENCE

BE PERFORMED.

NECESSARY

BIOLOGIST

REVIEW AND APPROVAL.

7.

COMMENCEMENT OF WORK

1. CONTRACTOR SCHEDULES AND ATTENDS A PRE-CONSTRUCTION MEETING WITH

THE PROJECT BIOLOGIST, LANDSCAPE DESIGNER/ ARCHITECT AND CITY OF MARYSVILLE BIOLOGIST.

2. CONTRACTOR WILL FLAG ALL THE LIMITS OF THE ENHANCEMENT AREAS FOR PROJECT BIOLOGIST APPROVAL. CONTRACTOR WILL WALK THE SITE WITH THE PROJECT BIOLOGIST TO CLARIFY LIMITS OF CONSTRUCTION AND THE WORK TO

3. CONTRACTOR WILL INSTALL TEMPORARY EROSION/SEDIMENT CONTROL MEASURES AS REQUIRED FOR PROJECT BIOLOGIST APPROVAL PRIOR TO THE

4. CONTRACTOR WILL REMOVE ALL GARBAGE, DEBRIS, HARD SURFACE MATERIAL, GRAVEL AND INVASIVE SPECIES FROM BUFFER ENHANCEMENT AREA AS

5. CONTRACTOR WILL REMOVE SOD & AMEND EXISTING SOIL WITH COMPOST AS

6. PROJECT BIOLOGIST AND OWNER WILL FIELD LOCATE LARGE WOODY DEBRIS

CONTRACTOR WILL LAY OUT NURSERY-GROWN PLANTS PER PLANS FOR APPROVAL BY THE PROJECT BIOLOGIST. FOLLOWING LAYOUT APPROVAL,

CONTRACTOR TO INSTALL PLANTS, SEED AND MULCH AS DIRECTED BY PLANS.

9 CONTRACTOR SUBMITS AS BUILT DRAWING AND COPIES OF INVOICES FOR ALL PLANT, SOIL AMENDMENT, AND MULCH MATERIALS USED TO THE PROJECT

10. PROJECT BIOLOGIST SUBMITS AS-BUILT REPORT TO THE CITY OF MARYSVILLE

DIRECTED BY THE PLANS AND PROJECT BIOLOGIST.

AND CONTRACTOR WILL PLACE LARGE WOODY DEBRIS.

8. THE PROJECT BIOLOGIST WILL APPROVE PLANT INSTALLATION.



-PLACE ROOTBALL ON UNEXCAVATED OR







TAMPED SOIL (SO PLANT DOES NOT SINK).





"SET TOP OF ROOTBALL FLUSH WITH GRADE.









GOALS AND OBJECTIVES

THE OVERALL CRITERIA FOR THE RESTORED BUFFER WOULD BE BASED ON THE SUCCESSFUL ESTABLISHMENT OF DESIRED PLANT SPECIES. OBJECTIVES OF THE BUFFER RESTORATION PLAN CONSIST OF THE FOLLOWING

1) ENHANCE BUFFER FUNCTIONS THROUGH THE INSTALLATION OF NATIVE TREES, UBS. & GROUNDCOVERS

2) REMOVE INVASIVE SPECIES IDENTIFIED BY THE PROJECT BIOLOGIST FROM THE AREAS OF ENHANCEMENT.

### PERFORMANCE STANDARDS

SPECIFIC PERFORMANCE STANDARDS TO BE USED IN THE FIVE YEAR LONG-TERM MONITORING ARE THE FOLLOWING: 1)100% SURVIVAL OF ALL INSTALLED SHRUBS, TREES, AND GROUND COVER FOR ONE YEAR AFTER PLANTING AND AT LEAST 85% SURVIVAL AFTER THREE YEARS.

2) COVERAGE BY TREES AND SHRUBS (VOLUNTEER AND PLANTED INDIVIDUALS) WOULD BE AT LEAST 20% AFTER TWO YEARS AND 50% AFTER FIVE YEARS.

- AT LEAST 15% AFTER ONE YEAR
- AT LEAST 20% AFTER TWO YEARS
- AT LEAST 30% AFTER THREE YEARS AT LEAST 40% AFTER FOUR YEARS
- AT LEAST 50% AFTER FIVE YEARS

3) ALLOW ESTABLISHMENT OF NOT MORE THAN 10% COVER OF NON-NATIVE INVASIVE PLANT SPECIES WITHIN THE CREATED WETLAND OR ITS BUFFER AT ANY TIME DURING THE 5-YEAR MONITORING PERIOD.

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> SHEET 3 of 4



### GENERAL NOTES AND CONDITIONS 1.0 GENERAL CONDITIONS

### 1.1 GENERAL DESCRIPTION

FURNISH ALL MATERIALS, TOOLS, EQUIPMENT, AND LABOR NECESSARY FOR THE COMPLETION OF SITE PREPARATION AND PLANTING, AS INDICATED ON DRAWINGS AND SPECIFIED HEREINAFTER. WORK INDIDATED ON DRAWINGS AND SPECIFIED HEREINAPTER. WORK INCLUDES REMOVAL OF INVASIVE PLANT SPECIES BY HAND METHODS, PLANTING, MULCHING, AND GUARANTEE OF PLANTED AREAS AS SPECIFIED HEREIN.

