On-site Stormwater Management Calculator
Instructions

Version 09-30-2021

To use the On-Site Stormwater Calculator you must select "Enable Content" when the Security Warning appears.
Note this calculator is designed to work with Microsoft Excel 2010 or newer.

Introduction

This spreadsheet tool helps users implement the On-site Stormwater Management requirements for projects in the City of Seattle. In addition, this spreadsheet documents the other applicable Stormwater Code requirements for projects and provides a Site and Drainage Control Summary. Instructions for evaluating, selecting, and sizing on-site best management practices (BMPs) are provided below.

Note: all projects that require Drainage Review by SDCI must include a Site and Drainage Control Summary Sheet on the Drainage and Wastewater Control Plan.

Refer to Volume 1, *Volume 3 (Section 3.3 and Chapter 5), and Appendix C of the Seattle Stormwater Manual (Seattle 2021)* for On-site Stormwater Management requirements, BMP design requirements and infeasibility criteria.

The "Project Summary" and either the "BMP Sizing" or "BMP Modeling" tabs can be used to provide documentation for compliance with the On-site List requirement.

How to Use the On-site List Approach Calculator:

Note: The On-site List Approach is the most commonly used method. Refer to instructions at the bottom of this page if the On-site Performance Standard will be used.

Project Summary Tab:

A. Fill in in the light green cells in the "Project Summary" tab.

Step 1: Determine if Dispersion and Infiltration are Feasible
Refer to *Section 3.1* and *Section 3.2* in Volume 3 of the *Seattle Stormwater Manual (Seattle 2021)* .

Step 2: Calculate Areas by Surface Type
Divide the project area into hard surface areas with distinct drainage pathways and conduct a BMP evaluation for each surface "sub area". Refer to Figure 1 below for an example. Enter roof and non-roof areas and number of areas into "Project Summary" tab and hit Enter. Excel tabs will be generated for each individual surface.
Note: Do not create a surface tab for Permeable Pavement Facilities (PPF). PPFs are the only hard surface that will not have a surface tab. Enter the PPF area on the BMP Sizing tab.

Step 3: Select the On-site **List Approach** (Pre-sized Approach) Calculator option
Check the box for the "On-site List Approach (Pre-sized Approach) Calculator" on the Summary Tab.

The On-site Lists that indicate the BMPs that must be evaluated and the order in which they must be evaluated are provided in Volume 1, *Section 5.2* for all project type(s). The applicable on-site BMPs are provided in this calculator in the "Surface" tabs based on information entered in the "Project Summary" tab.

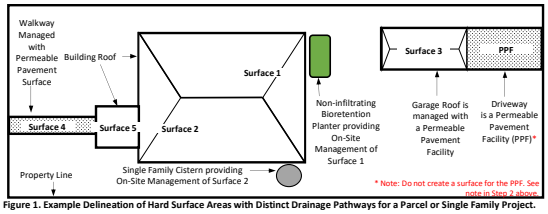

Figure 1. Example Delineation of Hard Surface Areas with Distinct Drainage Pathways for a Parcel or Single Family Project.

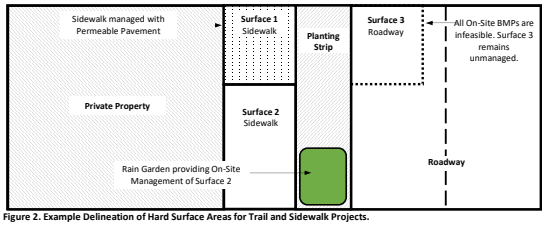

Figure 2. Example Delineation of Hard Surface Areas for Trail and Sidewalk Projects.

Surface Tab(s):

Step 4: Evaluate BMPs by Category
On each "Surface" tab, select "Infeasible", "Not evaluated", or "Use BMP" for each category. Note: BMPs in each category may be evaluated in any order. (See detailed information in Steps 5 through 10).

Step 5: Evaluate Feasibility of Category 1 BMPs
Determine feasibility of the BMP(s) in Category 1. The BMP is considered infeasible if one of the following applies:
-The BMP is considered infeasible per the criteria provided in the "Infeasibility Criteria" tab.
-Competing needs (e.g., historic preservation laws, health and safety standards) as provided in Seattle Municipal Code (SMC), Section 22.805.070 conflict with the BMP.
-The size of the BMP in the "Surface" tab(s) (generated based on "Project Summary" tab inputs) cannot be met on the site.

