

APPENDIX C

On-site Stormwater List BMP Infeasibility Criteria

Note:

Some pages in this document have been purposely skipped or blank pages inserted so that this document will copy correctly when duplexed.

This appendix provides infeasibility criteria for use in evaluating BMPs to meet the On-site Stormwater Management Requirement using the On-Site List approach (SMC, Section 22.805.070.D.2) to manage new and replaced hard surfaces. Refer to *Volume 1, Section 5.2.2* to determine which On-site BMPs require evaluation for a project. Evaluation is based on project type, discharge location, and other criteria. Step-by-step instructions for using the On-site List Approach are provided in *Volume 3, Section 3.3.1*.

Prior to evaluating On-site BMPs, review the site design consideration in *Volume 1, Chapter 7 – Site Assessment and Planning* to conserve natural areas, retain native vegetation, reduce impervious surfaces, and integrate stormwater controls into the existing site layout to the maximum extent feasible. The infeasibility criteria provided in this appendix apply to BMPs if the area proposed for the BMP is the only available area for the BMP, after all reasonable efforts to regrade the site and allow for alternative placement of the BMP have been made.

When using the On-site List approach, an on-site BMP is considered infeasible if an infeasibility criterion in Tables C.1 through C.6 is met.

Table C.1. On-site List Infeasibility Criteria: All Dispersion and Infiltration BMPs.

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
All BMPs	<p>Installation requires removal of an existing tree. To use this infeasibility criterion, the tree must be in good health and meet minimum size requirements: deciduous trees must have trunks at least 4-5² inches in diameter measured 6 inches above the ground, and evergreen trees must be at least 4-5 feet tall. In addition, the existing tree must be in an area that will be protected throughout construction.</p> <p>Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).</p> <p>Where BMP installation would require pumping to a designated point of discharge, but failure of the pump may destabilize a steep slope.</p> <p>Where unable to maintain a desired access of 36 inches in a required building setback from a property line, except when using the Soil Amendment BMP (<i>Volume 3, Section 5.1</i>). <u>(Not applicable to permeable pavement facilities or surfaces.)</u></p> <p>Where unable to maintain clearance for required ingress, egress, or ADA pathways. <u>(Not applicable to permeable pavement facilities or surfaces.)</u></p> <p>Where BMP 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.</p>	

Table C.1 (continued). On-site List Infeasibility Criteria: All Dispersion and Infiltration BMPs.

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
All Dispersion BMPs	<p>A licensed professional (as defined in <i>Appendix D, Section D-1</i>) recommends dispersion not be used anywhere within 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).</p> <p>The dispersion flow path area does not provide positive drainage.</p> <p>The dispersion flowpath area is within a landslide-prone area (SMC, Section 25.09.080).</p> <p>The dispersion flowpath area is within 100 feet of a contaminated site or landfill (active or closed).</p> <p>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).</p> <p>The dispersion flowpath area is within 30-40 feet of a proposed or existing septic system or drainfields <u>and reserve areas or within 10 feet of proposed or existing septic sewage tanks and distribution boxes.</u></p>	
All Infiltration BMPs	<p>The following criteria each establish that the BMP is infeasible but only if based on an evaluation of site-specific conditions and documented within a signed and stamped written determination from a licensed professional (as defined in <i>Appendix D, Section D-1</i>):</p> <p>Infiltration is not recommended due to reasonable concerns about erosion, slope failure, or flooding.</p> <p>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.</p> <p>The area available for siting would threaten shoreline structures such as bulkheads.</p> <p><u>The area available for siting would threaten existing or proposed buildings or structures.</u></p> <p><u>Infiltration is not recommended based on the results of a Groundwater Mounding analysis or a Characterization of Infiltration Receptor analysis per Appendix D, Sections D-5 and D-6.</u></p> <p><u>The bottom of the infiltration facility would be in, or within the minimum vertical setback from, a soil layer determined to be a hydraulically restricted layer per Appendix D, Section D-2.2.4 or solid rock.</u></p> <p>The following criteria each establish that the BMP is infeasible, without further justification, though some criteria evaluation require professional services:</p> <p>Evaluation of infiltration is not required per the “Infiltration Investigation Map.”</p> <p>The area available for siting does not allow for overflow conveyance to an approved point of discharge per <i>Volume 3, Section 4.3.2</i>.</p> <p>The area available for siting is within a steep slope area or land-slide prone area (or setback) (refer to <i>Volume 3, Section 3.2</i>).</p> <p>The area available for siting does not meet the minimum horizontal setback requirements (refer to <i>Volume 3, Section 3.2</i>).</p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	<p>The area available for siting does not meet the minimum vertical setback requirements from groundwater or hydraulically restrictive layers (refer to <i>Volume 3, Section 3.2</i>, and <i>Appendix D</i>).</p> <p>Infiltration is restricted due to contaminated soil or groundwater (refer to <i>Volume 3, Section 3.2</i>).</p>	