#### 1.2 CONSTRUCTION OBSERVATION / QUALITY ASSURANCE / GUARANTEE

THE PROJECT BIOLOGIST / ARCHITECT SHALL BE INVOLVED DURING THE FOLLOWING PHASES OF CONSTRUCTION: (1) ON-SITE MEETING PRIOR TO COMMENCEMENT OF WORK (PRE-CONSTRUCTION MEETING), FLAG CONSTRUCTION LIMITS FOR GARBAGE DEBRIS AND HARD SURFACE REMOVAL (2) APPROVAL OF INVASIVE SPECIES REMOVAL COMPLETION: (3) APPROVAL OF PLANTS, PLANTING LOCATIONS AND TECHNIQUES; AND (4) FINAL INSPECTION. PRIOR NOTICE OF 48 HOURS TO THE PROJECT BIOLOGIST FOR THE ABOVE ACTIVITIES IS REQUIRED

APPROVAL BY THE PROJECT BIOLOGIST MUST BE RECEIVED PRIOR TO ITUTIONS. THESE MAY BE PERMITTED BASED ON PLAN AVAILABILITY.

ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE FULL YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE PROJECT BIOLOGIST ANY DEAD PLANTED MATERIAL OR PLANTED MATERIAL THAT IS NOT IN VIGOROUS CONDITION WITHIN A PERIOD OF ONE YEAR ROM ACCEPTANCE OF THE WORK SHALL BE REPLACED AT THE

CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL FURNISH CERTIFICATES OF INSPECTION AND COMPLIANCE TO THE PROJECT BIOLOGIST AS REQUIRED BY FEDERAL AND STATE LAWS AND REGULATIONS FOR ALL PLANT MATERIALS AND FERTILIZERS USED IN THE PROJECT.

### 1.3 SITE CONDITIONS / DAMAGE / CLEANUP

THE PROJECT BIOLOGIST SHALL BE NOTIFIED IMMEDIATELY IF SITE CONDITIONS DIFFER FROM THOSE SHOWN IN THE PLANS. CARE SHALL BE TAKEN TO PROTECT THE WETLAND & UNDISTURBED BUFFER DURING CONSTRUCTION ACTIVITIES. THE MITIGATION PLANTING AREAS SHALL BE CLEARLY MARKED BY CONTRACTOR AND APPROVED. BY THE PROJECT BIOLOGIST PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES.

ANY ITEMS NOT SHOWN IN THE PLANS, SUCH AS EXISTING BUILDINGS EQUIPMENT, UNDERGROUND UTILITIES, WALKS, AND/OR ROADS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND/OR REPAIRED AT THE CONTRACTOR'S EXPENSE. IN A MANNER SATISFACTORY TO THE OWNER/CONSTRUCTION SITE SUPERINTENDANT BEFORE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING PLANTED AREAS FREE OF DEBRIS. UPON COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIAL FOURMENT AND DEBRIS FROM THE SITES. ALL PLANTED AREAS SHALL BE RAKE-CLEAN PRIOR TO MULCHING 1.4 SCHEDULE

2.0 PRODUCTS

ALL GRADING AND OTHER SOIL DISTURBING ACTIVITIES WITHIN THE "ALL GRADING AREAS, INCLUDING BUT NOT LIMITED TO REMOVAL OF ASPHALT AND OTHER HARDENED SURFACES OR REMOVAL OF SPECIES, SHALL OCCUR BETWEEN MARCH 1 AND OCTOBER 30 UNLESS OTHERWISE APPROVED BY THE PROJECT BIOLOGIST OR UNLESS OTHERWISE REQUIRED BY STATE OR FEDERAL AGENCIES FOR PERMITS THAT MAY BE REQUIRED FOR PROJECT IMPLEMENTATION.

PLANTING OF WOODY MATERIAL SHOULD OCCUP BETWEEN OCTOBER 1 AND MARCH 1 TO TAKE ADVANTAGE OF SEASONAL RAINS AND GREATER AVAILABILITY OF PLANT MATERIAL PLANTING DURING ABNORMALLY HOT, DRY, OR ERFEZING WEATHER, OR AT TIMES OTHER THAN AS NOTED IS NOT ALLOWED WITHOUT PRIOR AUTHORIZATION B' THE PROJECT BIOLOGIST PRIOR TO IMPLEMENTATION AND MAY REQUIRE PLANT SUBSTITUTIONS AND SUPPLEMENTAL IRRIGATION

### 2.1 TOPSOIL - IMPORTED OR ONSITE SALVAGE

IMPORTED OR ONSITE SALVAGE TOPSOIL SHALL BE FRIABLE SURFACE SOIL FROM THE A HORIZON AS DETERMINED BY THE US AGRICULTURE SOIL CONSERVATION SERVICE SOIL SURVEY. TOPSOIL SHALL BE FREE FROM: MATERIALS TOXIC TO PLANT GROWTH NOXIOUS WEED SEEDS. RHIZOMES ROOTS SUBSOIL STONES AND OTHER DEBRIS ALL TOPSOIL SHALL PASS THROUGH A 1" SCREEN. TOPSOIL SHALL CONSIST OF A SANDY CLAY LOAM, SANDY LOAM, LOAM, CLAY LOAM SILTY LOAM SOIL. MAXIMUM PERCENTAGES ALLOWED IN THE SOIL IS 50% SAND AND/ OR 20% CLAY TOPSOIL SHALL BE AMENDED WITH COMPOST IF MORE ORGANIC CONTENT IS NEEDED AS DETERMINED BY THE PROJECT BIOLOGIST. CONTRACTOR SHALL PROVIDE THE PROJECT BIOLOGIST WITH A ONE POUND SAMPLE OF TOPSOIL FOR APPROVAL PRIOR TO DELIVERY TO SITE.

