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Ambers Grove
74th Ave NE, Arlington, WA 98223
PLN: 22-____
December 2022

Construction Stormwater Pollution Prevention Plan for Ambers Grove

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Section 3 - Stormwater Pollution Prevention Plan

3.1 MR-2 - Construction Stormwater Pollution Prevention

3.1.1 Project Data Summary:

Existing and proposed project areas are presented for determination of stormwater management requirements based on prescribed thresholds as outlined on the City of Arlington Municipal Code.

Project Location Data:		
Applicant	Lot 19, LLC.	
Site Owner	Lot 19, LLC.	
Project Name	Ambers Grove	
Project T.S.R. Location	Section 14, Township 31 N, Range 5 W	
Project Address	74th Ave NE, Arlington, WA 98223	
Parcel ID(s)	310514001-018-00	
Watershed	Snohomish	
WRIA number	7	
Basin	Quilceda Creek	
Sub-Basin	Middle Fork Quilceda Creek	
Disturbance Area Data		
Total Site Area	625,560 *sf*	(14.36 *ac*)
Existing Impervious Area	~ *sf*	(~ *ac*)
Total Disturbance Area	315,976 *sf*	(7.25 *ac*)
Total Proposed Impervious Area	173,869 *sf*	(3.99 *ac*)

3.2 Introduction:

This document is part of the Stormwater Site Plan for the Lot 19, LLC. Permit Application. The Stormwater Pollution Prevention Plan (SWPPP) fulfills Minimum Requirement 2 of the drainage requirement as outlined in the Stormwater Management Manual for Western Washington (SMMWW). It has been prepared for NPDES stormwater permit requirements for site improvements on Lot 19, LLC. Parcel No. 310514001-018-00 located at 74th Ave NE, Arlington, WA 98223.

Construction Activities

The SWPPP describes proposed construction activities, all erosion and sediment control measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project.

The objective of the SWPPP is to:

a) Implement Best Management Practices (BMPs) to prevent erosion and sedimentation, and to identify, reduce, eliminate or prevent stormwater contamination and water pollution from construction activity.
b) Prevent violations of surface water quality, ground water quality, or sediment management standards.
c) Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of the receiving water by controlling peak flow rates and volumes of stormwater runoff at the Permittee's outfalls and downstream of the outfalls.

There are thirteen elements presented in the 2019 SMMWW Volume II, Chapter 3. Each element is addressed in this document for the project site and was prepared per the requirements set forth in the current 2019 SMMWW.

NOTES:

1. BMPs referred to in this document are those specified in the 2019 SMMWW. A copy of Volume 2 of the 2019 SMMWW should be acquired and made available at the construction site.
2. NOTE: Siting, sizing, materials, and other specifications for all BMPs offered in this SWPPP are presented in the Stormwater Site Plan Set as the 'SWPPP PLAN" sheet.

3.2.1 Element 1: Preserve Vegetation/Mark Clearing Limits

The guideline is to minimize removal of existing trees and disturbance and compaction of native soils, except as needed for building purposes. The goal is to retain any duff layer, native top soil, and natural vegetation in an undisturbed state to the maximum degree practicable.

Relevant BMPs:

- BMP C101: Preserving natural vegetation

3.2.2 Element 2: Establish Construction Access

Construction vehicle ingress and egress shall be limited to one route if possible. A stabilized construction entrance or other equivalent BMP shall be installed to prevent sediment transport onto roads. The location is shown on the SWPPP plan.

It is recommended that early on, the entire access road be stabilized as it is developed. The proposed parking and development area is a logical location for equipment parking, material storage/transfer, and will require regular inspection and maintenance.

Streets shall be cleaned at the end of each day during dry weather and more frequently during wet weather. Street washing is only allowed after sediment is removed by shoveling or pick-up sweeping and transported to a controlled disposal area. Street wash wastewater shall be controlled by pumping it back on site or otherwise preventing its discharge into systems tributary to the waters of the state or waters that would otherwise require enhanced treatment. Street washing may not be needed with an adequate construction entrance length.