Table C.2. On-site List Infeasibility Criteria: Category 1 BMPs.

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
Full Dispersion	<p>One or more of the infeasibility criteria for “All BMPs” or “All Dispersion BMPs” (Table C.1) apply.</p> <p>The site has less than a 65 to 10 ratio of the native vegetation area to the impervious area.</p> <p>The minimum native vegetation flowpath length is less than 100 feet.</p>	
Infiltration Trenches	<p>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</p> <p>Field testing indicates potential infiltration trench site(s) have a measured underlying soil infiltration rate less than 5<u>2</u> inches per hour (<i>Volume 3, Section 5.4.2</i>).</p> <p>Where the site cannot be reasonably designed to locate a catch basin between the infiltration trench and point of connection to the public system.</p>	
Drywells	<p>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</p> <p>Field testing indicates potential drywell site(s) have a measured underlying soil infiltration rate less than 5 inches per hour (<i>Volume 3, Section 5.4.3</i>).</p> <p>Where the site cannot be reasonably designed to locate a catch basin between the drywell and point of connection to the public system.</p>	
Rainwater Harvesting	<p>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</p> <p>Project lacks non-pollution-generating roof from which to harvest rainwater.</p> <p>Non-potable water demand is insufficient to meet the On-site Performance Standard per modeling conducted in accordance with <i>Volume 3, Section 5.5.1.6</i>.</p> <p>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 <i>Appendix H</i>). Documentation is required.</p>	