Step 6: Select Category 1 BMP(s)
If any of the Category 1 BMPs are feasible for a surface, then a Category 1 BMP must be used to manage runoff from the surface. Identify the BMP selected for the surface area by selecting "Use BMP" from the drop down menu. After BMP(s) are selected, the calculator will size the BMP for the surface area based on the facility information (e.g., ponding depth) entered in the "BMP Sizing" tab.
Note: Facility sizes provided in this tool are the minimum size required. Facilities can be made larger to meet additional requirements (i.e., flow control and/or water quality treatment standards).

Step 7: Document Infeasibility of Category 1 BMPs (if applicable)
If all the Category 1 BMPs are deemed infeasible, select "Infeasible" and the applicable "infeasibility criteria" from the drop down menus and proceed to Step 8. If needed for clarity, the applicant shall provide a narrative description and rationale with substantial evidence sufficient to explain and justify the applicant's conclusion that On-site BMPs are infeasible.

Step 8: Evaluate/Select Category 2 BMPs
If all of the Category 1 BMPs are deemed infeasible, evaluate the On-site BMPs in Category 2 using the same approach described in Steps 5 through 7. Once you move to Category 2, you can select any BMP within that Category.

Step 9: Evaluate/Select Category 3 BMPs
If all of the Category 2 BMPs are deemed infeasible, evaluate the On-site BMPs in Category 3 using the same approach described in Steps 5 through 7. Once you move to Category 3, you can select any BMP within that Category.

Step 10: Evaluate/Select Category 4 BMPs
If all of the Category 3 BMPs are deemed infeasible, evaluate the On-site BMPs in Category 4 using the same approach described in Steps 5 through 7.

Step 11: Evaluate/Select Category 5 BMPs (if applicable)
If all of the Category 4 BMPs are deemed infeasible, evaluate the On-site BMPs in Category 5 using the same approach described in Steps 5 through 7.

BMP Sizing Tab:

B. Once a "Surface" tab is completed for each surface, complete the information on the "BMP Sizing" tab

For each surface, select the BMP that the surface drains to. If more than one surface drains to the same BMP, indicate with the same BMP number. The appropriate sizing will be provided for each BMP based on the area of the surfaces draining to it. For BMPs with multiple design parameters (i.e., ponding depth, side slopes), select the design parameters that will be applied to the project.

Project Summary Tab:

C. The "Project Summary" tab summarizes the selected BMPs and BMP sizes by surface.

How to Use this Spreadsheet for the On-site Performance Standard

Project Summary Tab:

A. Fill in in the light green cells in the "Project Summary" tab.

Step 1: Determine if Dispersion and Infiltration are Feasible
Refer to *Section 3.1 and Section 3.2* in Volume 3 of the Seattle Stormwater Manual (Seattle 2021).

Step 2: Select the On-site **Performance** Standard Option
Check the box for the "On-site Performance Standard" on the Summary Tab.

When using the Performance Standard, any BMP from the Stormwater Manual may be selected in any order (i.e. the On-site Lists are not required to be used).

Step 3: Conduct Stormwater Modeling Using an Approved Continuous Runoff Model
Determine which On-site Stormwater Performance goal from Volume 1, *Section 5.2.1* is applicable to your project and use an approved continuous runoff model to demonstrate that this standard is met. See On-site Performance Standard BMP Design in *Appendix F, Section F-4* of the Seattle Stormwater Manual (Seattle 2021).

Submit the calculations and a narrative describing the calculations in a Drainage Report.

Step 4: Calculate Areas Tributary to Each BMP
Divide the hard surface areas of the project into surfaces that are managed with each BMP selected using the continuous runoff modeling indicated above. If some hard surfaces bypass all BMPs, designate a surface for these areas to be identified as a "bypass area".

Enter the number of separate roof and non-roof areas into "Project Summary" tab and hit Enter. Instead of creating separate surface tabs, the Performance Standard mode will create user inputs for each "surface" in the BMP Modeling Tab.

Step 5: Document the BMP's Used in the BMP Modeling Tab
Complete the green input fields in the BMP Modeling Tab to identify which BMP manages each "surface". Verify that the summary of these BMPs correctly shows on the Summary tab.

On-site Stormwater Management Calculator
Site and Drainage Control Summary

Version 09-30-2021

To use the On-Site List Calculator you must select "Enable Content" when the Security Warning appears.

