# CITY OF MERCER ISLAND

**DEVELOPMENT SERVICES GROUP**

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## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Narrative and Plan Submittal

**Instructions:** This is a template for a simplified Stormwater Report. This form or an equivalent must accompany your Building Permit Application if the answer is "Yes" to each statement below. If "No" is the answer to one or more of the statements below, a full Drainage Report is required and the project does not qualify for use of the Small Project Stormwater Site Plan/Report template.

Select "yes" or "no" for each statement below. Answer "yes" if the statement accurately describes your project.

| Yes | No | Statement |
|---|---|---|
| ✔ | | This project disturbs less than 1 acre and is not part of a larger common plan of development. |
| ✔ | | This project converts less than 3/4 acre to lawn or landscape areas. |
| ✔ | | This project will create, add, or replace (in any combination) 2,000 square feet or greater, but less than 5,000 square feet, of new plus replaced hard surface **OR** will have a land disturbing activity of 7,000 square feet or greater **OR** will result in a net increase of impervious surface of 500 square feet or greater. |
| ✔ | | This project will not adversely impact a wetland, stream, water of the state, or change a natural drainage course. |

### Basic Project Information

Project Name: 7929 East Mercer Way

Site Address: 7929 East Mercer Way

Total Lot Size: 30,583

Total Proposed Area to be Disturbed (including stockpile area): 9,239 sq ft

Total Volume of Proposed Cut and Fill: 493 c.y. cut, 56 c.y. fill, net 437 c.y. fill sq ft

Total Proposed New Hard Surface Area: 797 sq ft

Total Proposed Replaced Hard Surface Area: 3,253 sq ft

Total Proposed Converted Pervious Surface Area (Native vegetation to lawn or landscape): 0 sq ft

Net Increase in Impervious Surface: 797 sq ft

# CITY OF MERCER ISLAND

## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Minimum Requirement #1 : Preparation of Stormwater Site Plan

**Written Project Description:**

The site is currently developed by a single family residence and is accessed by an existing paved driveway in a private access easement. The project will construct a new single family residence along with typical utility connections. Stormwater will be collected from all new impervious surfaces and be routed through an on-site detention tank before connecting to the existing conveyance system within E Mercer Way. The sewer and water connections will be maintained and the water meter size will be changed if necessary per site updates.

**Calculate new or replaced areas by surface type:**

| | |
|---|---|
| Lawn or Landscape Areas: 2,119 sq ft | Roof Area: 2,084 sq ft |

Other Hard Surface Areas:

Driveway: 797 sq ft Patio: 359 sq ft Sidewalk: 810 sq ft

Parking Lot: _____ sq ft Other: _____ sq ft

☑ Attach Drainage Plan

**Drainage Plan shall include the following:**

- Scaled drawing with slopes, lot lines, any public-right-of-way and any easements, location of each on-site stormwater management BMP selected above and the areas served by them, buildings, roads, parking lots, driveways, landscape features, and areas of disturbed soils to be amended.
- The scaled drawing must be suitable to serve as a recordable document that will be attached to the property deed for each lot that includes on-site BMPs. Document submittal must follow the "Standard Formatting Requirements for Recording Documents" per King County: www.kingcounty.gov/depts/records-licensing/recorders-office/recording-documents.aspx
- Identify design details and maintenance instructions for each on-site BMP, and attach them to this Small Project Stormwater Site Plan/Report.

# CITY OF MERCER ISLAND

## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Minimum Requirement #2 : Construction Stormwater Pollution Prevention

☑ Complete Section B of this submittal package: Construction Stormwater Pollution Prevention Plan Narrative (SWPPP)

☑ Attach construction SWPPP

### Minimum Requirement #3 : Source Control of Pollution

This section contains practices and procedures to reduce the release of pollutants. Provide a description of all known, available and reasonable source control BMPs that will be, or are anticipated to be, used at this location to prevent stormwater from coming into contact with pollutants. Additional BMPs are found in Volume IV of the 2014 Stormwater Management Manual for Western Washington (SWMMWW).

Check the BMPs you will use:

☑ BMP S411 for Landscaping and Lawn/ Vegetation Management
Operational practices for sites with landscaping

☐ BMP S421 for Parking and Storage of Vehicles.
Public and commercial parking lots can be sources of suspended solids, metals, or toxic hydrocarbons such oils and greases.

☐ BMP S433 for Pools, Spas, Hot Tubs, Fountains
Discharge from pools, hot tubs, and fountains can degrade ambient water quality. Routine maintenance activities generate a variety of wastes. Direct disposal of these waters to drainage system and waters of the state are not permitted without prior treatment and approval.

☐ Other BMPs found in Volume IV of SWMMWW applicable to project:

☐ No source control BMPs are applicable for this project.

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## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Minimum Requirement #4 : Preservation of Natural Drainage Systems

Natural drainage patterns shall be maintained and discharges from the project site shall occur at the natural location, to the maximum extent practicable. All outfalls require energy dissipation.

Choose the option below that best describes your project:

☐ This site has existing drainage systems or outfalls. These items are shown on the Drainage Plan. Include the following items on the Drainage Plan:

- Pipe invert elevations, slopes, cover, and material
- Locations, grades, and direction of flow in ditches and swales, culverts, and pipes

Describe how these systems will be preserved:

☑ This site does not have any existing drainage systems or outfalls.

Additional Comments:

# CITY OF MERCER ISLAND

## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Minimum Requirement #5 : On-site Stormwater Management

All projects meeting the thresholds for this Small Project Stormwater Report shall employ on-site stormwater management BMPs (See Small Project Stormwater Requirements Tip Sheet) to infiltrate, disperse, and retain stormwater runoff on-site to the extent feasible without causing flooding or erosion impacts.

### List #1

For each category select the *first* feasible item on the list below. Document your justification for each infeasible BMP in Section C of this submittal package.