Table C.3. On-site List Infeasibility Criteria: Category 2 BMPs.^a

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
<p>Rain Gardens</p>	<p>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</p> <p>In the right-of-way, the longitudinal road slope exceeds <u>4-8</u> percent.</p> <p>The <u>For right-of-way applications, the</u> rain garden would have a linear geometry <u>and the roadway has a</u> an <u>with an overall</u> longitudinal slope greater than 8 percent. <u>(Note: this infeasibility criteria is to limit the need to install bioretention systems with numerous weirs to make the bottom slope of bioretention 3 percent or less. Installation, when the overall slope is greater than 8 percent, is allowed but not required for On-site Stormwater Management.)</u></p> <p>The minimum bottom width <u>(12-inch average) or side slopes</u> 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. <u>Refer to City of Seattle Standard Plan No. 133 and Standard Specification 1-07.16(2), 8-01 for applicable root zone requirements.</u></p> <p>The infiltration area is within the minimum vertical or horizontal clearance from utilities, according to clearances required by the utility owner.</p> <p>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inch per hour.</p> <p><u>The facility is located within a 1/4 mile of nutrient critical water body, unless the optional HPBSM and polishing layer are used.</u></p>	
<p>Infiltrating Bioretention Facilities</p>	<p>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</p> <p>In the <u>For- right-of-way applications, t</u>he infiltrating bioretention facility would have a linear geometry <u>and area of siting</u> roadway with an overall a <u>the roadway has with a</u> longitudinal slope greater than 8 percent. <u>(Note: this infeasibility criteria is to limit the need to install bioretention systems with numerous weirs to make the bottom slope of bioretention 3 percent or less. Installation, when the overall slope is greater than 8 percent, is allowed but not required for On-site Stormwater Management.)</u></p> <p>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 <u>due to but</u> not limited to: encroachment within the critical root zone of an existing tree(s) or minimum setbacks to structures, utilities, or property lines <u>(refer to City of Seattle Standard Plan No. 133 for applicable root zone requirements).</u></p> <p>The infiltration area is within the minimum vertical and horizontal clearance from utilities, according to clearances required by the utility owner.</p> <p>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inch per hour.</p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	<p>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.6 inch per hour and an underdrain cannot be installed per the design criteria.</p> <p><u>The facility is located within a 1/4 mile of nutrient critical water body, unless the optional HPBSM and polishing layer are used.</u></p> <p>The facility with an underdrain would route underdrained water to a nutrient-critical receiving water <u>unless the optional HPBSM and polishing layer are used.</u></p> <p>In the right-of-way, installation requires a vertical walled facility.</p> <p><u>A vertical wall facility is required to provide sufficient bottom area and the depth to the bottom of the ponding area from the surrounding grade would need to be 22 inches or more to accommodate gravity flow. -Note: deeper facilities, with handrails if required, are allowed but can be considered infeasible for the on-site list approach.</u></p>	
<p><u>Infiltrating Soil Cell Bioretention with tree</u></p>	<p><u>One or more of the infeasibility criteria for "All BMPs" or "All Infiltration BMPs" (Table C.1) apply.</u></p> <p><u>The infiltrating soil cell bioretention would have a linear geometry with a longitudinal slope greater than 3-5 percent or a bottom slope greater than 3 percent.</u></p> <p><u>The minimum bottom width (2 feet) of the infiltrating soil cell bioretention 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 (refer to City of Seattle Standard Plan No. 133 for applicable root zone requirements).</u></p> <p><u>The infiltration area is within the minimum vertical and horizontal clearance from utilities, according to clearances required by the utility owner.</u></p> <p><u>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inch per hour.</u></p> <p><u>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.6 inch per hour and an underdrain cannot be installed per the design criteria.</u></p> <p><u>The facility is located within a 1/4 mile of nutrient critical water body, unless the optional HPBSM and polishing layer are used.</u></p> <p><u>The facility with an underdrain would route underdrained water to a nutrient-critical receiving water unless the optional HPBSM and polishing layer are used.</u></p> <p><u>The minimum infiltrating soil cell bioretention design criteria cannot be met.</u></p> <p><u>The mature height, size, and/or rooting depth is not compatible with trees listed as approved species in the Green Factor Tree List posted on SDCI's website for parcels and SDOT's Approved Street Tree List for the ROW.</u></p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
Rainwater Harvesting	<p>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</p> <p>Project lacks non-pollution generating roof from which to harvest rainwater.</p> <p>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.</p> <p>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.</p>	
Permeable Pavement Facilities	<p>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</p> <p>The following criteria each establish that the BMP is infeasible but only if based on an evaluation of site-specific conditions and a written recommendation from a licensed professional (as defined in <i>Appendix D, Section D-1</i>):</p> <p>Infiltrating or ponding water below pavement area would compromise adjacent pavements.</p> <p>Fill soils are used that can become unstable when saturated.</p> <p>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).</p> <p>The following criteria each establish that the BMP is infeasible, without further justification, though some criteria require professional services:</p> <p>The subgrade slope exceeds 6 percent after reasonable efforts to grade.</p> <p>The permeable pavement wearing course slope exceeds 6 percent after reasonable efforts to grade.</p> <p>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:</p> <ul style="list-style-type: none"> 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. <p>The anticipated mature tree spread (based on tree species) would overhang more than 50 percent of permeable pavement area.</p> <p>The pavement is over a structure, such as, but not limited to: parking garages, box culverts, and bridges.</p> <p>The pavement is subject to long-term excessive sediment deposition (e.g., construction and landscaping material yards).</p> <p>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).</p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	<p>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inch per hour.</p> <p>Pavement is replacing an existing pollution-generating hard surface in the right-of-way.</p> <p>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.</p>	
<p>Permeable Pavement Facilities (continued)</p>	<p>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.</p> <p>The pavement area is defined as a “high use site” in SMC, Section 22.801.090.</p> <p>In areas with “industrial activity” as identified in 40 CFR 122.26(b)(14).</p> <p>Where the risk of concentrated pollutant spills is more likely, including, but not limited to, gas stations, truck stops, and industrial chemical storage sites.</p> <p>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 driving lanes with sand application.</p> <p>Where runoffrun-on from unstabilized erodible areas would occur without presettling.</p> <p>The areas contributing runoff to the permeable pavement facilities exceed the maximum run-on limits:</p> <p>Pollution-generating impervious surfaces (e.g., roadways, parking lots) exceed the maximum run-on area ratio of 2:1</p> <p>Non-pollution generating impervious surfaces (e.g., roofs, sidewalks) and stabilized pervious surfaces exceed the maximum run-on area ratio of 5:1</p> <p>Where the Director has determined that permeable pavement in active zones of a skate park, bike park, or sport court violates safety standards</p>	
<p>Permeable Pavement Surfaces</p>	<p>One or more of the infeasibility criteria provided for permeable pavement facilities apply. (Note, however, that for permeable pavement surfaces, the infeasibility criteria for “All Infiltration BMPs” are not applicable).</p> <p>Field testing indicates soils have a measured underlying soil infiltration rate less than 0.3 inch per hour (Note: field infiltration tests are not required for</p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	<p>permeable pavement surfaces, but must be used to demonstrate infeasibility).</p> <p>The site is a contaminated site or abandoned landfill.</p> <p>Installation is within 10 feet of a petroleum, chemical, or liquid hazardous waste storage tank or connecting underground pipes.</p> <p>Run-on from an adjacent impervious area is greater than 10 percent of the permeable pavement surface area.</p> <p>A licensed professional (as defined in <i>Appendix D, Section D-1</i>) 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).</p> <p>Where the Director has determined that permeable pavement in active zones of a skate park, bike park, or sport court violates safety standards.</p> <p>Based on subsurface investigation,^a groundwater or hydraulically-restrictive layer is too shallow per the following Minimum Vertical Separation table.</p> <p>The hard surface in question is a set of stairs or a 6 foot long or less landing between sets of stairs.</p>	