Project Information

Site Address	1719 46TH AVE SW	SDCI Project Number	6929137-CN
Primary Contact	JAKE LYBECK	SDOT Project Number	
Project Type	Single-Family Residential	Primary Contact E-mail or Phone	RMITTING@BLUEPRINTCAP.CC

Is this project "Closely Related" to other SDCI construction permits/projects? ◇ ○ Yes ◉ No

"Closely Related" SDCI Construction Permit Numbers

Is this project associated with a Short Plat or Subdivision? ○ Yes ◉ No SDCI MUP Number

Was the project lot created or altered in size after Jan 1, 2016? No

Total Site Area	5,750	sf ◇	Total Closely Related and/or Short Plat/Subdivision Site Area		sf ◇
Total Existing Hard Surface Area	1,630	sf ◇			
Total New plus Replaced Hard Surface Area (NPRHS)	3,261	sf ◇	Total Closely Related and/or Short Plat/Subdivision NPRHS		sf ◇
Total New and/or Replaced Lawn/Landscaping	2,489	sf ◇			
Undisturbed and Protected Site Area	0	sf ◇			

Site Information

Note: Reference the Preliminary Assessment Report (PAR) to complete this section.

Approved Point of Stormwater Discharge: Curb Weep Hole

Drainage Basin: N/A for Single Family Projects

Is the downstream drainage system considered Capacity Constrained by SPU?

Approved Point of Wastewater Discharge: Public Sanitary Sewer Main

Approved Point of Sub-Surface Discharge:

Required Flow Control Standard: ☐ Pre-Developed Pasture ☐ Pre-Developed Forest ☐ Peak Control ☐ Wetland Protection ☐ Existing Conditions ☐ None

Project will permanently discharge groundwater? ◇ No

Required Water Quality Treatment Standard ◇ ☐ Oil Control ☐ Enhanced ☐ Basic ☑ None

Total Pollution Generating Hard Surface Area	0	sf	w/ Closely Related/Short Plat/Subdiv.		sf ◇
Total Pollution Generating Pervious Surface Area	0	sf	w/ Closely Related/Short Plat/Subdiv.		sf ◇

Environmental Critical Areas ◇

☐ Steep Slope ☐ Potential Slide ☐ Riparian Corridor ☐ Wetland ☐ Liquefaction ☐ Flood Prone
☐ Landfill ☐ Known Landslide ☐ Fish / Wildlife ☐ Peat / Groundwater Management ☐ Shoreline Habitat

Is there soil and/or groundwater contamination on this site? No Source Control is required No ◇

Infiltration Information

Is infiltration investigation required? No Why? Site is mapped as "infltr. investigation not required"

Is infiltration on the site feasible?

Site Measured Infiltration Rate x Infiltration Rate Correction Factor 0.5 = 0 Site Design Inf Rate

On-site Stormwater Management (select List Approach or Performance Standard) ◇

◉ On-site List Approach (Pre-sized) Calculator -- Complete the Surface tabs and BMP Sizing tabs (Most commonly used)

○ On-site Performance Standard -- Stormwater modeling by Civil Engineer ◇ (Also for No Off-site Point of Discharge) ◇

Number of roof areas: 2

Number of other surface areas: 1

Note total area entered on surface tabs (plus permeable pavement facility area) does not match total new plus replaced hard surface area entered above.

Surface	Surfaces Description	On-site BMP	Contrib. Area (sf)	Facility Size (sf)	Facility Configuration
1	Roof:SFR ROOF	Non-Infiltrating Bioretention #1	1,817	22 sf	Vertical sides 6 inch
2	Roof:GARAGE ROOF	Non-Infiltrating Bioretention #2	823	10 sf	Vertical sides 6 inch
3	Surface:PPS PAVERS	Permeable Pavement Surface	620	620 sf	

Total New/Replaced Roof Area	2,640	Total Roof Area Managed	2,640
Total New/Replaced Other Surface Area	620 ◇	Total Other Surface Managed	620
Total Area Managed	3,260 sf	Total Volume Managed On Site	28,089 gal
Total compost required for soil amendment	15.4318 cy	*Volume of compost will be verified by the Inspector.*	

On-site Stormwater Management Calculator - List Approach
Surface Identification and BMP Evaluation for Single Family Residential Projects

Project No.	**6929137-CN**
Hard Surface Number	1
Hard Surface Type	Roof
Hard Surface Description	SFR ROOF
Surface Area (sf)	1817

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria
Full Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.
Infiltration Trench	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting - Category 2 Sizing *Evaluation not required but allowed.*	Not Evaluated	
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface *Evaluation not allowed for roof surfaces.*	Not Evaluated	
Sidewalk/Trail Compost-Amended Strip *Evaluation not allowed for roof surfaces.*	Not Evaluated	

Category 3

BMP	Feasibility	Infeasibility Criteria
Sheet Flow Dispersion	Infeasible	7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
Concentrated Flow Dispersion *Evaluation not allowed for roof surfaces.*	Not Evaluated	
Splashblock Downspout Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.
Trench Downspout Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.