### 2.2 ORGANIC COMPOST

A WELL-DECOMPOSED HUMUS JIKE MATERIAL DERIVED FROM THE DECOMPOSITION OF GRASS CLIPPINGS LEAVES, BRANCHES, WOOD, AND OTHER ORGANIC MATERIALS. COMPOST SHALL BE PRODUCED AT A PERMITTED SOLID WASTE COMPOSTING FACILITY (HEALTH PERMIT. WOOF STORMWATER PERMIT, PSAPCA FACILITY, AND FOURPMENT REGISTRATION). COMPOST MUST MEET THE DEFINITION OF "COMPOSTED MATERIALS" IN WAC 173-350-220. THIS CODE IS AVAILABLE ON-LINE AT

W ECY WA GOV/PROGRAMS/SWEA/EACII ITIES//350 HTMI

### THE SOIL AMENDMENT MUST ALSO MEET THE FOLLOWING SPECIFICATION

3.7 PLANT INSTALLATION

VERTICALLY WITH A SHARP KNIFE

OR GREATER IN DIAMETER.

PLANTED IN STANDING WATER.

3.9 NGPA SIGNS & FENCE

1.0 MONITORING PROGRAM

3.10 IRRIGATION

3.8 STRAW AND WOOD MULCHING

INSTALL NOPA SIGNS AND FENCE PER PLAN

MONITORING NOTES & MAINTENANCE PLAN

INSTALLATION

AREA

PLANTING SHALL OCCUR ACCORDING TO PREVIOUSLY DEFINED

SCHEDULE. PLANTS SHALL BE INSTALLED IN COMPLIANCE WITH

IF CONTAINER STOCK APPEARS TO BE ROOTBOUND, SLASH ROOTS

DETAILS IN THE PLANS. SEE DETAILS PROVIDED IN THE PLANS.

ALONG OUTSIDE OF BALL IN FIVE (3) PLACES MINIMUM REFORE

PLANTING. SOAK DRIED ROOTBALLS IMMEDIATELY PRIOR TO AN

AFTER PLANTING. CLEANLY PRUNE BROKEN ROOTS ONE-HALF-INCH

PLANTS SHALL BE INSTALLED SO FINISH GRADE IS LEVEL WITH THE TOP

OF ROOT BALL. PLANTS SHALL BE BACKFILLED AND WATER-SETTLED. NO COMPACTION OF BACKFILL IS TO OCCUR AROUND PLANT. ALL

PLANTS SHALL BE WATERED THOROUGHLY IMMEDIATELY FOLLOWING

TICIPATED SITE CONDITIONS. NO TREES OR SHRUBS SHALL BE

PLANTING LOCATIONS INDICATED ON THE PLAN ARE BASED ON

WITHIN THE BUIEFER ENHANCEMENT AREA IMMEDIATELY AFTER

A TEMPORARY IRRIGATION SYSTEM SHALL BE INSTALLED BY THE

SEPTEMBER, OR LONGER IF HOT, DRY WEATHER PERSISTS.

THE PURPOSES OF THE MONITORING PROGRAM ARE: (1) TO

DOCUMENT PHYSICAL AND BIOLOGICAL CHARACTERISTICS OF THE MITIGATION AREA, AND (2) TO ENSURE THAT THE GOALS AND OBJECTIVES COMPLY WITH PERMIT SPECIFICATIONS.

MONITORING; AND (3) LONG-TERM MONITORING. THE "TIME-ZERO" OR

AND LINE CONCIMENTATION OF THE OUTCLINE CONCINNERS OF A DATA OF A

THE PROJECT BIOLOGIST WOULD BE PRESENT ON-SITE DURING THE VARIOUS STAGES OF CONSTRUCTION IN ORDER TO: (1) DEMARK THE LIMITS OF THE AREAS TO BE RESTORED; (2) REVIEW THE REMOVAL OF

HARD SURFACES AND THE DECOMPACTION OF THOSE AREAS (3) REVIEW AND APPROVE THE PLANT MATERIALS AND RECOMMEND THEIR

FINAL PLACEMENT BEFORE PLANTING; (4) ENSURE THAT CONSTRUCTION ACTIVITIES ARE CONDUCTED PER THE APPROVED

PLAN; AND (5) RESOLVE PROBLEMS THAT ARISE DURING CONSTRUCTION, THUS LESSENING PROBLEMS THAT MIGHT OCCUR LATER DURING THE LONG-TERM MONITORING PHASE.