Check one option for each category below:

#### Lawn and Landscape Areas

- ☐ My project does not have *Lawn or Landscape* areas
- ☑ Post-construction soil quality and depth
- ☑ Post-construction soil quality and depth is infeasible (see Section C of this submittal package)

#### Roofs

- ☐ My project does not have *Roof* areas
- ☐ 1. Full dispersion or downspout full infiltration
- ☐ 2. Rain garden or bioretention
- ☐ 3. Downspout dispersion system
- ☐ 4. Perforated stub-out connections
- ☑ 5. On-site detention system or fee-in-lieu of on-site detention authorized by the City Engineer (applicable if options #1-4 are infeasible and drainage from the site will be discharged to a storm or surface water system that includes a watercourse or there is a capacity constraint in the system)
- ☐ 6. No Roof BMP (applicable if options #1-4 are infeasible and on-site detention is not required)

Measured Infiltration Rate: _____ in/ hr

If #5 or #6 is selected, briefly describe why no Roof BMP is feasible (include detailed information in Section C of this submittal package):

The Site is within a mapped area where infiltrating LID facilities are not permitted. There is insufficient room for dispersion flow paths and the Site is located within an erosion hazard area and potential slide area. All collected runoff and green roof overflow will be piped through the sites detention and outfall directly to Lake Washington which is a designated receiving water, and therefore no flow control facilities OR BMPs are required or proposed.

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## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Minimum Requirement #5 : On-site Stormwater Management (cont.)

#### Other Hard Surfaces (such as driveway, sidewalk, parking lot, patio, etc.)

- ☐ My project does not have *Other Hard Surface* areas
- ☐ 1. Full dispersion

Measured Infiltration Rate: _____ in/ hr

- ☐ 2. Permeable pavement, rain gardens, or bioretention
- ☐ 3. Sheet flow dispersion or concentrated flow dispersion
- ☑ 4. On-site detention system or fee-in-lieu of on-site detention authorized by the City Engineer (applicable if options #1-3 are infeasible and drainage from the site will be discharged to a storm or surface water system that includes a watercourse or there is a capacity constraint in the system)
- ☐ 5. No Other Hard Surface BMP (applicable if options #1-3 are infeasible and on-site detention is not required)

If #4 or #5 is selected, briefly describe why no Other Hard Surface BMP is feasible (include detailed information in Section C of this submittal package):

Due to site topography and lack of pervious or vegetated space downstream of site impervious areas, dispersion and bioretention are not feasible.

### Flow Control Exempt List

Proceed with this list if your project discharges directly to Lake Washington or if findings from a downstream analysis confirm that the downstream system is free of capacity constraints for a minimum of ¼ mile and a maximum of 1 mile.

For flow control exempt discharges, the BMPs listed below for Roofs and Other Hard Surfaces do not need to be evaluated in priority order. You can select any BMP from the lists provided below and do not need to document infeasibility in Section C of this submittal package.

Check one option for each category below:

#### Lawn and Landscape Areas

- ☐ My project does not have *Lawn or Landscape* areas
- ☑ Post-construction soil quality and depth

# CITY OF MERCER ISLAND

## SECTION A: SMALL PROJECT STORMWATER SITE PLAN/REPORT

### Minimum Requirement #5 : On-site Stormwater Management (cont.)

#### Roofs

- ☐ My project does not have *Roof* areas
- ☐ Downspout full infiltration
- ☐ Downspout dispersion system
- ☐ Perforated stub-out connections
- ☑ Each item above is infeasible

If "Each item above is infeasible" is selected, briefly describe why no Roof BMP is feasible:

The Site is within a mapped area where infiltrating LID facilities are not permitted. There is insufficient room for dispersion flow paths and the Site is located within an erosion hazard area and potential slide area. All collected runoff and green roof overflow will be piped through the sites detention and outfall directly to Lake Washington which is a designated receiving water, and therefore no flow control facilities OR BMPs are required or proposed.

#### Other Hard Surfaces (such as driveway, sidewalk, parking lot, patio, etc.)

- ☐ My project does not have *Other Hard Surface* areas
- ☐ Sheet flow dispersion
- ☐ Concentrated flow dispersion
- ☑ Each item above is infeasible

If "Each item above is infeasible" is selected, briefly describe why no Other Hard Surface BMP is feasible:

The Site is within a mapped area where infiltrating LID facilities are not permitted. There is insufficient room for dispersion flow paths and the Site is located within an erosion hazard area and potential slide area. All collected runoff and green roof overflow will be piped through the sites detention and outfall directly to Lake Washington which is a designated receiving water, and therefore no flow control facilities OR BMPs are required or proposed.

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Instructions

This is a template for a simplified Construction Stormwater Pollution Prevention Plan ("Construction SWPPP"). If "No" is the answer to one or more of the statements on the first page of Section A of this submittal package, then a full Construction SWPPP is required and the project does not quality for the use of the Small Project Construction SWPPP Narrative template. If the project is less than the thresholds on the first page of Section A of this submittal package, then Minimum Requirement #2 still applies, but this section (Section B) or a full construction SWPPP is not required. You should include your Construction SWPPP in your contract with your builder. A copy of the Construction SWPPP must be located at the construction site or within reasonable access to the site for construction and inspection personnel at all times.

### General Information on the Existing Site and Project

Describe the following in the Project Narrative box below (attach additional pages if necessary):

- Nature and purpose of the construction project
- Existing topography, vegetation, and drainage, and building structures
- Adjacent areas, including streams, lakes, wetlands, residential areas, and roads that might be affected by the construction project
- How upstream drainage areas may affect the site
- Downstream drainage leading from the site to the receiving body of water
- Areas on or adjacent to the site that are classified as critical areas
- Critical areas that receive runoff from the site up to one-quarter mile away
- Special requirements and provisions for working near or within critical areas
- Areas on the site that have potential erosion problems

Project Narrative:

-The proposed development plans for the site involve constructing a new residence on the Site along with new utility and drainage connections. The ex. driveway will remain intact between the new home and the edge of the site.
-The area on the southeast corner of the site is covered with an existing driveway, home and landscaping. The remainder of the Site contains steep slopes of vegetated areas with evergreen and deciduous trees with light underbrush. The Site mainly has slopes ranging from 2% - 70% down to the southwestern property line. Steeper slope areas above 40% are located northwest of the proposed residence and garage, behind a new retaining wall.
-Adjacent areas that may be affected by this project include the ingress, egress drainage and utility easement due to construction traffic and adjacent residential areas due to typical residential construction activities. There are no other known streams or wetlands adjacent to the Site.
-The upstream area consists of the steep slope on site and the slope of an adjacent residential parcel. Runoff from upstream areas is not currently collected . The new development will collect upstream runoff within a wall drain and bypass the site detention and outfall to the catch basin at the edge of the site.
-Runoff currently sheet flows to the northeast onto adjacent properties.
-There are steep slopes along with potential slide and erosion hazard areas on the Site.
-There are no special requirements or provisions for working near or within critical areas for this project.
-Potential erosion problems on the site include temporary soil stockpiles, wall/ grading cuts and the house foundation cuts.

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## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Construction SWPPP Drawings

Refer to the general Drawing Requirements in Stormwater Management Manual for Western Washington (SWMMWW) Volume I, Chapter 3.

### Vicinity Map

Provide a map with enough detail to identify the location of the construction site, adjacent roads, and receiving waters.

### Site Map

Include the following (where applicable):

- ☑ Legal description of the property boundaries or an illustration of property lines (including distances) on the drawings.
- ☑ North arrow.
- ☑ Existing structures and roads.
- ☑ Boundaries and identification of different soil types.
- ☑ Areas of potential erosion problems.
- ☑ Any on-site and adjacent surface waters, critical areas, buffers, flood plain boundaries, and Shoreline Management boundaries.
- ☑ Existing contours and drainage basins and the direction of flow for the different drainage areas.
- ☑ Where feasible, contours extend a minimum of 25 feet beyond property lines and extend sufficiently to depict existing conditions.
- ☑ Final and interim grade contours as appropriate, drainage basins, and the direction of stormwater flow during and upon completion of construction.
- ☑ Areas of soil disturbance, including all areas affected by clearing, grading, and excavation.
- ☑ Locations where stormwater will discharge to surface waters during and upon completion of construction.
- ☑ Existing unique or valuable vegetation and vegetation to be preserved.
- ☑ Cut-and-fill slopes indicating top and bottom of slope catch lines.
- ☑ Total cut-and-fill quantities and the method of disposal for excess material.
- ☑ Stockpile; waste storage; and vehicle storage, maintenance, and washdown areas.

### Temporary and Permanent BMPs

Include the following on site map (where applicable):

- ☑ Locations for temporary and permanent swales, interceptor trenches, or ditches.
- ☑ Drainage pipes, ditches, or cut-off trenches associated with erosion and sediment control and stormwater management.
- ☑ Temporary and permanent pipe inverts and minimum slopes and cover.
- ☑ Grades, dimensions, and direction of flow in all ditches and swales, culverts, and pipes.
- ☑ Locations and outlets of any dewatering systems.
- ☑ Details for bypassing off-site runoff around disturbed areas.
- ☑ Locations of temporary and permanent stormwater treatment and/or flow control best management practices (BMPs).
- ☑ Details for all structural and nonstructural erosion and sediment control (ESC) BMPs (including, but not limited to, silt fences, construction entrances, sedimentation facilities, etc.)
- ☑ Details for any construction-phase BMPs or techniques used for Low Impact Development (LID) BMP protection.

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## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

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

The goal of this element is to preserve native vegetation and to clearly show the limits of disturbance.

*This element* **does not** *apply to my project because:*

☐ The site was cleared as part of clearing activity that is subject to an enforcement action and is re-vegetated. Restoration may be necessary to comply with Critical Area Regulations or NPDES requirements. Buffer Zones-BMP C102 may apply if Critical Areas exist on-site and buffer zones shall be protected.

☐ Other Reason / Additional Comments:

*If it* **does** *apply, describe the steps you will take and select the best management practices (BMPs) you will use:*

☑ The perimeter of the area to be cleared shall be marked prior to clearing operation with visible flagging, orange plastic barrier fencing and/or orange silt fencing as shown on the SWPPP site map. The total disturbed area shall be less than 7,000 square feet. Vehicles will only be allowed in the areas to be graded, so no compaction of the undeveloped areas will occur.

Additional Comments:

The  Project Site was previously cleared for the existing home and construction will take place in non-vegetated areas. Construction will avoid large trees adjacent to the project  The project will have clearing limits marked and tree protection in place during construction.

*Check the BMPs you will use:*

☑ C101 Preserving Natural Vegetation ☐ C102 Buffer Zones ☑ C103 High Visibility Fence

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 2: Construction Access

The goal of this element is to provide a stabilized construction entrance/exit to prevent or reduce or sediment track out.

*This element **does not** apply to my project because:*

☑ The driveway to the construction area already exists and will be used for construction access. All equipment and vehicles will be restricted to staying on that existing impervious surface.

☐ Other Reason / Additional Comments:

*If it **does** apply, describe the steps you will take and select the BMPs you will use:*

☐ A stabilized construction entrance will be installed prior to any vehicles entering the site, at the location shown on the SWPPP site map.

Additional Comments:

*Check the BMPs you will use:*

☐ C105 Stabilized Construction Entrance / Exit

☐ C106 Wheel Wash

☐ C107 Construction Road / Parking Area Stabilization

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 3: Control Flow Rates

The goal of this element is to construct retention or detention facilities when necessary to protect properties and waterways downstream of development sites from erosion and turbid discharges.

*This element* **does not** *apply to my project because:*

☐ Other Reason / Additional Comments:

*If it* **does** *apply, describe the steps you will take and select the BMPs you will use:*

☑ Flow rates will be controlled by using SWPPP Element 4 sediment controls and BMP T5.13 Post-Construction Soil Quality and Depth if necessary.

Additional Comments:

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## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 4: Sediment Control

The goal of this element is to construct sediment control BMPs that minimize sediment discharges from the site.