Table C.3 (nested table). Permeable Pavement Surfaces, On-site List Infeasibility Criteria: Category 2 BMPs.^a

Season	Minimum Investigation Depth (ft)^b	Minimum Vertical Separation, ft^a Ground-water	Minimum Vertical Separation, ft^a Hydraulically-Restrictive Layer
Wet Season (November – March)	2	1	1
Dry Season (April – October)	3	2	1

^a Subsurface investigation is not required for permeable pavement surfaces, but subsurface investigation must be performed to demonstrate infeasibility due to lack of vertical separation.

^b The minimum investigation depth and vertical separation shall be measured from the bottom of the BMP. The bottom of the BMP is defined as the deepest portion of proposed BMP where water is expected to move into the underlying soil (i.e., at the aggregate subbase or Water Quality Treatment Course [if required]).

Table C.3 (continued). On-site List Infeasibility Criteria: Category 2 BMPs.^a

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
Sidewalk/ Trail Compost- Amended Strip	<p>One or more of the infeasibility criteria for “All BMPs,” or “All Dispersion BMPs” (Table C.1) apply.</p> <p>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.</p> <p>The sidewalk or trail to be dispersed exceeds a cross slope of 5 percent or a longitudinal slope of 8 percent.</p> <p>The sidewalk or trail to be dispersed has a cross slope of less than 1 percent.</p> <p>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 the Sidewalk/Trail Compost-Amended Strip, but must be used to demonstrate infeasibility.</p> <p>The minimum Sidewalk/Trail Compost-Amended Strip design criteria cannot be met.</p>	

^a Category references Parcel-based Project list. Refer to SMC, Section 22.805.070.D and *Volume 1 Section 5.2.2* for categories relevant to other types of projects.