Category 4

BMP	Feasibility	Infeasibility Criteria
Non-Infiltrating Bioretention	**Use BMP**	**Go to BMP Sizing**
Rainwater Harvesting - Category 4 Sizing *Evaluation not required but allowed.*		
Vegetated Roof System *Evaluation not required but allowed.*		

Category 5

BMP	Feasibility	Infeasibility Criteria
Single-family Residential Cisterns		
Perforated Stub-out Connection		
Trees *Evaluation not allowed for roof surfaces.*		

On-site Stormwater Management Calculator - List Approach
Surface Identification and BMP Evaluation for Single Family Residential Projects

Project No.	**6929137-CN**
Hard Surface Number	2
Hard Surface Type	Roof
Hard Surface Description	GARAGE ROOF
Surface Area (sf)	823

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria
Full Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.
Infiltration Trench	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting - Category 2 Sizing *Evaluation not required but allowed.*	Not Evaluated	
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface *Evaluation not allowed for roof surfaces.*	Not Evaluated	
Sidewalk/Trail Compost-Amended Strip *Evaluation not allowed for roof surfaces.*	Not Evaluated	

Category 3

BMP	Feasibility	Infeasibility Criteria
Sheet Flow Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.
Concentrated Flow Dispersion *Evaluation not allowed for roof surfaces.*	Not Evaluated	
Splashblock Downspout Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.
Trench Downspout Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.

Category 4

BMP	Feasibility	Infeasibility Criteria
Non-Infiltrating Bioretention	**Use BMP**	**Go to BMP Sizing**
Rainwater Harvesting - Category 4 Sizing *Evaluation not required but allowed.*		
Vegetated Roof System *Evaluation not required but allowed.*		

Category 5

BMP	Feasibility	Infeasibility Criteria
Single-family Residential Cisterns		
Perforated Stub-out Connection		
Trees *Evaluation not allowed for roof surfaces.*		

On-site Stormwater Management Calculator - List Approach
Surface Identification and BMP Evaluation for Single Family Residential Projects

Project No.	**6929137-CN**
Hard Surface Number	3
Hard Surface Type	Non-Roof
Hard Surface Description	PPS PAVERS
Surface Area (sf)	620

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria
Full Dispersion	Infeasible	8 The dispersion flow path area does not provide positive drainage.
Infiltration Trench *Evaluation not required but allowed.*	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well *Evaluation not required but allowed.*	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting - Category 2 Sizing	Not Evaluated	
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface	**Use BMP**	**Go to BMP Sizing**
Sidewalk/Trail Compost-Amended Strip	-	

Category 3

BMP	Feasibility	Infeasibility Criteria
Sheet Flow Dispersion	-	
Concentrated Flow Dispersion	-	
Splashblock Downspout Dispersion *Evaluation not allowed for non-roof surfaces.*		
Trench Downspout Dispersion *Evaluation not allowed for non-roof surfaces.*		

Category 4

BMP	Feasibility	Infeasibility Criteria
Non-Infiltrating Bioretention	-	
Rainwater Harvesting - Category 4 Sizing		
Vegetated Roof System *Evaluation not allowed for non-roof surfaces.*		

Category 5

BMP	Feasibility	Infeasibility Criteria
Single-family Residential Cisterns *Evaluation not allowed for non-roof surfaces.*		
Perforated Stub-out Connection *Evaluation not allowed for non-roof surfaces.*		
Trees		

On-site Stormwater Management Calculator - List Approach
BMP Sizing

Version 09-30-2021

More than one surface can drain to the same BMP. For example, a garage roof and driveway may be managed by a single infiltration trench. Please indicate which surfaces are draining to which BMPs in the dropdown menus.

Surface	Area (sf)	Select BMP
1	1,817	Non-Infiltrating Bioretention #1
2	823	Non-Infiltrating Bioretention #2
3	620	Permeable Pavement Surface #1

BMP	BMP Facility Inputs		BMP Size and Credit
Non-Infiltrating Bioretention #1	Contributing Area (sf)	1,817	22 sf
	Ponding Depth (inch)	6	13,131 gal managed/year
	Sideslopes	Vertical sides	
Non-Infiltrating Bioretention #2	Contributing Area (sf)	823	10 sf
	Ponding Depth (inch)	6	5,948 gal managed/year
	Sideslopes	Vertical sides	
Permeable Pavement Surface #1	Contributing Area (sf)	620	620 sf
			9,010 gal managed/year

On-site Stormwater Management Calculator
Infeasibility Criteria

Version 09-30-2021

Infeasibility Criteria

Full Dispersion
1 Installation requires removal of an existing tree.
2 Installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
8 The dispersion flow path area does not provide positive drainage.
9 The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).
10 The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).
11 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slope to a 500 foot maximum setback).
12 The dispersion flowpath area is within 10 feet of a proposed or existing septic system or drainfield.
13 The site has less than a 65 to 10 ratio of the native vegetation area to the impervious area.
14 The minimum native vegetation flowpath length is less than 100 feet.