*This element **does not** apply to my project because:*

☐ The site has already been stabilized and re-vegetated.

☐ Other Reason / Additional Comments:

*If it **does** apply, describe the steps you will take and select the BMPs you will use:*

☑ Sediment control BMPs shall be placed at the locations shown on the SWPPP site map

Additional Comments:

*Check the BMPs you will use:*

☐ C231 Brush Barrier

☑ C233 Silt Fence

☑ C235 Wattles

☐ C232 Gravel Filter Berm

☐ C234 Vegetated Strip

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 5: Stabilize Soils

The goal of this element is to stabilize exposed and unworked soils by implementing erosion control BMPs.

*This element **does not** apply to my project because:*

☐ Other Reason / Additional Comments:

*If it **does** apply, describe the steps you will take and select the BMPs you will use:*

☑ Exposed soils shall be worked during the week until they have been stabilized. Soil stockpiles will be located within the disturbed area shown on the SWPPP site map. Soil excavated for the foundation will be backfilled against the foundation and graded to drain away from the building. No soils shall remain exposed and unworked for more than 7 days from May 1 to September 30 or more than 2 days from October 1 to April 30. Once the disturbed landscape areas are graded, the grass areas will be amended using BMP T5.13 Post-Construction Soil Quality and Depth. All stockpiles will be covered with plastic or burlap if left unworked.

Additional Comments:

*Check the BMPs you will use:*

☑ C120 Temporary & Permanent Seeding
☐ C122 Nets & Blankets
☐ C124 Sodding
☐ C131 Gradient Terraces
☑ C235 Wattles
☑ C121 Mulching
☑ C123 Plastic Covering
☑ C125 Topsoil / Composting
☑ C140 Dust Control

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 6: Protect Slopes

The goal of this element is to design and construct cut-and-fill slopes in a manner to minimize erosion.

*This element* **does not** *apply to my project because:*

☐ No cut slopes over 4 feet high or slopes steeper than 2 feet horizontal to 1 foot vertical, and no fill slopes over 4 feet high will exceed 3 feet horizontal to 1 foot vertical. Therefore, there is no requirement for additional engineered slope protection.

☐ Other Reason / Additional Comments:

*If it* **does** *apply, describe the steps you will take and select the BMPs you will use:*

Additional Comments:

*Check the BMPs you will use:*

☑ C120 Temporary & Permanent Seeding

☑ C205 Subsurface Drains

☐ C207 Check Dams

☐ C204 Pipe Slope Drains

☐ C206 Level Spreader

☐ C208 Triangular Silt Dike (Geotextile-Encased Check Dam)

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 7: Protect Permanent Drain Inlets

The goal of this element is to protect storm drain inlets during construction to prevent stormwater runoff from entering the conveyance system without being filtered or treated.

*This element* **does not** *apply to my project because:*

- ☐ The site has open ditches in the right-of-way or private road right-of-way.
- ☐ There are no catch basins on or near the site.
- ☐ Other Reason / Additional Comments:

*If it* **does** *apply, describe the steps you will take and select the BMPs you will use:*

- ☑ Catch basins on the site or immediately off site in the right-of-way are shown on the SWPPP site map. Storm drain inlet protection shall be installed.

Additional Comments:

*Check the BMPs you will use:*

- ☑ C220 Storm Drain Inlet Protection

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 8: Stabilize Channels and Outlets

The goal of this element is to design, construct, and stabilize on-site conveyance channels to prevent erosion from entering existing stormwater outfalls and conveyance systems.

*This element* **does not** *apply to my project because:*

- [x] Construction will occur during the dry weather. No storm drainage channels or ditches shall be constructed either temporary or permanent. A small swale shall be graded to convey yard drainage around the structure using a shallow slope; it shall be seeded after grading and stabilized.

- [ ] Other Reason / Additional Comments:

*If it* **does** *apply, describe the steps you will take and select the BMPs you will use:*

- [ ] A wattle shall be placed at the end of the swale to prevent erosion at the outlet of the swale.

Additional Comments:

*Check the BMPs you will use:*

- [ ] C202 Channel Lining
- [ ] C207 Check Dams
- [ ] C209 Outlet Protection
- [ ] C235 Wattles

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## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 9: Control Pollutants

The goal of this element is to design, install, implement and maintain BMPs to minimize the discharge of pollutants from material storage areas, fuel handling, equipment cleaning, management of waste materials, etc.

*This element* **does not** *apply to my project because:*

☐ Other Reason / Additional Comments:

*If it* **does** *apply, describe the steps you will take and select the BMPs you will use:*

☑ Any and all pollutants, chemicals, liquid products and other materials that have the potential to pose a threat to human health or the environment will be covered, contained, and protected from vandalism. All such products shall be kept under cover in a secure location on-site. Concrete handling shall follow BMP C151.

Additional Comments:

*Check the BMPs you will use:*

☑ C151 Concrete Handling

☑ C152 Sawcutting and Surfacing Pollution Prevention

☑ C153 Material Delivery, Storage, and Containment

☑ C154 Concrete Washout Area

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 10: Control De-watering

The goal of this element is to handle turbid or contaminated dewatering water separately from stormwater.

*This element **does not** apply to my project because:*

☑ No dewatering of the site is anticipated.

☐ Other Reason / Additional Comments:

*If it **does** apply, describe the steps you will take and select the BMPs you will use:*

Additional Comments:

*Check the BMPs you will use:*

☐ C203 Water Bars ☐ C236 Vegetated Filtration ☐ C206 Level Spreader

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 11: Maintain Best Management Practices

The goal of this element is to maintain and repair all temporary and permanent erosion and sediment control BMPs to assure continued performance.

*Describe the steps you will take:*

☑ Best Management Practices or BMPs shall be inspected and maintained during construction and removed within 30 days after the City Inspector or Engineer determines that the site is stabilized, provided that they may be removed when they are no longer needed.

### Element 12: Manage the Project

The goal of this element is to ensure that the construction SWPPP is properly coordinated and that all BMPs are deployed at the proper time to achieve full compliance with City regulations throughout the project.