Table C.4. On-site List Infeasibility Criteria: Category 3 BMPs.^a

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
<p>Infiltrating Soil Cell Bioretention without tree</p>	<p><u>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</u></p> <p><u>The infiltrating soil cell bioretention would have a linear geometry with a longitudinal slope greater than 3-5 percent or a bottom slope greater than 3 percent.</u></p> <p><u>The minimum bottom width (2 feet) of the infiltrating soil cell bioretention 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 (refer to City of Seattle Standard Plan No. 133 for applicable root zone requirements).</u></p> <p><u>The infiltration area is within the minimum vertical and horizontal clearance from utilities, according to clearances required by the utility owner.</u></p> <p><u>Field testing indicates a measured underlying soil infiltration rate less than 0.3 inch per hour.</u></p> <p><u>Field testing indicates a measured underlying soil infiltration rate less than 0.6 inch per hour and an underdrain cannot be installed per the design criteria.</u></p> <p><u>The facility is located within a 1/4 mile of nutrient critical water body, unless the optional HPBSM and polishing layer are used.</u></p> <p><u>The facility with an underdrain would route underdrained water to a nutrient-critical receiving water unless the optional HPBSM and polishing layer are used.</u></p> <p><u>The minimum infiltrating soil cell bioretention design criteria cannot be met.</u></p>	
<p>Sheet Flow Dispersion</p>	<p>One or more of the infeasibility criteria for “All BMPs” or “All Dispersion BMPs” (Table C.1) apply.</p> <p>The area to be dispersed (e.g., driveway, patio) exceeds a slope of 15 percent.</p> <p>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 <i>Volume 3, Figure 5.5</i>.</p> <p>The flowpath does not meet the minimum horizontal setback requirements to property lines, structures and other flowpaths (refer to <i>Volume 3, Section 5.3.5</i>).</p>	
<p>Concentrated Flow Dispersion</p>	<p>One or more of the infeasibility criteria for “All BMPs” or “All Dispersion BMPs” (Table C.1) apply.</p> <p>There are no concentrated flows to disperse.</p> <p>The minimum dispersion trench length of 10 feet cannot be met.</p> <p>The vegetated flow path for the dispersion trench is less than 25 feet</p> <p>The vegetated flow path for a rock pad is less than 50 feet.</p> <p>Greater than 700 square feet of surface area drains to the BMP.</p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	<p>The flowpath does not meet the minimum horizontal setback requirements to property lines, structures and other flowpaths (refer to <i>Volume 3, Section 5.3.6</i>).</p>	
<p>Splashblock Downspout Dispersion</p>	<p>One or more of the infeasibility criteria for “All BMPs” or “All Dispersion BMPs” (Table C.1) apply.</p> <p>There are no downspouts.</p> <p>The vegetated flowpath is less than 50 feet.</p> <p>Greater than 700 square feet of surface area drains to the BMP.</p> <p>The flowpath does not meet the minimum horizontal setback requirements to property lines, structures and other flowpaths (refer to <i>Volume 3, Section 5.3.3</i>).</p>	
<p>Trench Downspout Dispersion</p>	<p>One or more of the infeasibility criteria for “All BMPs” or “All Dispersion BMPs” (Table C.1) apply.</p> <p>There are no downspouts.</p> <p>The minimum dispersion trench length of 10 feet for every 700 square feet of drainage area cannot be met.</p> <p>The vegetated flowpath is less than 25 feet.</p> <p>The flowpath is within the setbacks to property lines, structures and other flowpaths (refer to <i>Volume 3, Section 5.3.4</i>).</p>	
<p>Non-Infiltrating Bioretention</p>	<p>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</p> <p><u>In the right-of-way, the infiltrating bioretention facility would have a linear geometry and roadway with an overall a-longitudinal slope greater than 8 percent. (Note: this infeasibility criteria is to limit the need to install bioretention systems with numerous weirs to make the bottom slope of bioretention 3 percent or less. Installation, when the overall slope is greater than 8 percent, is allowed but not required for On-site Stormwater Management.)</u></p> <p>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 (refer to City of Seattle Standard Plan No. 133 for applicable root zone requirements).</p> <p>Minimum vertical and horizontal clearances from utilities are unachievable as required by utility owner.</p> <p>The facility would route underdrained water to a nutrient-critical receiving water <u>unless the optional HPBSM and polishing layer are used.</u></p> <p>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.</p> <p>The BMP would be located on a structure or roof that cannot provide sufficient structural support for the BMP without reasonable effort to increase the strength of the roof design.</p> <p>Less than 1 foot between the liner and seasonal high groundwater elevation.</p>	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	<p><u>A vertical wall facility is required to provide sufficient bottom area and the depth to the bottom of the ponding area from the surrounding grade would need to be 22 inches or more to accommodate gravity flow. Note: deeper facilities, with hand rails if required, are allowed but can be considered infeasible for the on-site list approach.</u></p>	