Infiltration Trench
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
8 The 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 or subgrades.
9 The area available for siting would threaten shoreline structures such as bulkheads.
10 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
11 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
12 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
13 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
14 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2. and Appendix D).
15 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
16 Field testing indicates potential infiltration trench site(s) have a measured underlying soil infiltration rate less than 5 inches per hour (Volume 3, Section 5.4.2).
17 Where the site cannot be reasonably designed to locate a catch basin between the infiltration trench and point of connection to the public system.

Drywell
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
8 The 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 or subgrades.
9 The area available for siting would threaten shoreline structures such as bulkheads.
10 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
11 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
12 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
13 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
14 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2. and Appendix D).
15 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
16 Field testing indicates potential drywell site(s) have a measured underlying soil infiltration rate less than 5 inches per hour (Volume 3, Section 5.4.3).
17 Where the site cannot be reasonably designed to locate a catch basin between the drywell and point of connection to the public system.

Rain Garden
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
8 The 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 or subgrades.
9 The area available for siting would threaten shoreline structures such as bulkheads.
10 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
11 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
12 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
13 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
14 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2. and Appendix D).
15 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
16 In the right-of-way, the longitudinal road slope exceeds 4 percent.
17 The rain garden would have a linear geometry with a longitudinal slope greater than 8 percent.
18 The minimum bottom width of the rain garden (12-inch average) cannot be met due to, but not limited to: encroachment within the critical root zone of an existing tree(s) or minimum setbacks to structures, utilities, or property lines.
19 The infiltration area is within the minimum vertical or horizontal clearance from utilities, according to clearances required by the utility owner.
20 For projects in the right-of-way, the total rain garden top area would be less than 500 square feet and the project discharges to: A designated receiving water body or, A combined system, or A capacity constrained system which does not drain to a creek wetland or small lake.
21 Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inches per hour.

Infiltrating Bioretention
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
8 The 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 or subgrades.
9 The area available for siting would threaten shoreline structures such as bulkheads.
10 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
11 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
12 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
13 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
14 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2. and Appendix D).
15 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
16 The infiltrating bioretention facility would have a linear geometry with a longitudinal slope greater than 8 percent.
17 The minimum bottom width of the infiltrating bioretention facility (2 feet for facilities with vertical sides and 18 inch average for facilities with sloped sides) cannot be met due to, but not limited to: encroachment within the critical root zone of an existing tree(s) or minimum setbacks to structures, utilities, or property lines.
18 The infiltration area is within the minimum vertical and horizontal clearance from utilities, according to clearances required by the utility owner.
19 Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inches per hour.
20 Field testing indicates soils have a measured underlying soil infiltration rate less than 0.6 inches per hour and an underdrain cannot be installed per the design criteria.
21 The facility with an underdrain would route underdrained water to a nutrient-critical receiving water.
22 In the right-of-way, installation requires a vertical walled facility.

Rainwater Harvesting
1 Installation requires removal of an existing tree.
2 Installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage. (Requiring a pump as the result of using the Rainwater Harvesting BMP does not make this BMP infeasible.)
7 Project lacks non-pollution-generating roof from which to harvest rainwater.
8 Non-potable water demand is insufficient to meet the On-site Performance Standard per modeling conducted in accordance with Volume 3, Section 5.5.1.6.
9 Installation is not economically feasible based on reasonable consideration of financial cost (e.g., roof area is less than 20,000 sf or the ratio of roof area to average daily rainwater demand is less than 10,000 square feet/gpm) (refer to Appendix H). Documentation is required.