*If it* **does** *apply, describe the steps you will take and select the BMPs you will use:*

The Construction SWPPP will be implemented at all times. The applicable erosion control BMPs will be implemented in the following sequence:

☑ 1. Mark clearing limits

☑ 2. Install stabilized construction entrance

☑ 3. Install protection for existing drainage systems and permanent drain inlets

☑ 4. Establish staging areas for storage and handling polluted material and BMPs

☑ 5. Install sediment control BMPs

☑ 6. Grade and install stabilization measures for disturbed areas

☑ 7. Maintain BMPs until site stabilization, at which time they may be removed

Additional Comments:

# CITY OF MERCER ISLAND

## SECTION B: SMALL PROJECT CONSTRUCTION SWPPP NARRATIVE

### Element 13: Protect Low Impact Development BMPs

The goal of this element is to protect on-site stormwater management BMPs (also known as "Low Impact Development BMPs") from siltation and compaction during construction. On-site stormwater management BMPs used for runoff from roofs and other hard surfaces include: full dispersion, roof downspout full infiltration or dispersion systems, perforated stubout connections, rain gardens, bioretention systems, permeable pavement, sheetflow dispersion, and concentrated flow dispersion. Methods for protecting on-site stormwater management BMPs include sequencing the construction to install these BMPs at the latter part of the construction grading operations, excluding equipment from the BMPs and the associated areas, and using the erosion and sedimentation control BMPs listed below.

*Describe the construction sequencing you will use:*

Additional Comments:

1. Arrange and attend a pre-construction meeting with the city inspector.
2. Flag or fence clearing limits.
3. Call one-call utility locate service prior to any excavation work.
4. Grade access road & construct/install rock construction entrance if necessary.
5. Install perimeter protection (silt fence, brush barrier, etc.).
6. Install shoring wall.
7. Construct residence and other site improvements.
8. Maintain erosion control measures in accordance with city or county standards and manufacturer's recommendations.
9. Maintain access to off-site roads and driveways at all times during the duration of the project.
10. Relocate erosion control measures or install new measures so that as site conditions change the erosion and sediment control is always in accordance with the city TESC minimum requirements.
11. Cover all areas that will be unworked for more than seven days during the dry season or two days during the wet season with straw, wood fiber mulch, compost, plastic sheeting or equivalent.
12. Stabilize all areas that reach final grade within seven days.
13. Seed or sod any areas to remain unworked for more than 30 days.
14. Upon completion of the project, all disturbed areas must be stabilized and BMPs removed if appropriate after acceptance by inspector.

*Select the BMPs you will use:*

- [ ] C102 Buffer Zone
- [x] C103 High Visibility Fence
- [ ] C231 Brush Barrier
- [x] C233 Silt Fence
- [ ] C234 Vegetated Strip

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

### Minimum Requirement #5 (On-Site Stormwater Management)

The following tables summarize infeasibility criteria that can be used to justify not using various on-site stormwater management best management practices (BMPs) for consideration for Minimum Requirement #5. This information is also included under the detailed descriptions of each BMP in the 2014 Stormwater Management Manual for Western Washington (Stormwater Manual), but is provided here in this worksheet for additional clarity and efficiency. Where any inconsistencies or lack of clarity exists, the requirements in the main text of the Stormwater Manual shall be applied. If a project is limited by one or more of the infeasibility criteria specified below, but an applicant is interested in implementing a specific BMP, a functionally equivalent design may be submitted to the City for review and approval. Evaluate the feasibility of the BMPs in priority order based on List #1 or #2 (Small Project Stormwater Requirements Tip Sheet and Stormwater Manual). Select the first BMP that is considered feasible for each surface type. Document the infeasibility (narrative description and rationale) for each BMP that was not selected. Only one infeasibility criterion needs to be selected for a BMP before evaluating the next BMP on the list. Attach additional pages for supporting information if necessary.

Note: If your project discharges directly to Lake Washington (flow control exempt) or a downstream analysis confirms that the downstream system is free of capacity constraints for a minimum of ¼ mile and a maximum of 1 mile, then you do not need to complete this worksheet, but should still refer to the infeasibility criteria when selecting BMPs.

| **Lawn and Landscaped Areas** | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Post-construction Soil Quality and Depth<br>List #1 and #2 | ☐ Siting and design criteria provided in BMP T5.13 (**Stormwater Manual** Volume V, Section 5.3) cannot be achieved.<br>☐ Lawn and landscape area is on till slopes greater than 33 percent. | |