THE MONITORING PROCESS WOULD CONSIST OF FIVE DISTINCT

BASELINE COMPOSITION, STRUCTURE, AND COVER ABUNDANCE

HASES: (1) CONSTRUCTION MONITORING; (2) COMPLIANCE

THE FOLLOWING SECTIONS DESCRIBE THE ELEMENTS OF AN EFFECTIVE MONITORING PROGRAM.

1.1 CONSTRUCTION MONITORING

CONTRACTOR. THE IRRIGATION SYSTEM SHALL PROVIDE AT LEAST 1

OF WATER PER WEEK TO THE PLANTED MITIGATION AREAS FOR TWO

YEARS. WATER WILL BE PROVIDED FROM MAY THROUGH THE END OF

THIS PLAN INCLUDES A SYSTEMATIC MONITORING PROGRAM OF THE RESTORED ENHANCED BUFFER TO EVALUATE THE SUCCESS OF THE MITGATION EFFORT. THE RESULTS OF THE MONITORING WILL BE USED TO DEVELOP ANY NEEDED MODIFICATIONS AND/OR ALTERATIONS OF THE SITE IN SUBSEQUENT YEARS.

COMPLETION OF PLANTING, BARK MULCH SHALL BE SPREAD EVENLY TO A DEPTH OF 3 INCHES WITHIN THE ENTIRETY OF THE PLANTED

- SCREEN SIZE (APPROX. PARTICLE SZE): 3/4-INCH MAXIMUM MATURITY: GREATER THAN 80%
- MATURITY MEASURE (C/N RATIO): 35:1 MAXIMUM ORGANIC MATTER CONTENT BY DRY WEIGHT: 35% TO 80%

### MEETS CONTAMINANT STANDARDS FOR GRADE A COMPOST

### 2.3 PLANT MATERIALS

ALL PLANT MATERIAL SHALL BE LOCALLY GROWN AND BE OF ACCEPTED SIZE STANDARDS AS SPECIFIED IN "AMERICAN STANDARD FOR NURSERY STOCK - 2004" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (ANSI 260.1-2004V). ROOTED PLANTS SHALL BE FIRST QUALITY, WELL-FOLIATED, WITH WELL-DEVELOPED ROOT SYSTEMS, AND NORMAL WELL-SHAPED TRUNKS, LIMBS, STEMS AND LEADS. THE PROJECT BIOLOGIST/INSPECTOR SHALL INSPECT FOR OUALITY CONFORMANCE, ALL ROOTED PLANT MATERIAL SHALL BE LABELED BY GENUS AND SPECIES. PLANTS DEEMED UNSUITAB SHALL BE REJECTED BEFORE OR AFTER DELIVERY. ALL PLANT MATERIAL SHALL BE FREE FROM DAMAGE, DISEASE, INSECTS, INSECT EGGS AND LARVAE. BARE ROOT MATERIAL MAY BE USED IF PLANT MATERIAL IS INSTALLED BETWEEN FEBRUARY-MARCH. CONTACT OJECT BIOLOGIST FOR PLANTING DETAILS FOR BARE ROOT MATERIAL

#### 2.5 BARK & STRAW MULCH

BARK MULCH SHALL CONSIST OF GROUND FIR OR HEMLOCK BARK OF UNIFORM COLOR, FREE FROM WEED, SEEDS, SAWDUST, AND SPLINTERS AND SHALL NOT CONTAIN SALTS, OR OTHER COMPONENTS DETRIMENTAL TO PLANT LIFE. SIZE RANGE OF MULCH SHALL BE FROM DE IRIMENTAL IO PLANT LIFE. SIZE RANGE OF MULCH SHALL BE FROM 1/2\* TO 1-1/4\* WITH MAXIMUM OF 20% PASSING A 1/2\* SCREEN. STRAW MULCH WILL CONSIST OF STRAW FREE FROM WEED SEEDS. MULCH MAY COME FROM EXISTING ON-SITE CONIFER TREES. DO NOT MULCH THE POPLAR TREES.

### 2.6 LARGE WOODY DEBRIS

LARGE WOODY DEBRIS SHALL COME FROM THE ON-SITE CONIFERS BEING FELLED. WOODY DEBRIS MUST BE AT LEAST 20 FEET LONG AND HAVE A CALIPER OF 18 INCHES. 3.0 EXECUTION

### 3.1 SILT FENCE & TREE PROTECTION INSTALLATION

INSTALLATION OF TREE PROTECTION AND A SILT FENCE CONSISTENT WITH BEST MANAGEMENT PRACTICES, AS REQUIRED BY THE JURISDICTION PRIOR TO REMOVAL OF ANY EXISTING NON-CONFORMING STRUCTURES, SITE GRADING, OR REMOVAL OF UNPERMITTED FILL WITHIN THE WETLAND BUFFER/RIPARIAN AREA. WOULD BE PROTECTED AS SHOWN ON THE TEMPORARY EROSION AND SEDIMENT CONTROL PLAN.