Permeable Pavement Facility
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
8 The 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 or subgrades.
9 The area available for siting would threaten shoreline structures such as bulkheads.
10 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
11 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
12 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
13 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
14 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2, and Appendix D).
15 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
16 Infiltrating or ponding water below pavement area would compromise adjacent pavements.
17 Fill soils are used that can become unstable when saturated.
18 The permeable pavement design does not provide sufficient strength to support heavy loads in areas with "industrial activity" as identified in 40 CFR 122.26(b)(14).
19 The subgrade slope exceeds 6 percent after reasonable efforts to grade.
20 The permeable pavement wearing course slope exceeds 6 percent after reasonable efforts to grade.
21 For projects in the right-of-way, the permeable pavement surface area would be less than 2,000 square feet of contiguous pavement and the project discharges to: a designated receiving water body, a combined system, or a capacity constrained system which does not drain to a creek wetland or small lake.
22 The anticipated mature tree spread (based on tree species) would overhang more than 50 percent of permeable pavement area.
23 The pavement is over a structure, such as, but not limited to: parking garages, box culverts, and bridges.
24 The pavement is subject to long-term excessive sediment deposition (e.g., construction and landscaping material yards).
25 Underlying soils are unsuitable for supporting traffic loads when saturated (e.g., a residential access road has a California Bearing Ratio of 5 percent or less).
26 Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inches per hour.
27 Pavement is replacing an existing pollution-generating hard surface in the right-of-way.
28 The street type is classified as arterial or collector rather than local access. Refer to RCW 35.78.010, RCW 36.86.070, and RCW 47.05.021. Note: This infeasibility criterion does not extend to sidewalks and other non-traffic bearing surfaces associated with the collector or arterial.
29 Streets that receive more than very low traffic volumes, and areas having more than very low truck traffic. Streets with a projected average daily traffic volume of 400 vehicles or less are very low volume roads (AASHTO, 2001)(U.S. Dept. of Transportation, 2013). Areas with very low truck traffic volumes are streets 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.
30 The pavement area is defined as a "high use site" in SMC, Section 22.801.090.
31 In areas with "industrial activity" as identified in 40 CFR 122.26(b)(14).
32 Where the risk of concentrated pollutant spills is more likely, including, but not limited to, gas stations, truck stops, and industrial chemical storage sites.
33 In areas where routine, heavy roadway applications of sand occur in frequent snow zones to maintain traction during weeks of snow and ice accumulation, including sidewalks within 7 feet of roadways with sand application.
34 Where runon from unstabilized erodible areas would occur without presettling.
35 The areas contributing runoff to the permeable pavement facilities exceed the maximum run-on limits: Pollution-generating impervious surfaces (e.g., roadways, parking lots) exceed the maximum run-on area ratio of 2:1, Non-pollution generating impervious surfaces (e.g., roofs, sidewalks) and stabilized pervious surfaces exceed the maximum run-on area ratio of 5:1.
36 The Director has determined that permeable pavement in active zones of a skate park, bike park, or sport court violates safety standards.

Permeable Pavement Surface
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltrating or ponding water below pavement area would compromise adjacent pavements.
8 Fill soils are used that can become unstable when saturated.
9 The permeable pavement design does not provide sufficient strength to support heavy loads in areas with "industrial activity" as identified in 40 CFR 122.26(b)(14).
10 The subgrade slope exceeds 6 percent after reasonable efforts to grade.
11 The permeable pavement wearing course slope exceeds 6 percent after reasonable efforts to grade.
12 For projects in the right-of-way, the permeable pavement surface area would be less than 2,000 square feet of contiguous pavement and the project discharges to: a designated receiving water body, a combined system, or a capacity constrained system which does not drain to a creek wetland or small lake.
13 The anticipated mature tree spread (based on tree species) would overhang more than 50 percent of permeable pavement area.
14 The pavement is over a structure, such as, but not limited to: parking garages, box culverts, and bridges.
15 The pavement is subject to long-term excessive sediment deposition (e.g., construction and landscaping material yards).
16 Underlying soils are unsuitable for supporting traffic loads when saturated (e.g., a residential access road has a California Bearing Ratio of 5 percent or less).
17 Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inches per hour.
18 Pavement is replacing an existing pollution-generating hard surface in the right-of-way.
19 The street type is classified as arterial or collector rather than local access. Refer to RCW 35.78.010, RCW 36.86.070, and RCW 47.05.021. Note: This infeasibility criterion does not extend to sidewalks and other non-traffic bearing surfaces associated with the collector or arterial.
20 Streets that receive more than very low traffic volumes, and areas having more than very low truck traffic. Streets with a projected average daily traffic volume of 400 vehicles or less are very low volume roads (AASHTO, 2001)(U.S. Dept. of Transportation, 2013). Areas with very low truck traffic volumes are streets 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.
21 The pavement area is defined as a "high use site" in SMC, Section 22.801.090.
22 In areas with "industrial activity" as identified in 40 CFR 122.26(b)(14).
23 Where the risk of concentrated pollutant spills is more likely, including, but not limited to, gas stations, truck stops, and industrial chemical storage sites.
24 In areas where routine, heavy roadway applications of sand occur in frequent snow zones to maintain traction during weeks of snow and ice accumulation, including sidewalks within 7 feet of roadways with sand application.
25 Where runon from unstabilized erodible areas would occur without presettling.
26 Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inches per hour (Note: field infiltration tests are not required for permeable pavement surfaces, but must be used to demonstrate infeasibility).
27 The site is a contaminated site or abandoned landfill.
28 Installation is within 10 feet of a petroleum, chemical, or liquid hazardous waste storage tank or connecting underground pipes.
29 Run-on from an adjacent impervious area is greater than 10 percent of the permeable pavement surface area.
30 A licensed professional (as defined in Appendix D, Section D-1) recommends permeable pavement not be used anywhere within the project site due to reasonable concerns of erosion, slope failure, or flooding (requires a signed and stamped written determination based on site-specific conditions from a licensed professional).
31 The Director has determined that permeable pavement in active zones of a skate park, bike park, or sport court violates safety standards.
32 Subsurface investigation demonstrate groundwater or hydraulically-restrictive layer is too shallow per the Minimum Vertical Separation table.