Relevant BMPs:

- BMP C105: Stabilized Construction Entrance
- BMP C107: Construction Parking Area Stabilization

3.2.3 Element 3: Control Flow Rates

The purpose of element 3 is to protect properties and waterways downstream to the project from soil erosion due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site. Stormwater retention or detention facilities can be needed to comply with this requirement, and are required to be constructed as one of the first steps in grading the site.

In the primary development area, the temporary sediment traps as specified on the stormwater management plan shall serve to capture construction stormwater via interceptor trenches. All stormwater should be routed to these facilities prior to discharge to the downstream. Once the site has been stabilized, all collected sediments are to be removed and the surfaces restored.

Relevant BMPs:

- BMP C207: Check Dams
- BMP C234: Vegetated Strip
- BMP C240: Sediment Trap

3.2.4 Element 4: Install Sediment Controls

Remove sediment from construction site runoff by using appropriate sediment removal BMPs. Runoff from fully stabilized areas may be discharged without a sediment removal BMP.

It is best to avoid sediment generation in the first place, but methods must be employed to treat sediment laden surface runoff when it occurs.

In the primary development area, the bio-swale as specified in the stormwater management plan shall be avoided as a sediment trap. Brush barriers of alternative forms of capture shall be employed in the infiltration zones of the site. The facility is to be excavated to within one foot of depth of the proposed design. Once the site has been stabilized, all collected sediments are to be removed and the facility completed to the design specification.

Relevant BMPs:

- BMP C230: Straw Bale Barrier
- BMP C231: Brush Barrier
- BMP C233: Silt Fence (or preserve natural vegetation – see Element 1)
- BMP C234: Vegetated Strip
- BMP C235: Straw Wattles
- BMP C240: Sediment Trap

3.2.5 Element 5: Stabilize Soils

Exposed and unworked soils and soil stockpiles shall be stabilized. Soil stockpiles shall be located away from storm drain inlets, drainage channels and other waters.

Mandatory: The time period of soil exposure allowed depends on the season. No soil shall remain exposed and unworked for more than seven days during the dry season, May 1 through September 30, or two days during the wet season, October 1 through April 30, unless the SWPPP places other restrictions on the project.

Soil piles should be covered until the soil is either used or removed. Plastic covering will likely be the best option. Backfill exploration holes or any deeper excavated areas as soon as possible and rough grade the site. This will eliminate large soil mounds, which are highly erodible, and prepares the site for temporary cover, to further reduce erosion potential

Remove excess soil from the site as soon as possible after backfilling. This will eliminate any sediment loss from surplus fill.

Relevant BMPs:

- BMP C120: Temporary and Permanent Seeding
- BMP C121: Mulching
- BMP C123: Plastic Covering
- BMP C124: Sodding
- BMP C125: Topsoiling (to be used for soil stabilization only, not soil amendment)
- BMP C140: Dust Control

