Downspout Dispersion

This checklist is intended to highlight items critical to the performance of downspout dispersion that need to be addressed in the design plans and verified by a City of Seattle (COS) Seattle Public Utilities (SPU) plan reviewer or a designated representative. Some items have detailed requirements that may not be explicitly stated; refer to the Stormwater Flow Control and Water Quality Treatment Technical Requirements Manual (Manual) for specifics. Resources and their links are listed at the bottom of this checklist.

Items identified by a **FC** are GSI Engineering Design Feasibility Considerations as discussed in Appendix B of the "Requirements for Green Stormwater Infrastructure to the Maximum Extent Feasible" Director's Rule that may prevent this technology from being implemented on the project site.

Technology Description
Downspout dispersion BMPs are splashblocks or gravel-filled trenches that serve to spread roof runoff over vegetated pervious areas. Dispersion attenuates peak flows by slowing entry of the runoff into the conveyance system, allows for some infiltration, and provides some water quality benefits.

Design Requirements (Manual Volume 3, Section 4.4.3)

	Review Item
	1. Splashblocks
	▪ Downspout discharge point minimum requirements:
FC	▫ Maximum of 700 square feet of roof area may drain to each splashblock
	▫ A splashblock or pad of crushed rock (2 feet wide by 3 feet long by 6 inches deep) is shown at each downspout discharge point
	▫ A downspout extension is suggested when the ground is fairly level, if the structure includes a basement, or if foundation drains are proposed.
FC	▫ Plans show a minimum 1 percent fall from the building to the splashblocks
FC	▪ Dispersion area minimum requirements:
	▫ Vegetated flow path of at least 50 feet between discharge point and any property line, structure, slope, stream, wetland, lake or other impervious surface
	▫ If more than one discharge point, they remain separate and are shown at least 50 feet apart at the downstream end of the shorter segment
	▫ Vegetated flow path is covered with well-established lawn or landscape area (in accordance with the amended soil requirements), landscaping with well-established groundcover, or native vegetation with natural groundcover
	▫ Dispersion area is not located within Landslide-Prone Critical Areas as defined by the Regulations for Environmental Critical Areas (SMC 25.09.020)
	▫ Dispersion area is not located within a setback above a Steep Slope Critical Area (SMC 25.09.020), calculated as 10 times the height of the slope rise (to a 500 foot maximum), unless demonstrated as feasible by a

	geotechnical analysis.
	▫ Dispersion area is not located within 100 feet of a known or contaminated site or abandoned landfill.
	▫ If site has a septic system, the dispersion area is located down gradient of the drainfield.
FC	▫ Plans show a minimum 1 percent fall from the dispersion area to the approved point of discharge
	▪ Overflow conveyance minimum requirements:
	▫ Dispersion area conveys flows, to an approved discharge point per Section 4.2.5. Large storms are considered.
	▫ Drawings indicate that no erosion or flooding of downstream properties will result.
	▪ GSI credit provided based on Table A.2 of the GSI to the MEF Director's Rule, or if applicable, flow control credit provided based on Table 4.10 or dispersion is evaluated using continuous modeling and the assumption in Table 4.11.
	2. Dispersion Trenches
	▪ Dispersion trench minimum requirements:
	▫ Minimum of 18 inches deep and 2 feet wide
	▫ Trench is level and aligned parallel to site contours
	▫ Water is delivered to the trench via a perforated or slotted pipe with a minimum diameter of 4 inches. Pipe is shown with a minimum of 6 inches of cover.
	▫ For 700 sf of roof area, the trench is 10-feet long by 2-feet wide; for larger areas draining to the dispersion trench, a dispersion device must be shown within the trench and the trench length is at least 10-feet long per 700 sf of roof area to a maximum of 50 feet.
FC	▫ Plans show a minimum 1 percent fall from the building to the dispersion trench
	▫ Trench is located at least 5 feet from any structure or property line
FC	▪ Dispersion area minimum requirements:
	▫ Vegetated flow path of at least 25 feet between the outlet of the trench and any property line, structure, slope, stream, wetland, lake or other impervious surface. A vegetated flow path of at least 50 feet between the outlet of the trench and any steep slope.
	▫ Vegetated flow path is covered with well-established lawn or landscape area (in accordance with the amended soil requirements), landscaping with well-established groundcover, or native vegetation with natural groundcover
	▫ Dispersion area is not located within Landslide-Prone Critical Areas as defined by the Regulations for Environmental Critical Areas (SMC 25.09.020)
	▫ Dispersion area is not located within a setback above a Steep Slope Critical Area (SMC 25.09.020), calculated as 10 times the height of the slope rise (to a 500 foot maximum), unless demonstrated as feasible by a geotechnical analysis.
	▫ Dispersion area is not located within 100 feet of a known or

	contaminated site or abandoned landfill.
	▫ If site has a septic system, the dispersion area is located down gradient of the drainfield.
FC	▫ Plans show a minimum 1 percent fall from the dispersion area to the approved point of discharge
	▪ Overflow conveyance minimum requirements:
	▫ Dispersion area conveys flows, to an approved discharge point per Section 4.2.5. Large storms are considered.
	▫ Drawings indicate that no erosion or flooding of downstream properties will result.
	▪ GSI credit provided based on Table A.2 of the GSI to the MEF Director's Rule, or if applicable, flow control credit provided based on Table 4.10 or dispersion is evaluated using continuous modeling and the assumption in Table 4.11.

Resources:

- Green Stormwater Infrastructure (GSI) website (specifications, CADD drawings, plant lists, links to other resources)
  http://www.seattle.gov/util/greeninfrastructure

- Stormwater Code, Director's Rules (Manual and GSI to MEF), Client Assistance Memos (CAMs), GSI and flow control calculators for pre-sized facilities
  http://www.seattle.gov/dpd/Codes/StormwaterCode/Overview/default.asp