### 3.2 GARBAGE, DEBRIS, AND HARD SURFACE REMOVAL

REMOVE ALL GARBAGE AND OTHER DEBRIS FROM THE MITIGATION AREAS. REMOVE ALL HARD SURFACES SUCH AS GRAVEL, CONCRETE ASPHALT, AND TURF WITHIN THE PROJECT AREA. DISPOSE OF ALL DEBRIS OFF-SITE AT AN APPROVED CITY, COUNTY, OR OTHER WASTE DISPOSAL FACILITY

### 3.3 INVASIVE SPECIES REMOVAL

WALK MITIGATION SITE WITH THE PROJECT BIOLOGIST TO IDENTIFY HIMLEN AND A STEEPECIES REMOVAL. INVASIVE SPECIES INCLUDE HIMLEYAN BLACKBERRY, ENGLISH LAUREL, ENGLISH HOLLY, REED CANARYGRASS, AND OTHER INVASIVE SPECIES IDENTIFIED BY THE PROJECT BIOLOGIST. INVASIVE SPECIES WILL BE REMOVED BY GIUBBING OUT ROOT MASS. ALL NON-NATIVE, INVASIVE SPECIES INCLUDING ALL PLANT PARTS MUST BE REMOVED FROM PROJECT SITE AND DISPOSED AT A FACILITY THAT ACCEPTS YARD WASTE.

### 3.4 COMPOST AMENDMENT

3.6 PLANT STORAGE

DEBRIS

IN ALL DE-SODDED AREAS 3 INCHES OF COMPOST SHALL BE SPREAD AND WORKED INTO THE UPPER 12 INCHES OF THE SOIL 3.5 LARGE WOODY DEBRIS PLACEMENT

DI ANTS STORED LINDER TEMPORARY CONDITIONS BRIOR TO

INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR

FROM EXTREME WEATHER CONDITIONS BY INSULATING THE ROOTS.

FROM EXTREME WEATHER CONDITIONS BY INSULATING THE ROOTS, ROOT BALLS, OR CONTAINERS WITH SAWDUST, SOIL, COMPOST, BARK OR WOOD CHIPS, OR OTHER APPROVED MATERIAL AND SHALL BE KEP MOIST AT ALL TIMES PRIOR TO PLANTING. CUTTINGS SHALL

CONTINUALLY BE SHADED AND PROTECTED FROM WIND. CUTTINGS

TO BE STORED FOR LATER INSTALLATION SHALL BE BUNDLED. LAID HORIZONTALLY, AND COMPLETELY BURIED UNDER 6 INCHES OF

WITHIN 24 HOURS OF CUTTING SHALL BE SOAKED IN WATER FOR 24 HOURS PRIOR TO PLANTING. EMERGENT PLANTS SHALL BE STORED IN

STANDING WATER NOT HIGHER THAN THE CONTAINER

STALL DE PROTECTED PROM DRTING AT ALL TIMES AND STALL DE HEELED INTO MOIST SOLL OR OTHER INSULATING MATERIAL OR PLACED IN WATER IF NOT INSTALLED WITHIN 8 HOURS OF CUTTING. CUTTINGS

WATER MOIST SOIL OR PLACED IN COLD STORAGE AT A TEMPERATURE

OF 34°F AND 90 PERCENT HUMIDITY. CUTTINGS THAT ARE NOT PLANTED

SHALL BE PROTECTED FROM DRYING AT ALL TIMES AND SHALL BE

PLANTS STORED ON THE PROJECT SHALL BE PROTECTED AT ALL TIMES

#### 1.2 COMPLIANCE MONITORING PROJECT BIOLOGIST AND OWNER TO FIELD LOCATE LARGE WOODY

COMPLIANCE MONITORING CONSISTS OF EVALUATING TH RESTORATION AREAS IMMEDIATELY AFTER ALL FEATURES OF THE MITIGATION PLAN HAVE BEEN INSTALLED BY THE CONTRACTOR. THE OBJECTIVES WOULD BE TO CERTIFY THAT ALL DESIGN FEATURES, AS AGREED TO IN THE PLANTING PLAN. HAVE BEEN CORRECTLY AND AGREED TO IN THE PLANTING PLAN, HAVE BEEN CORRECTLY AND FULLY IMPLEMENTED, AND THAT ANY CHANGES MADE IN THE FIELD ARE CONSISTENT WITH THE INTENT OF THE DESIGN. EVALUATION OF THE PLANTING AREAS AFTER IMPLEMENTATION WOULD BE DONE BY THE BIOLOGIST USING EVALUATION STANDARDS AND CRITERIA, GOALS AND OBJECTIVES, AND PERFORMANCE STANDARDS ON PLANTING

THE COMPLIANCE MONITORING PHASE WOULD CONCLUDE WITH THE PREPARATION OF A BRIEF COMPLIANCE REPORT BY THE BIOLOGIST. THE REPORT WOULD VERIFY THAT ALL DESIGN FEATURES HAVE BEEN CORRECTLY, FULLY, AND SUCCESSFULLY INCORPORATED.

SUBSTANTIVE CHANGES MADE IN THE PLANTING PLANS WOULD BE NOTED IN THE COMPLIANCE REPORT AND ON THE DRAWINGS FOR USE DURING THE LONG-TERM MONITORING PHASE. DOCUMENTATION OF PLAN CHANGES SHOULD INCLUDE WHAT WAS DONE, WHERE, WHY, AT WHOSE REQUEST, AND THE RESULT OF THE CHANGE. LOCATIONS OF MONITORING STATIONS ESTABLISHED FOR THE COMPLIANCE MONITORING WOULD BE IDENTIFIED ON THE AS-BUILT PLANS.