Sidewalk/Trail Compost-Amended Strip
1 Installation requires removal of an existing tree.
2 Installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
8 The dispersion flow path area does not provide positive drainage.
9 The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).
10 The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).
11 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slope to a 500 foot maximum setback).
12 The dispersion flowpath area is within 10 feet of a proposed or existing septic system or drainfield.
13 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
14 The 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 or subgrades.
15 The area available for siting would threaten shoreline structures such as bulkheads.
16 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
17 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
18 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
19 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
20 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2, and Appendix D).
21 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
22 The flowpath downstream of the Sidewalk/Trail Compost-Amended Strip is within 10 feet of a proposed or existing septic system or drainfield, as measured from the toe of the Sidewalk/Trail Compost-Amended Strip slope.
23 The sidewalk or trail to be dispersed exceeds a lateral slope of 5 percent or a longitudinal slope of 8 percent.
24 The sidewalk or trail to be dispersed has a lateral slope of less than 1 percent.
25 Field testing indicates underlying soils have a design soil infiltration rate less than 0.15 inch per hour. Note that field infiltration tests are not required for Sidewalk/Trail Compost-Amended Strip, but must be used to demonstrate infeasibility.
26 The minimum Sidewalk/Trail Compost-Amended Strip design criteria cannot be met.

Sheet Flow Dispersion
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
8 The dispersion flow path area does not provide positive drainage.
9 The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).
10 The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).
11 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slope to a 500 foot maximum setback).
12 The dispersion flowpath area is within 10 feet of a proposed or existing septic system or drainfield.
13 The area to be dispersed (e.g., driveway, patio) exceeds a slope of 15 percent.
14 The minimum vegetated flow path for sheet flow dispersion cannot be met. Note: A 10 foot flowpath is required to disperse runoff from a contributing flow length of up to 20 feet. An additional 10 feet of flow path is required for each additional 20 feet of contributing flow path or fraction thereof. Refer to Volume 3, Figure 5.5.
15 The flowpath does not meet the minimum horizontal setback requirements to property lines, structures and other flowpaths (refer to Volume 3, Section 5.3.5).

Concentrated Dispersion
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
8 The dispersion flow path area does not provide positive drainage.
9 The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).
10 The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).
11 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slope to a 500 foot maximum setback).
12 The dispersion flowpath area is within 10 feet of a proposed or existing septic system or drainfield.
13 There are no concentrated flows to disperse.
14 The minimum dispersion trench length of 10 feet cannot be met.
15 The vegetated flow path for the dispersion trench is less than 25 feet
16 The vegetated flow path for a rock pad is less than 50 feet.
17 Greater than 700 square feet of surface area drains to the BMP.
18 The flowpath does not meet the minimum horizontal setback requirements to property lines, structures and other flowpaths (refer to Volume 3, Section 5.3.6).

Splashblock Downspout Dispersion
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
8 The dispersion flow path area does not provide positive drainage.
9 The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).
10 The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).
11 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slope to a 500 foot maximum setback).
12 The dispersion flowpath area is within 10 feet of a proposed or existing septic system or drainfield.
13 There are no downspouts.
14 The vegetated flowpath is less than 50 feet.
15 Greater than 700 square feet of surface area drains to the BMP.
16 The flowpath does not meet the minimum horizontal setback requirements to property lines, structures and other flowpaths (refer to Volume 3, Section 5.3.3).

Trench Downspout Dispersion
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 A licensed professional recommends dispersion not be used anywhere within project site due to reasonable concerns of erosion, slope failure, or flooding.
8 The dispersion flow path area does not provide positive drainage.
9 The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).
10 The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).
11 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slope to a 500 foot maximum setback).
12 The dispersion flowpath area is within 10 feet of a proposed or existing septic system or drainfield.
13 There are no downspouts.
14 The minimum dispersion trench length of 10 feet for every 700 square feet of drainage area cannot be met.
15 The vegetated flowpath is less than 25 feet.
16 The flowpath is within the setbacks to property lines, structures and other flowpaths (refer to Volume 3, Section 5.3.4).

