

Myron Gemmer & Brad Gemmer  
Lakewood Heights PRD  
1125 & 1507 172nd Street NE, Marysville, Washington 98271  
PN PA22-007  
1<sup>st</sup> Submittal: February 2022  
2<sup>nd</sup> Submittal: July 2022

**S t o r m w a t e r P o l l u t i o n  
P r e v e n t i o n P l a n  
f o r  
L a k e w o o d H e i g h t s P R D**

Prepared by:  
Mier Zhou, E.I.T.  
Email: Mier@landtechway.com  
360-652-9727



Reviewed by:  
Tyler Foster, P.E.  
Email: Tyler@landtechway.com  
360-652-9727

*07/12/2022*

# Contents

Stormwater Pollution Prevention Plan .....	2
Project Data Summary: .....	2
Introduction: .....	3
Element 1: Preserve Vegetation/Mark Clearing Limits.....	4
Element 2: Establish Construction Access .....	4
Element 3: Control Flow Rates.....	4
Element 4: Install Sediment Controls.....	5
Element 5: Stabilize Soils .....	5
Element 6: Protect Slopes.....	6
Element 7: Protect Permanent Drain Inlets.....	6
Element 8: Stabilize Channels and Outlets .....	6
Element 9: Control Pollutants.....	6
Element 10: Control Dewatering .....	7
Element 11: Maintain Best Management Practices. ....	7
Element 12: Manage the Project. ....	7
Element 13: Protect On-site Stormwater Management BMPs for Runoff from Roofs and other Hard Surface .....	8
Sequence of BMP Implementation.....	9

# Stormwater Pollution Prevention Plan

## Project Data Summary:

Existing and proposed project areas are presented for determination of stormwater management requirements. Requirements are based on prescribed thresholds as outlined on the Snohomish County Code (SCC) 30.63A.300.

<b>Project Data:</b>			
Applicant	Robinett Brothers, LLC		
Site Owner	Myron Gemmer & Brad Gemmer		
Project Name	Lakewood Heights PRD		
Project T.S.R. Location	Twn-31 N, Rng-5 E, Sec-19, Qtr-SE		
Project Address	1125 & 1507 172nd Street NE, Marysville, Washington 98271		
<b>Existing Conditions:</b>			
Total Site Area	1,298,041	sf	(29.80 ac)
Existing Impervious Area	0	sf	(0.00 ac) 0.0%
<b>Proposed Activity:</b>			
Proposed Activity	PRD Subdivision		
Proposed Clearing Area	1,194,930	sf	(27.43 ac)
Proposed Grading Area	1,194,930	sf	(27.43 ac)
Proposed New NPGIS	384,052	sf	(8.82 ac)
Proposed New PGIS	361,120	sf	(8.29 ac)
Proposed Replaced Impervious Area	0	sf	(0.00 ac)
Native Vegetation convert to Lawn	0	sf	(0.00 ac)
Native Vegetation convert to Pasture	0	sf	(0.00 ac)
<b>Total New Impervious Area</b>	<b>745,172</b>	<b>sf</b>	<b>(17.11 ac)</b>
<b>Proposed Disturbance Area</b>	<b>1,194,930</b>	<b>sf</b>	<b>(27.43 ac)</b>

This project qualifies as 'New Development' and requires construction activities to comply with Minimum Requirements 1 through 9. This document is part of the Stormwater Site Plan and presents recommendations and procedures required to adhere to the minimum requirements.

## **Introduction:**

This document is part of the Stormwater Site Plan for the Robinett Brothers, LLC Fee-Simple Subdivision 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 Robinett Brothers, LLC Parcel No. 310519-004-009-00, 310519-004-011-00 located at 1125 & 1507 172nd Street NE, Marysville, Washington 98271.

## **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 2012 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 Drainage Manual of 2012 (2012 SMMWW).

## **NOTES:**

1. BMPs referred to in this document are those specified in the 2012 SMMWW. A copy of Volume 2 of the 2012 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.

## **Element 1: Preserve Vegetation/Mark Clearing Limits**

Preservation of vegetation is a guideline to minimize the removal of existing trees and limit disturbance of natural areas. The goal of Element 1 is to retain natural vegetation, limit compaction of native top soil, and maintain any existing duff layer. An effective method of preserving vegetation is by marking clearing limits.

Soil shall be managed in a manner that does not permanently compact or deteriorate the final soil and landscape system.