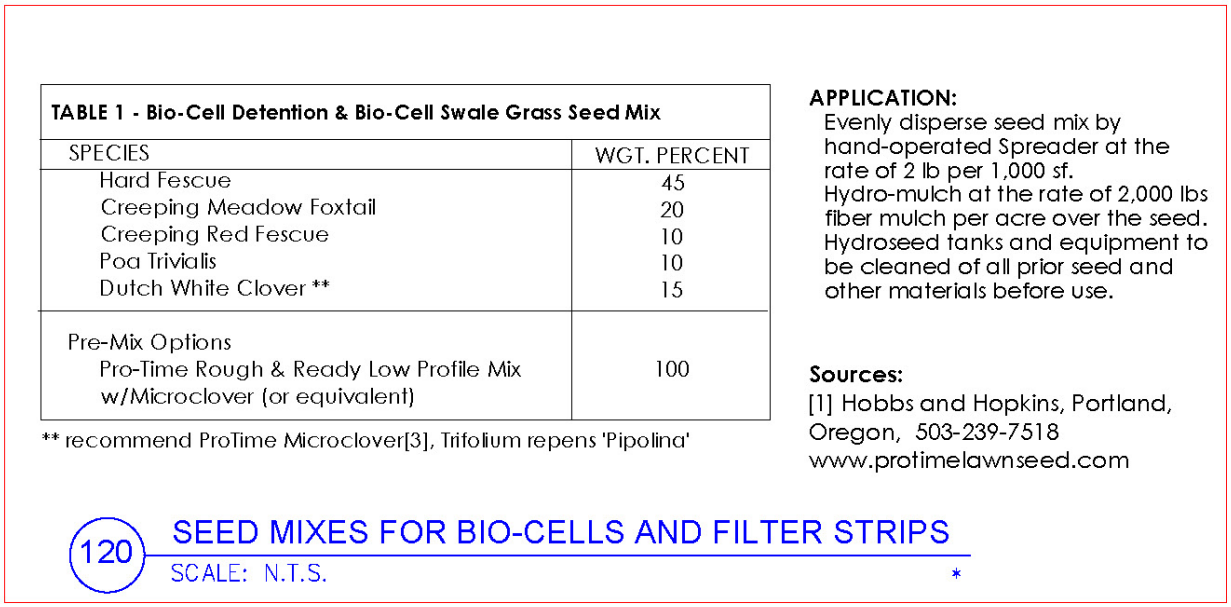

TABLE 1 - Bio-Cell Detention & Bio-Cell Swale Grass Seed Mix

SPECIES	WGT. PERCENT
Hard Fescue	45
Creeping Meadow Foxtail	20
Creeping Red Fescue	10
Poa Trivialis	10
Dutch White Clover **	15
Pre-Mix Options Pro-Time Rough & Ready Low Profile Mix w/Microclover (or equivalent)	100

** recommend ProTime Microclover[3], Trifolium repens 'Pipolina'

APPLICATION:
Evenly disperse seed mix by hand-operated Spreader at the rate of 2 lb per 1,000 sf.
Hydro-mulch at the rate of 2,000 lbs fiber mulch per acre over the seed.
Hydroseed tanks and equipment to be cleaned of all prior seed and other materials before use.

Sources:
[1] Hobbs and Hopkins, Portland, Oregon, 503-239-7518
www.protimelawnseed.com

120 SEED MIXES FOR BIO-CELLS AND FILTER STRIPS
SCALE: N.T.S.

Figure 1 - Seed Mixes

3.2.6 Element 6: Protect Slopes

Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion and comply with the SWPPP's applicable critical area regulations. Cut and fill slopes shall be protected from erosive flows and concentrated flows until permanent cover and drainage conveyance systems are in place. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.

While there are no cut and fill slopes of significant size to be concerned about erosion damage, the following measure should be applied if such protection is warranted.

Relevant BMPs:

- BMP C123: Plastic Covering
- BMP C130: Surface Roughening
- BMP C200: Interceptor Dike and Swale
- BMP C201: Grass-Lined Channels
- BMP C206: Level Spreader
- BMP C207: Check Dams
- BMP C208: Triangular Silt Dike (Geotextile-Encased Check Dam)

3.2.7 Element 7: Protect Permanent Drain Inlets.

This element provides guidance and means to protect permanent storm drain inlets from sediment and silt-laden water. Permanent storm drain inlets operable on the site during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment. Inlet protection devices shall be cleaned or removed and replaced when

sediment has filled one-third of the available storage or as specified by the product manufacturer. They may be removed once the site is stabilized.

Relevant BMPs:

- none

3.2.8 Element 8: Stabilize Channels and Outlets

This element provides guidance and means for stabilization of temporary and permanent (both proposed and pre-existing) conveyance systems for the prevention of erosion during and after construction. Stabilization includes armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream reaches and outlets of all conveyance systems.

The site will infiltrate a majority of stormwater during the construction phase. The sediment trap will have an installed Emergency Overflow routed to the downstream.