| **Roofs** | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Full Dispersion<br>List #1 and #2 | ☑ Site setbacks and design criteria provided in BMP T5.30 (**Stormwater Manual** Volume V, Section 5.3) cannot be achieved.<br>☑ A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved.<br>☑ A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) cannot be achieved. | Insufficient flowpath, and no existing forested area downstream of the project area. |
| Downspout Full Infiltration<br>List #1 and #2 | ☑ Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards.<br>☐ Site setbacks and design criteria provided in BMP T5.10A (**Stormwater Manual** Volume III, Section 3.1.1) cannot be achieved.<br>☐ The lot(s) or site does not have out-wash or loam soils.<br>☐ There is not at least 3 feet or more of permeable soil from the proposed final grade to the seasonal high groundwater table or other impermeable layer.<br>☐ There is not at least 1 foot or more of permeable soil from the proposed bottom of the infiltration system to the seasonal high groundwater table or other impermeable layer. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Roofs (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Bioretention or Rain Gardens<br><br>List #1 (both) and List #2 (bioretention only) | *Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.*<br><br>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):<br><br>☐ Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or down-gradient flooding.<br><br>☐ Within an area whose ground water drains into an erosion hazard, or landslide hazard area.<br><br>☐ Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces.<br><br>☐ Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system.<br><br>☐ Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects.<br><br>☐ Where infiltrating water would threaten existing below grade basements.<br><br>☐ Where infiltrating water would threaten shoreline structures such as bulkheads.<br><br>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br><br>☑ Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards<br><br>☐ Within setback provided for BMP T7.30 (**Stormwater Manual** Volume V, Section 7.4)<br><br>☐ Where they are not compatible with surrounding drainage system as determined by the city (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area). | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Roofs (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Bioretention or Rain Gardens (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br><br>☑ Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by MICC 19.07.060).<br><br>☐ Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent.<br><br>☐ Within 50 feet from the top of slopes that are greater than 20 percent and over 10 feet of vertical relief.<br><br>☐ For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act [MTCA]):<br>• Within 100 feet of an area known to have deep soil contamination.<br>• Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater.<br>• Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area.<br>• Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW.<br><br>☐ Within 100 feet of a closed or active landfill.<br><br>☐ Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface.<br><br>☐ Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Roofs (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Bioretention or Rain Gardens (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br><br>☐ Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with **Stormwater Manual** Volume III, Section 3.3.6 (or an alternative small scale test specified by the City) shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7.<br><br>☐ Where the minimum vertical separation of 3 feet to the seasonal high groundwater elevation or other impermeable layer would not be achieved below bioretention that would serve a drainage area that exceeds the following thresholds (and cannot reasonably be broken down into amounts smaller than indicated):<br><br>o 5,000 square feet of pollution-generating impervious surface (PGIS)<br><br>o 10,000 square feet of impervious area<br><br>o 0.75 acres of lawn and landscape.<br><br>☐ Where the minimum vertical separation of 1 foot to the seasonal high groundwater or other impermeable layer would not be achieved below bioretention that would serve a drainage area less than the above thresholds.<br><br>☐ Within 100 feet of a drinking water well, or a spring used for drinking water supply.<br><br>☐ Within 10 feet of small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a “large on-site sewage disposal system,” see Chapter 246-272B WAC. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Roofs (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Downspout Dispersion Systems<br><br>List #1 and #2 | ☑ Site setbacks and design criteria provided in BMP T5.10B (**Stormwater Manual** Volume III, Section 3.1.2) cannot be achieved.<br><br>☐ For splash blocks, a vegetated flowpath at least 50 feet in length from the downspout to the downstream property line, structure, stream, wetland, slope over 15 percent, or other impervious surface is not feasible.<br><br>☐ For trenches, a vegetated flowpath of at least 25 feet in between the outlet of the trench and any property line, structure, stream, wetland, or impervious surface is not feasible. A vegetated flowpath of at least 50 feet between the outlet of the trench and any slope steeper than 15 percent is not feasible. | Insufficient flowpath, and no existing forested area downstream of the project area. |
| Perforated Stub-Out Connections<br><br>List #1 and #2 | ☑ Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards<br><br>☐ For sites with septic systems, the only location available for the perforated portion of the pipe is located up-gradient of the drainfield primary and reserve areas. This requirement can be waived if site topography will clearly prohibit flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that this is unnecessary.<br><br>☐ Site setbacks and design criteria provided in BMP T5.10C (**Stormwater Manual** Volume III, Section 3.1.3) cannot be achieved.<br><br>☐ There is not at least 1 foot of permeable soil from the proposed bottom (final grade) of the perforated stub-out connection trench to the highest estimated groundwater table or other impermeable layer.<br><br>☐ The only location available for the perforated stub-out connection is under impervious or heavily compacted soils. | |
| On-site Detention<br><br>List #1 and #2 | ☑ Project discharges directly to Lake Washington.<br><br>☐ Findings from a 1/4 mile downstream analysis confirm that the downstream system is free of capacity constraints.<br><br>☐ Site setbacks and design criteria provided in the **Stormwater Manual** (Volume III, Section 3.2.2) cannot be achieved. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Full Dispersion<br><br>List #1 and #2 | ☑ Site setbacks and design criteria provided in BMP T5.30 (**Stormwater Manual** Volume V, Section 5.3) cannot be achieved.<br><br>☑ A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved.<br><br>☑ A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) cannot be achieved. | Insufficient flowpath, and no existing forested area downstream of the project area. |