Non-infiltrating Bioretention
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 The minimum bottom width of the non-infiltrating bioretention facility (2 feet) cannot be met due to, but not limited to: encroachment within the critical root zone of an existing tree(s), minimum setbacks to structures / utilities, or project limits/planting strip too small.
8 Minimum vertical and horizontal clearances from utilities are unachievable as required by utility owner.
9 The facility would route underdrained water to a nutrient-critical receiving water.
10 The area available for siting is within a setback equal to the height of the slope to a maximum of 50 feet from the top of steep slope and known landslide area.
11 The BMP would be located on a structure or roof that cannot provide sufficient structural support for the BMP.

Vegetated Roof
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Project does not include a roof.
8 Roof design has a slope less than 1 degree (0.2:12) or greater than 10 degrees (2:12).
9 Installation is not economically feasible based on reasonable consideration of financial cost (refer to Appendix H). Documentation is required.
10 This portion of the roof is an amenity area subject to pedestrian use (e.g. balcony, patio, walkway, pet runs, etc.).
11 The portion of the roof is required for HVAC equipment and/or maintenance access ways (e.g., window washing, HVAC maintenance, etc.).
12 This portion of the roof is completely covered with Solar Panels.

Perforated Stub-out Connection
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.
8 The 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 or subgrades.
9 The area available for siting would threaten shoreline structures such as bulkheads.
10 Evaluation of infiltration is not required per the "Infiltration Investigation Map".
11 The area available for siting does not allow for overflow conveyance to an approved point of discharge per Volume 3, Section 4.3.2.
12 The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to Volume 3, Section 3.2).
13 The area available for siting does not meet the minimum horizontal setback requirements (refer to Volume 3, Section 3.2).
14 The area available for siting does not meet the minimum vertical setback requirements (refer to Volume 3, Section 3.2. and Appendix D).
15 Infiltration is restricted due to contaminated soil or groundwater (refer to Volume 3, Section 3.2).
16 The location for the perforated pipe portion of the system is under impervious or heavily compacted (e.g., driveways and parking areas) surfaces.
17 The minimum perforated stub-out length of 10 feet per 5,000 square feet of contributing roof area cannot be met.
18 Where the site cannot be reasonably designed to locate a catch basin between the perforated stub-out and point of connection to the public system.

Trees
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Unable to maintain a desired access of 36 inches in a required building setback from a property line.
4 Unable to maintain clearance for required ingress, egress, or ADA pathways.
5 The mature height, size, and/or rooting depth is not compatible with Medium and Large trees listed in the current Seattle Master Tree List.

Single Family Residential Cistern
1 Installation requires removal of an existing tree.
2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
3 Installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.
4 Unable to maintain a desired access of 36 inches in a required building setback from a property line,
5 Unable to maintain clearance for required ingress, egress, or ADA pathways.
6 Installation would require a pump when a pump is not already required to provide site storm drainage.
7 Project does not include non-pollution generating surfaces.
8 The SFR cistern would be within restricted setbacks.

Memorandum of Drainage Control

Exhibit A: On-site Stormwater Management Summary Sheet

This information is taken from the Drainage Control Plan approved as part of a building, site work or master use plan.

Project Information

Site Address	1719 46TH AVE SW	
SDCI Project Number	6929137-CN	
Project Type	Single-Family Residential	
Total Site Area	5,750	sf
Existing Hard Surface Area	1,630	sf
Total New plus Replaced Hard Surface Area	3,261	sf
Total New and/or Replaced Lawn and Landscaping	2,489	sf
Undisturbed and protected site area	0	sf

Site Information

Approved Point of Stormwater Discharge	Curb Weep Hole
Drainage Basin	N/A for Single Family Projects
Approved Point of Wastewater Discharge	Public Sanitary Sewer Main
Approved Point of Sub-Surface Discharge	
Flow Control (See Exibit B if required)	
Flow Control is required	No
Flow Control Standard(s)	
Water Quality Treatment (See Exhibit C if required)	
Water Quality Treatment is required	No
Water Quality Treatment Standard(s)	
Structural Source Control is required (See Exhibit D if required)	No

On-site Stormwater Management

Surface	Description	On-site BMP	Contrib. Area (sf)	Facility Size (sf)	Facility Configuration
1	Roof:SFR ROOF	Non-Infiltrating Bioretention	1817 sf	22 sf	Vertical sides 6 inch
2	Roof:GARAGE ROOF	Non-Infiltrating Bioretention	823 sf	10 sf	Vertical sides 6 inch
3	Surface:PPS	Permeable Pavement	620 sf	620 sf	