Relevant BMPs:

- None

3.2.9 Element 9: Control Pollutants

Appropriate pollution source control measures shall be implemented as applicable in areas of: construction equipment maintenance or fueling; handling or storage of waste materials, construction debris, fertilizers, chemicals; and other activities that may contribute pollutants to stormwater.

The following specific requirements apply.

- Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment.
- On-site fueling tanks shall include secondary containment.
- Maintenance, fueling and repair of heavy equipment and vehicles shall be conducted using spill prevention and control measures consistent with the SMMWW.
- Contaminated surfaces shall be cleaned immediately following any spill incident.
- Application of fertilizers and pesticides shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' label requirements for application rates and procedures shall be followed
- BMPs shall be used to prevent contamination of stormwater runoff by pH modifying sources. These sources include, but are not limited to, bulk cement, cement kiln dust, fly ash, new concrete washing approved treatment, curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters.

Relevant BMPs:

- BMP C151: Concrete Handling
- BMP C152: Sawcutting and Surfacing Pollution Prevention
- BMP C153: Material Storage, Delivery, and Containment

Also see SMMWW Volume II for additional BMPs that may apply.

3.2.10 Element 10: Control Dewatering

Turbid or contaminated dewatering water shall be handled separately from stormwater, and shall be collected for off-site disposal in a legal manner, or discharged to a sanitary sewer contingent on local sewer district approval. Uncontaminated or clean water from dewatering systems for trenches, vaults and foundations may be disposed by on-site infiltration or use of a catch basin insert or with outfall to a ditch or swale for small volumes of dewatering water.

The need for dewatering is not anticipated for this project.

Relevant BMPs:

- None

3.2.11 Element 11: Maintain Best Management Practices.

The Best Management Practices (BMPs) are activities, protective measures, and maintenance procedures that, when used singly or in combination, prevent or reduce the impacts of erosion and sediment transport.

All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed by the project manager/property owner/contractor to assure continued performance of their intended function. Sediment control BMPs shall be inspected weekly or after a runoff-producing storm event during the dry season and daily during the wet season.

All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal of BMPs or vegetation shall be permanently stabilized.

3.2.12 Element 12: Manage the Project.

The SWPPP shall be fully implemented at all times and modified whenever there is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to waters of the state.

The following principles should be forefront in the management and application of erosion and sediment control BMPs

- Emphasize erosion control rather than sediment control.
- Minimize the extent and duration of the area exposed.
- Trend toward methods that have low runoff velocities.

Quantities of erosion prevention and sediment control materials shall be kept on the project site at all times to be used for emergency situations such as unexpected heavy summer rains. Having these materials on-site reduces the time needed to implement BMPs when inspections indicate that existing BMPs are not meeting the SWPPP requirements

- BMP C150: Materials on Hand

Phasing of Construction - Development projects shall be phased where feasible in order to prevent, to the maximum extent practicable, the transport of sediment from the development site during construction. Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities for any phase. Clearing and grading activities shall minimize removal of existing trees and minimizing disturbance/compaction of native soils except as needed for building purposes. If clearing and grading are proposed between October 1 and April 30, silt-laden runoff will be prevented from leaving the construction site by application of erosion and sediment control measures.

3.2.13 Element 13: Protect On-site Stormwater Management BMPs for Runoff from Roofs and other Hard Surface

On-site Stormwater Management BMPs shall be protected at all times during the construction process. This may mean that stormwater management BMPs will be installed towards the end of the construction process to avoid siltation and compaction. BMPs include but are not limited to: full dispersion, roof downspout full infiltration or dispersion systems, perforated stubout connections, rain gardens, bioretention systems, permeable pavement, sheetflow dispersion, and concentrated flow dispersion. Additional requirements for on-site stormwater management BMPs are included in their respective sections of Volume V.

In particular, BMP T7.30 Bioretention Cells, Swales, and Planter Boxes in Section 7.3, Vol. V of the 2019 SMMWW. Areas to be used for Bio-retention shall be protected during construction and after construction. These areas are to be protected from compaction, siltation, and degradation.