| Permeable Pavement<br><br>List #1 and #2 | Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):<br><br>☐ Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or downgradient flooding.<br><br>☑ Within an area whose ground water drains into an erosion hazard, or landslide hazard area.<br><br>☐ Where infiltrating and ponded water below the new permeable pavement area would compromise adjacent impervious pavements.<br><br>☐ Where infiltrating water below a new permeable pavement area would threaten existing below grade basements.<br><br>☐ Where infiltrating water would threaten shoreline structures such as bulkheads.<br><br>☐ Down slope of steep, erosion prone areas that are likely to deliver sediment.<br><br>☐ Where fill soils are used that can become unstable when saturated.<br><br>☐ Excessively steep slopes where water within the aggregate base layer or at the subgrade surface cannot be controlled by detention structures and may cause erosion and structural failure, or where surface runoff velocities may preclude adequate infiltration at the pavement surface.<br><br>☐ Where permeable pavements cannot provide sufficient strength to support heavy loads at industrial facilities such as ports.<br><br>☐ Where installation of permeable pavement would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, or pre-existing road subgrades. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Permeable Pavement (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br><br>☑ Evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards<br><br>☐ Within an area designated as an erosion hazard, or landslide hazard.<br><br>☐ Within 50 feet from the top of slopes that are greater than 20 percent.<br><br>☐ For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under MTCA):<br><br>• Within 100 feet of an area known to have deep soil contamination.<br><br>• Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater.<br><br>• Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area.<br><br>• Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW.<br><br>☐ Within 100 feet of a closed or active landfill.<br><br>☐ Within 100 feet of a drinking water well, or a spring used for drinking water supply, if the pavement is a pollution-generating surface.<br><br>☐ Within 10 feet of a small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC.<br><br>☐ Within 10 feet of any underground storage tank and connecting underground pipes, regardless of tank size. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface.<br><br>☐ At multi-level parking garages, and over culverts and bridges.<br><br>☐ Where the site design cannot avoid putting pavement in areas likely to have long-term excessive sediment deposition after construction (e.g., construction and landscaping material yards). | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Permeable Pavement (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br><br>☐ Where the site cannot reasonably be designed to have:<br>• Porous asphalt surface < 5% slope<br>• Pervious concrete surface < 10% slope<br>• Permeable interlocking concrete pavement surface < 12% slope<br>• Grid systems < 6-12% slope (check with manufacturer and local supplier to confirm maximum slope)<br><br>☐ Where the subgrade soils below a pollution-generating permeable pavement (e.g., road or parking lot) do not meet the soil suitability criteria for providing treatment. See soil suitability criteria for treatment in the **Stormwater Manual** Volume III, Section 3.3.7. Note: In these instances, the city may approve installation of a 6 inch sand filter layer meeting city specifications for treatment as a condition of construction.<br><br>☐ Where underlying soils are unsuitable for supporting traffic loads when saturated. Soils meeting a California Bearing Ratio of 5 percent are considered suitable for residential access roads.<br><br>☐ Where replacing existing impervious surfaces unless the existing surface is a non-pollution generating surface over an outwash soil with a saturated hydraulic conductivity of 4 inches per hour or greater.<br><br>☐ Where appropriate field testing indicates soils have a measured (a.k.a., initial) subgrade soil saturated hydraulic conductivity less than 0.3 inches per hour. Only small-scale PIT or large-scale PIT methods in accordance with **Stormwater Manual** Volume III, Section 3.3.6 (or an alternative small scale test specified by the City) shall be used to evaluate infeasibility of permeable pavement areas. (Note: In these instances, unless other infeasibility restrictions apply, roads and parking lots may be built with an underdrain, preferably elevated within the base course, if flow control benefits are desired.)<br><br>☐ Roads that receive more than very low traffic volumes, and areas having more than very low truck traffic. Roads with a projected average daily traffic volume of 400 vehicles or less are very low volume roads (AASHTO 2001) (U.S. Department of Transportation, 2013). Areas with very low truck traffic volumes are roads and other areas not subject to through truck traffic but may receive up to weekly use by utility trucks (e.g., garbage, recycling), daily school bus use, and multiple daily use by pick-up trucks, mail/parcel delivery trucks, and maintenance vehicles. (Note: This infeasibility criterion does not extend to sidewalks and other non-traffic bearing surfaces associated with the collector or arterial). | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Permeable Pavement (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br>☐ At sites defined as "high-use sites" (refer to the Glossary in the **Stormwater Manual** Volume I).<br>☐ In areas with "industrial activity" as identified in 40 CFR 122.26(b)(14).<br>☐ Where the risk of concentrated pollutant spills is more likely such as gas stations, truck stops, and industrial chemical storage sites.<br>☐ Where routine, heavy applications of sand occur in frequent snow zones to maintain traction during weeks of snow and ice accumulation.<br>☐ Where the seasonal high groundwater or an underlying impermeable/ low permeable layer would create saturated conditions within 1 foot of the bottom of the lowest gravel base course. | |
| Bioretention or Rain Gardens<br><br>List #1 (both) and List #2 (bioretention only) | *Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.*<br><br>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):<br>☐ Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or down-gradient flooding.<br>☐ Within an area whose ground water drains into an erosion hazard, or landslide hazard area.<br>☐ Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces.<br>☐ Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system.<br>☐ Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects.<br>☐ Where infiltrating water would threaten existing below grade basements.<br>☐ Where infiltrating water would threaten shoreline structures such as bulkheads. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Bioretention or Rain Gardens (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br>☑ Where evaluation of infiltration is not required per the Infiltration Infeasibility Map due to steep slopes, erosion hazards, or landslide hazards.<br>☐ Within setback provided for BMP T7.30 (**Stormwater Manual** Volume V, Section 7.4)<br>☐ Where they are not compatible with surrounding drainage system as determined by the city (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area).<br>☐ Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by MICC 19.07.060).<br>☐ Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent.<br>☐ Within 50 feet from the top of slopes that are greater than 20 percent and over 10 feet of vertical relief.<br>☐ For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act [MTCA]):<br>• Within 100 feet of an area known to have deep soil contamination.<br>• Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater.<br>• Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area.<br>• Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW.<br>☐ Within 100 feet of a closed or active landfill.<br>☐ Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Bioretention or Rain Gardens (cont.) | The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):<br><br>☐ Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons.<br><br>☐ Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with **Stormwater Manual** Volume III, Section 3.3.6 (or an alternative small scale test specified by the City) shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7.<br><br>☐ Where the minimum vertical separation of 3 feet to the seasonal high groundwater elevation or other impermeable layer would not be achieved below bioretention that would serve a drainage area that exceeds the following thresholds (and cannot reasonably be broken down into amounts smaller than indicated):<br><br>o 5,000 square feet of pollution-generating impervious surface (PGIS)<br><br>o 10,000 square feet of impervious area<br><br>o 0.75 acres of lawn and landscape.<br><br>☐ Where the minimum vertical separation of 1 foot to the seasonal high groundwater or other impermeable layer would not be achieved below bioretention that would serve a drainage area less than the above thresholds<br><br>☐ Within 100 feet of a drinking water well, or a spring used for drinking water supply.<br><br>☐ Within 10 feet of small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC. | |