THE PLANTING PLANS, WITH THE COMPLIANCE REPORT, WOLLD DOCUMENT "AS-BUILT" CONDITIONS AT THE TIME OF CONSTRUCTION COMPLIANCE. A QUANTITATIVE ASSESSMENT OF THE PLANTS ESTABLISHED IN THE BUFFER RESTORATION AREA WOULD BE RECORDED AT REPRESENTATIVE SAMPLE PLOTS FOR BASELINE DATA THIS INFORMATION WOULD BE USED TO DOCUMENT "TIME-ZERO" CONDITIONS FROM WHICH THE LONG-TERM MONITORING PERIOD WOULD BEGIN. THE COMPLIANCE REPORT AND AS-BUILT DRAWINGS WOULD BE SUBMITTED TO THE CITY OF Marysville.

### 1.3 LONG-TERM MONITORING

ONG-TERM MONITORING WOULD BE CONDUCTED OVER FIVE CONSTERM MONITORING WOULD BE CONDUCTED OVER FIVE GROWING SEASONS FOLLOWING APPROVAL OF THE COMPLIANCE REPORT AND AS-BUILT PLAN BY THE CITY. LONG-TERM MONITORING WOULD EVALUATE THE ESTABLISHMENT AND MAINTENANCE OF THE PLANT COMMUNITIES IN THE RESTORED WETLAND AND BUFFER TO MINE IF THE GOALS AND OBJECTIVES OF THE MITIGATION PLAN HAVE BEEN MET

14 OPTIONS FOR MONITORING WORK - THE APPLICANT MAY CHOOSE ONE OF THE FOLLOWING METHODS FOR WHO PERFORMS TH MONITORING WORK:

a. CITY DOES WORK - IF THE CITY WILL OVERSEE THE MAINTENANCE AND MEMORY INFOLICITY FEAST SCIENCILITANT. THE MONITORING FEE WILL BE BASED ON AN ACTUAL COST ESTIMATE OF THE WORK. THE APPLICANT SHALL SUBMIT ACKIN PREPAYMENT FOR ALL WORK TO THE CITY PRIOR TO ISSUANCE OF THE DEVELOPMENT PERMIT.

### APPLICANT'S CONSULTANT DOES WORI

IF THE CITY WILL NOT PERFORM THE MONITORING. THE APPLICANT SHALL SUBMIT A SIGNED CONTRACT TO FUND A QUALIFIED CITICAL AREA PROFESSIONAL APPROVED DWITRACT TO FUND A QUALIFIED CITICAL AREA PROFESSIONAL, APPROVED BY THE CITY, TO MONITOR THE MINITENANCE AND PERFORM THE MONITORING OVER THE LIFE OF THE PROFEMANCE SECURITY UNDER KZC 90.165; AND

IN ADDITION. THE APPLICANT SHALL SUBMIT A CASH PREPAYMENT PRIOR TO FINAL INSPECTION OF THE DEVELOPMENT PERMIT FOR THE COST OF THE CITY TO DO PEER REVIEW OF THE MONITORING REPORTS

PLANT SPECIES WOULD BE IDENTIFIED AND PLANT COUNTS WOULD BE MADE DURING THE EACH YEAR OF THE LONG-TERM MON ORDER TO DOCUMENT THE PERCENT SURVIVAL OF EACH PLANTED SPECIES. PLANT IDENTIFICATIONS WOULD BE MADE ACCORDING TO STANDARD TAXONOMIC PROCEDURES DESCRIBED IN HITCHCOCK AND STANDARD TAXONOMIC PROCEDURES DESCRIEE DI HITCHCOCK AND CONDUCTOR DI WITH NORMACHATURE, SE UPOTED BY THE USAR AND KARTESZ 2009) SIGNS OF PLANTING STRESS OR DAMAGE PRESENCE OF INVASIVE SPECESA, SW YELL AS SIGNS OF VIGOR AND RATES OF COLONIZATION BY OTHER PLANTS (I.E., IN BARE SOL AREAS) WOLD BE DOCUMENTED DIRING EACH YEAR OF THE LONG-TEM

PHOTOS WOLLD BE TAKEN ANNUALLY TO PROVINE PHYSICAL DOCUMENTATION OF THE CONDITION OF THE MITIGATION AREAS. DOCUMENTATION OF THE CONDITION OF THE MITIGATION AREAS. DURING THE COMPLIANCE MONITORING SITE VISIT AND EACH THERE THEREAFTER OF THE MONITORING PERIOD FROM THE ESTABLISHED LOCATION POINTS.