Relevant BMPs:

- BMP C102: Buffer Zone
- BMP C103: High Visibility Fence
- BMP C201: Grass-lined Channels
- BMP C208: Triangular Silt Dike
- BMP C231: Brush Barrier
- BMP C233: Silt Fence
- BMP C234: Vegetated Strip

3.3 Sequence of BMP Implementation

Implementation and sequence of Erosion Control BMPs is presented along with construction sequence:

1) Arrange and attend a pre-construction meeting with City staff, the on-site erosion control specialist, the design engineer, and owner.
2) Delineate or mark the following areas and features on the site:
   a) Clearing limits;
   b) Critical areas and their buffers;
   c) Erosion or landslide hazard areas and their setbacks;
   d) Easements;
   e) Required landscaping, and tree retention and replacement areas;
   f) Other areas on the site required preservation or protection;
3) Install construction zone road signs.
4) Grade and install construction entrance(s) and provide parking area stabilization.
5) Establish areas for storage and handling of polluted materials at which pollution source
6) Control BMPs will be implemented. These include:
   a) Placement of silt fence, straw wattles, etc.;
   b) Excavation of temporary sediment pond;
   c) Install temporary sedimentation measures;
7) Carefully remove trees and vegetative materials from areas to be graded. Grind clearing debris to create a fine-grade chip. Save clean chips for trails and put “sawdust” and finer debris back over areas to be stripped of organic surface soils.
8) Carefully strip areas to be graded of only the upper organic surface soils being cautious not to mix weathered mineral soils with organic surface soils. In un-forested areas the chip cover may be disked into the surface soils before stripping. Stockpile and protect these organic soils as BMP T5.13 Soils for use in yards and other drainage features.
9) Complete mass grading. Reconstruct sediment-trapping measures as grading progresses. Relocate surface water controls and erosion control measures, or install new measures as site conditions change so as to maintain compliance with City standards.
10) Install Water Main to onsite roads.
11) As construction proceeds, install appropriate sediment controls. Grade and stabilize roads and interceptor swales in conjunction with the clearing and grading activity.
12) Implement stabilization measures for disturbed areas, slopes, and material stockpiles.
13) Establish stream protection measures and install culvert and culvert crossing wall construction.
14) Locate and install dispersion system trenches. Plug outlets of roadside catch basins having cross county pipes leading to trenches. Prop solid lids to allow for flow exit and surround with wattles or vegetative berms. Clean pipes and CBs after paving and site is stabilized before unplugging the conveyance to the level spreaders.
15) Seed and mulch areas to be vegetated using low growing seed mixes as specified.
16) Maintain BMPs until final site stabilization.
17) Final grade, construct and pave roadways. Ensure that the permanent drainage system is complete and functional.
18) Remove any temporary sediment controls when permanent drainage is complete and erosion measures are in place and functional. Add topsoil to roadside flow control BMPs.

3.4 BMP Specifications and Details

Reproduction pages of the Construction Stormwater Pollution Prevention BMPs as taken from the 2019 DOE SWMM as noted below, follow this page. This is a recommended list and not all listed measures are necessarily required. The project's CECSL shall determine which measures are applicable. Sheet numbers shown are those from the manual.

List of BMPs referenced by this document:

- C101 Preserving Natural Vegetation
- C105 Stabilized Construction Entrance
- C107 Construction Road/Parking Area Stabilization
- C120 Temporary & Permanent Seeding
- C121 Mulching
- C122 Nets and Blankets
- C123 Plastic Covering
- C140 Dust Control
- C150 Materials on Hand
- C151 Concrete Handling
- C153 Material Delivery, Storage and Containment
- C160 Certified Erosion & Sediment Control Lead
- C162 Scheduling
- C200 Interceptor Dike and Swale
- C206 Level Spreader
- C207 Check Dam
- C208 Triangular Silt Dike
- C209 Outlet Protection
- C220 Storm Drain Inlet Protection
- C233 Silt Fence
- C234 Vegetated Strip
- C235 Straw Wattles
- C240 Sediment Trap