# CITY OF MERCER ISLAND

## SECTION C: INFEASIBILITY CRITERIA

| Other Hard Surfaces (cont.) | | |
|---|---|---|
| **BMP and Applicable Lists** | **Infeasibility Criteria** | **Infeasibility Description and Rationale for Each BMP Not Selected** |
| Sheet Flow Dispersion<br><br>List #1 and #2 | ☑ Site setbacks and design criteria provided in BMP T5.12 (**Stormwater Manual** Volume V, Section 5.3) cannot be achieved.<br><br>☐ Positive drainage for sheet flow runoff cannot be achieved.<br><br>☐ Area to be dispersed (e.g., driveway, patio) cannot be graded to have less than a 15 percent slope.<br><br>☐ For flat to moderately sloped areas, at least a 10 foot-wide vegetation buffer for dispersion of the adjacent 20 feet of contributing surface cannot be achieved. For variably sloped areas, at least a 25 foot vegetated flowpath between berms cannot be achieved. | Presence of erosion hazard and potential slide areas, proposed finish grades exceed 20% |
| Concentrated Flow Dispersion<br><br>List #1 and #2 | ☑ Site setbacks and design criteria provided in BMP T5.11 (**Stormwater Manual** Volume V, Section 5.3) cannot be achieved.<br><br>☐ A minimum 3 foot length of rock pad and 50 foot flowpath OR a dispersion trench and 25 foot flowpath for every 700 square feet of drainage area followed with applicable setbacks cannot be achieved.<br><br>☐ More than 700 square feet drainage area drains to any dispersion device. | Presence of erosion hazard and potential slide areas, proposed finish grades exceed 20% |
| On-site Detention<br><br>List #1 and #2 | ☑ Project discharges directly to Lake Washington.<br><br>☐ Findings from a 1/4 mile downstream analysis confirm that the downstream system is free of capacity constraints.<br><br>☐ Site setbacks and design criteria provided in the **Stormwater Manual** (Volume III, Section 3.2.2) cannot be achieved. | |

# CITY OF MERCER ISLAND

## SECTION D: POST-CONSTRUCTION SOIL MANAGEMENT

### Attachments Required *(Check off required items that are attached)*

- [x] Site Plan showing, to scale:
  - [ ] Areas of undisturbed native vegetation (no amendment required)
  - [ ] New planting beds (amendment required)
  - [x] New turf areas (amendment required)
  - [ ] Type of soil improvement proposed for each area
- [ ] Soil test results (required if proposing custom amendment rates)
- [ ] Product test results for proposed amendments

### Total Amendment / Topsoil / Mulch for All Areas

Calculate the quantities needed for the entire site based on all of the areas identified on the Site Plan and the calculations on the following page(s):

| Product | Total Quantity (CY) | Test Results |
|---|---|---|
| Product #1: TBD | _____ CY | _____ % organic matter<br>_____ C:N ratio<br>"Stable"? yes ☐ no ☐ |
| Product #2: _____ | _____ CY | _____ % organic matter<br>_____ C:N ratio<br>"Stable"? yes ☐ no ☐ |
| Product #3: _____ | _____ CY | _____ % organic matter<br>_____ C:N ratio<br>"Stable"? yes ☐ no ☐ |

CY = cubic yards, C:N = Carbon:Nitrogen

# CITY OF MERCER ISLAND

## SECTION D: POST-CONSTRUCTION SOIL MANAGEMENT

### Amendment / Topsoil / Mulch by Area

For each identified area on your Site Plan, provide the following information: (Use additional sheets if necessary)

Area # A (should match identified Area # on Site Plan)

Planting type: ☑ Turf ☐ Undisturbed native vegetation
☐ Planting Beds ☑ Other: _____

| | | |
|---|---|---|
| **Pre-Approved Amendment Method** | | |
| ☐ Amend with compost | Turf:_____ SF x 5.4 CY ÷ 1,000 SF = _____CY<br>Planting beds:_____ SF x 9.3 CY ÷ 1,000 SF= _____CY<br>Total Quantity = _____CY<br>Scarification depth: 8 inches | Product: _____ |
| ☑ Stockpile and amend | Turf: 2,119 SF x 5.4 CY ÷ 1,000 SF = 11.4 CY<br>Planting beds: 0 SF x 9.3 CY ÷ 1,000 SF= _____CY<br>Total Quantity = x CY<br>Scarification depth: 8 inches | TBD<br>Product: _____ |
| ☐ Topsoil import | Turf:_____ SF x 18.6 CY÷1,000 SF = _____CY<br>Planting beds:_____ SF x 18.6 CY ÷ 1,000 SF= _____CY<br>Total Quantity = _____CY<br>Scarification depth: 6 inches | Product: _____ |
| **Custom Amendment** | | |
| ☐ Amend with compost | Attach information on bulk density, percent organic matter, moisture content, C:N ratio, and heavy metals analysis to support custom amendment rate and scarification depth.<br>Total Quantity = _____CY<br>Scarification depth: _____inches | Product: _____ |
| ☐ Stockpile and amend | Attach information on bulk density, percent organic matter, moisture content, C:N ratio, and heavy metals analysis to support custom amendment rate and scarification depth.<br>Total Quantity = _____CY<br>Scarification depth: _____inches | Product: _____ |
| **Mulch** | | |
| ☐ Amend with compost | Planting beds: _____ SF x 12.4 CY ÷ 1,000 SF= _____CY<br>Total Quantity = _____CY | Product: _____ |
| ☐ Stockpile and amend | Planting beds: _____ SF x 12.4 CY ÷ 1,000 SF= _____CY<br>Total Quantity = _____CY | Product: _____ |
| ☐ Topsoil import | Planting beds: _____ SF x 12.4 CY ÷ 1,000 SF= _____CY<br>Total Quantity = _____CY | Product: _____ |

CY = cubic yards, C:N = Carbon:Nitrogen

# CITY OF MERCER ISLAND

## SECTION E: SIGNATURE PAGE

### Project Engineer's Certification for Section B

For Stormwater Site Plans with engineered elements, the Construction SWPPP is stamped by a professional engineer licensed in the State of Washington in civil engineering.

If required, attach a page with the project engineer's seal with the following statement:

*"I hereby state that this Construction Stormwater Pollution Prevention Plan for* 7929 East Mercer Way *(name of project)* *has been prepared by me or under my supervision and meets the standard of care and expertise which is usual and customary in this community for professional engineers. I understand that the City of Mercer Island does not and will not assume liability for the sufficiency, suitability, or performance of Construction SWPPP BMPs prepared by me."*

### Applicant Signature for Full Stormwater Package (Sections A through D)

I have read and completed the Stormwater Submittal Package and know the information provided to be true and correct.

Print Applicant Name: Yoshio L. Piediscalzi, P.E.

Applicant Signature: Yoshio Piediscalzi Date 11-11-22