1.4 MONITORING AND REPORTING SCHEDULE AND CONTENTS FORMAL MONITORING OF THE RESTORED BUFFER WOULD OCCUR AFTER THE SEASON'S GROWTH IS VIRTUALLY COMPLETE (RECOMMENDED DURING AUGUST OR SEPTEMBER). IN ADD SPRING SITE CHECKS WOULD BE CONDUCTED DURING EACH YEAR OF THE FIVE-YEAR LONG-TERM MONITORING PERIOD TO ASSESS SITE PROGRESS AND TO DETERMINE WHETHER SITE MAINTENANCE IS

MONITORING REPORTS WOULD BE PREPARED FOLLOWING THE COMPLETION OF THE GROWING SEASON OF EACH YEAR OF THE FUE-YEAR LONG-TERM MONITORING PERIOD FOR SUBMITTAL TO THE CITY OF Marysville. THE LONG-TERM MONITORING PERIOD WILL COMMENCE FOLLOWING ACCEPTANCE OF THE COMPLIANCE REPORT AND "AS-BUILT" DRAWINGS BY THE CITY OF Marysville.

MONITORING REPORTS WOULD BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF Manysville AS SOON AS POSSIBLE AFTER THE MONITORING HAS BEEN COMPLETED, WITH A TARGET DATE OF DECEMBER 31 OF EACH MONITORING YEAR. THE REPORT WOULD DOCUMENT CONDITIONS WITHIN THE RESTORED AREAS I RECOMMENDATIONS FOR CORRECTING ANY PROBLEMS REAS AND MAKE

### 2.0 CONTINGENCY PLAN

CONTINGENCY PLANS ARE NEEDED IF POST-MITIGATION MONITORING SHOWS THAT OBJECTIVES AND PERFORMANCE STANDARDS HAVE NOT BEEN MET. IT SHOULD BE NOTED, HOWEVER, THAT IT IS NOT POSSIBLE TO DEVELOP A DETAILED CONTINGENCY PLAN UNTIL THE SPECIFIC PROBLEMS THAT NEED TO BE ADDRESSED ARE KNOWN. IT WOULD BE UNPRODUCTIVE TO TRY TO ANTICIPATE ALL POSSIBLE PROBLEMS AND THEIR SOLUTIONS AT THIS TIME.

COMMON PROBLEMS, BOTH HUMAN AND NATURAL. THAT MIGHT ARISE CAN BE IDENTI ED AND GENERAL RECOMMENDATIONS FOR REMED PROPOSED. FOR EXAMPLE, AFTER THE SECOND YEAR, PLANT COMMUNITIES WITHIN THE CREATED, RESTORED AND ENHANCED AREAS MAY NOT BE ESTABLISHED AT ACCEPTABLE LEVELS. IT MAY BE NECESSARY TO REPLANT WITH NEW OR DIFFERENT STOCK, PROVIDE ADDITIONAL WATERING OR IRRIGATION DURING CRITICAL SEASONS, OR AUGMENT THE SOIL

THE CONTINGENCY PLAN MAY REQUIRE EXTENSION OF THE MONITORING PHASE OF THE PROJECT, ESPECIALLY IF MAJOR CHANGES IN THE PLAN ARE REQUIRED. IF, AT THE END OF THE ONG-TERM MONITORING PERIOD. PERFORMANCE STANDARDS FOR YEAR FIVE HAVE NOT BEEN MET. IDENTIFIED PROBLEMS WILL BE ADDRESSED, AND ADDITIONAL MONITORING WILL BE CONDUCTED DURING AN ADDITIONAL MONITORING YEAR(S) AS RECOMMENDED BY THE PROJECT BIOLOGIST AND APPROVED BY THE CITY OF MARYSVILLE

### 3.0 MAINTENANCE

### 3.1 IRRIGATION

3.1 IRRIGATION SUPPLEMENTAL WATER WILL BE PROVIDED TO ALL TREE AND SHRUB SUPPLEMENTAL WATER WILL BE PROVIDED TO ALL TREE AND SHRUB PLANTINGS DURING THE FIRST TWO GROWING SEASONS FOLLOWING SYSTEM MAY BE VIEWD. IRRIGATION WILL OCCUR FROM UNIXE 1 THROUGH OCTOBERS 30 OR OTHER PREMODS OF HOT, DRY WEATHER AND WILL DEULY REPORT ON THE PREMODS OF HOT, DRY WEATHER AND WILL DEULY REPORT ON THE REPORT OF THE REPORT OF THE THROUGH OCTOBERS 30 OR OTHER PREMODS OF HOT, DRY WEATHER AND WILL DEULY REPORT ON THE REPORT OF THE REPORT OF THE WILL MANUAL WATERING REQUIREMENTS WILL BE 10 TO S GALLONS OF WATER FOR SMALL SHRUBS AND 3 TO 5 GALLONS PER WEEK FOR SAPLING TREES AND LARGE SHRUBS. THESE MINIMUM REQUIREMENTS ARE GUIDELINES THAT MAY VARY DEPENDING ON PLANT LOCATION, EXPOSURE, SOIL CONDITION, AND PRESENCE OF EXISTING VEGETATION.