If disturbance and/or compaction occur, the impact must be corrected at the end of construction activity. This shall include restoration of soil depth, soil quality, permeability, and percent organic matter. Construction practices must not cause damage to, or compromise the design of permanent landscape or infiltration areas. Delineate or mark the following areas and features on the site prior to land disturbing activities:

- a) Clearing limits;
- b) All critical areas, and their setbacks and buffers;
- c) Erosion or landslide hazard areas and their setbacks and buffers;
- d) Existing and proposed easements;
- e) Required landscaping, and tree retention and replacement areas;
- f) Other areas on the site required to be preserved or protected including, but not limited to, drainage courses.

Relevant BMPs:

- BMP C101: Preserving Natural Vegetation
- BMP C102: Buffer Zones
- BMP C103: High Visibility Plastic or Metal Fence
- BMP C104: Stake and Wire Fence

## **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.

This site experiences infrequent traffic. The stabilized construction and parking shall be constructed to the west. The goal is to minimize sediment transport out of the construction area to neighboring businesses and roads.

Relevant BMPs:

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

## **Element 3: Control Flow Rates**

The purpose of Element 3 is to protect downstream property and waterways from soil erosion due to increases in velocity and peak volumetric flow rate of stormwater runoff. Stormwater retention or detention facilities may be needed to comply with this requirement. As the existing site is primarily

pasture/lawn with flat slopes, there will be effectively no change in flow rate from the current condition caused by grading. The implementation of soil stabilization BMPs as presented in Element 4 will provide all the flow control needed.

Relevant BMPs:

- None

## **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.

The bio-cell areas on the northern side of the site will provide most of the sediment control needs when flows are not concentrated and will flow through the existing grasses and vegetation before reaching a sediment trap. Brush barriers, and straw wattles will provide protection in areas with steep slopes from grading activities. Wattles should be oriented to guide flow to the south.

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

## **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 other restrictions are placed on the project.

Soil piles should be covered. Plastic covering will likely be the best option. Fill exploration holes or deep excavations as soon as possible. Rough grade the site to eliminate large soil mounds and prepare for temporary cover. Large soil mounds prove to be highly erodible. 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 C122: Nets and Blankets
- BMP C123: Plastic Covering
- BMP C140: Dust Control

## **Element 6: Protect Slopes**

No cut/fill slopes are proposed for the project. No BMP's are required.

In the event of a redesign or field revision the following will be applied to any slopes that are created. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion and comply with the City's applicable critical area regulations. Cut and fill slopes shall be protected from erosive and concentrated flows until permanent drainage conveyance systems are in place. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.

Relevant BMPs:

- BMP C120: Temporary and Permanent Seeding
- BMP C208: Triangular Silt Dike (Geotextile-Encased Check Dam)
- BMPs C122 and C123 for nets and blankets and plastic covering.

## **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:

- BMP C220: Storm Drain Inlet Protection

## **Element 8: Stabilize Channels and Outlets**

This element provides guidance and a 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 conveyance constituents so that they are adequate to prevent erosion. Conveyance elements include outlets, adjacent stream banks, slopes, channels, and downstream reaches.

Temporary conveyance channels would specify outlet protection to avoid erosion. A permanent overflow outlet utilizes rip-rap to prevent erosion by decreasing energy.

Relevant BMPs:

- BMP C201: Grass Lined Channels
- BMP C202: Channel Lining

## **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 Volume IV, Chapters 2 and 3 of the 2012 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 C153: Material Storage, Delivery, and Containment

### **Element 10: Control Dewatering**

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

If dewatering is required for septic tank installation it is recommended that dewater is released to a brush barrier or level spreader to disperse into downslope brush/forest area.

Relevant BMPs:

- BMP C220 - Storm Drain Inlet Protection

### **Element 11: Maintain Best Management Practices.**

BMPs shall be inspected and maintained by the property owner during construction and removed within 30 days after City determines that the site is stabilized, provided that temporary BMPs may be removed when they are no longer needed.

### **Element 12: Manage the Project.**

The SWPPP shall be fully implemented at all times and modified when changes in design, construction, operation, or maintenance at the construction site that could have an effect on the discharge of pollutants to state waters.



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.

Relevant BMPs:

- BMP C150 materials on hand

### **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 2012 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

## Sequence of BMP Implementation

Erosion control BMPs should be implemented in the following sequence:

- 1) 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 to be preserved or protected including, but not limited to, drainage courses
- 2) Provide parking area stabilization
- 3) Establish areas for storage and handling of pollution generating materials
- 4) Control BMPs will be implemented
- 5) Install sediment controls
- 6) Implement stabilization measures for disturbed areas, slopes, and material stockpiles
- 7) Maintain BMPs until final site stabilization