### 3.2 SITE MAINTENANCE

3.2 SITE MAINTENANCE THE ENHANCED BUFFER IS DESIGNED TO BE SELF-SUSTAINING. TO ENSURE THE SUCCESS OF THE PLANTINGS, ADDITIONAL REPLANTING AND CONTROL OF UNDESIRABLE PLANT SPECIES MAY BE NECESSARY AFTER INITIAL INSTALLATION. THIS MAINTENANCE PLAN INCLUDES ALL ACTIONS REQUIRED TO MAINTAIN PLANTS FREE OF INSECTS AND DISEASE, CONTROL COMPETITION WITH GRASSES AND WEEDS, AND TO WITHIN PERFORMANCE STANDARDS SPECIFIED ON PREVIOUS SHEET

LIPON COMPLETION OF THE REMOVAL OF ALL NON-CONFORMING STRUCTURES AND UNPERMITTED FILL AND INSTALLATION OF THE PLANTINGS, MULCH AND ALL OTHER ITEMS SPECIFIED BY THE BUFFER ENHANCEMENT PLAN, ALL SURPLUS MATERIAL, EQUIPMENT, AND DEBRIS SHALL BE REMOVED FROM THE MITIGATION SITE. ALL SILT FENCES WILL BE REMOVED FROM WITHIN THE ENHANCED BUFFER WHEN THE ADJACENT HERBACEOUS VEGETATION IS ONE FOOT IN HEIGHT OR AS APPROVED BY THE PROJECT BIOLOGIST AND OR THE CITY OF Marysville

THE SITE MAINTENANCE PROGRAM WOULD COMMENCE UPON APPROVAL OF THE COMPLIANCE REPORT AND AS-BUILT PLAN BY THE CITY. THE SITE WOULD BE REGULARLY MAINTAINED FOR THE DURATION OF THE LONG-TERM MONITORING PERIOD. THE PROJECT BIOLOGIST WOULD INSPECT THE SITE DURING SPRING (MARCH-APRIL) BIOLOGIST WOULD INSPECT THE SITE DURING SHARING (MARCH-APARD) DRING EACH YEAR OF THE LONG-TERM MONTORING PERIOD TO IDENTIFY ANY DEVELOPING PROBLEMS WITHIN THE MITIGATION SITE. TEMS TO BE EVALUATED WITHIN THE RESTORATION AREAS INCLUDE IRRIGATION SYSTEM OPERABILITY (IF AMPLICABLE), PRESENCE OF INVSINE SPECIES, PLANT HEALTH, ANIMAL DAVAGET TO PLANTINGS,

THE PROJECT BIOLOGIST WOULD SUBMIT A WRITTEN SUMMARY OF HISHER FINDINGS ALONG WITH MAINTENANCE RECOMMENDATIONS THE PROJECT PROPONENT WITHIN 10 DAYS AFTER COMPLETION OF HISHER INSPECTION. MAINTENANCE RECOMMENDATIONS WOULD BI MPLEMENTED BY THE PROJECT PROPONENT WITHIN 30 DAYS OF RECEIPT FROM THE PROJECT PROPONENT WITHIN 30 DAYS OF

SIVE SPECIES WOULD BE CONTROLLED BY METHODS THAT DO INVASIVE SPECIES WOULD BE CONTROLLED PY METHODS THAT DO NOT COMPROMENT ENTER STATUBIES VECETATION OF THE REST OF NOT COMPROMENT ENTER STATUBIES VECETATION OF THE REST OF THE PROJECT BIOLOGIST, REMOVIAL OF INVASIVE SPECIES WILL BE DONES PY HAND, VITIH HAND PULLING OF ALL WEEDS WITIHIN THE DRIP RING OF ANY INSTALLED SHRUB OR TREE. NO WEED-WHIPPING WITH MECHANIZED LINE TIMMERS WILL BE ALLOWED BETWEEN WOODY PLANTS WITHIN CLUSTER OR CLUMPED PLANTINGS. NO PERSICIDES ON HERRICIDES SAULD BE LOSCO WITHIN THE SUPPERSICIDES PERMISSION FROM THE CITY OF Marysville

### 3.3 MAINTENANCE WORK GUARANTEE

3.3 MAINTENANCE WORK GUARANTEE PRIOR TO FINAL INSPECTION OF THE VEGETATION AND ANY OTHER MITIGATING MEASURES REQUIRED IN THIS CHAPTER, THE APPLICAN SHALL SUBMIT A GIGNED CONTRACT WITH A LANDSCAPE MAINTENAN COMPANY TO MAINTAIN THE INSTALLED IMPROVEMENTS OVER THE PERIOD OF THE MONITORING PROGRAM THAT INCLUDES THE EQUIRED MAINTENANCE TASKS AND SCHEDULE, EXCEPT FOR THE

### 4.0 PROJECT ACCEPTANCE

AFTER COMPLETION OF THE FIVE-YEAR MONITORING PERIOD AND CONFIRMATION BY THE CITY OF Marysville THAT THE BUFFER ENHANCEMENT HAS SUCCESSFULLY MET THE PERFORMANCE ENTANCEMENT HAS SUCCESSFULLT MET THE PERFORMANCE STANDARDS, THE CITY OF Marysville SHALL PROVIDE WRITTEN ACCEPTANCE AND APPROVAL OF THE BUFFER ENHANCEMENT AND RELEASE ALL BONDS IN PLACE AS GUARANTEE OF MITIGATION SITE CONSTRUCTION AND PERFORMANCE.