^a Category references ~~Parcel Single Family Residential~~-based Project list. Refer to SMC, Section 22.805.070.D and *Volume 1 Section 5.2.2* for categories relevant to other types of projects.

~~Table C.5. On-site List Infeasibility Criteria: Category 4 BMPs.^a~~

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
Non-Infiltrating Bioretention		

Table C.5 (continued). On-site List Infeasibility Criteria: Category 4 BMPs.^a

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
<p><u>Non-infiltrating Soil Cell Bioretention with tree</u></p>	<p><u>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</u></p> <p><u>The non-infiltrating soil cell bioretention would have a linear geometry with a longitudinal slope greater than 5 percent or a bottom slope greater than 3 percent.</u></p> <p><u>The minimum bottom width of the non-infiltrating soil cell bioretention (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 (refer to City of Seattle Standard Plan No. 133 for applicable root zone requirements).</u></p> <p><u>Minimum vertical and horizontal clearances from utilities are unachievable as required by utility owner.</u></p> <p><u>The facility would route underdrained water to a nutrient-critical receiving water unless the optional HPBSM and polishing layer are used.</u></p> <p><u>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.</u></p> <p><u>Less than 1 foot between the liner and seasonal high groundwater elevation.</u></p> <p><u>The minimum non-infiltrating soil cell bioretention design criteria cannot be met.</u></p>	
Rainwater Harvesting	See On-site List Infeasibility Criteria in Table C.23.	

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
Vegetated Roof Systems	<p>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</p> <p>Project does not include a roof.</p> <p>Roof design has a slope less than 1 degree (0.2:12) or greater than 10 degrees (2:12).</p> <p>Installation is not economically feasible based on reasonable consideration of financial cost (refer to <i>Appendix H</i>). Documentation is required.</p> <p>The portion of the roof is an amenity area subject to pedestrian use (e.g., balcony, patio, walkway, pet runs, etc.).</p> <p>The portion of the roof is required for HVAC equipment and/or maintenance access ways (e.g., window washing, HVAC maintenance, etc.).</p> <p>The portion of the roof is completely covered with solar panels.</p>	
Residential Cistern	<p>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</p> <p>Project does not include non-pollution generating surfaces.</p> <p>The SFR cistern would be within restricted setbacks.</p>	

^a Category references ~~Parcel~~[Single Family Residential](#)-based Project list. Refer to SMC, Section 22.805.070.D and *Volume 1 Section 5.2.2* for categories relevant to other types of projects.

Table C.6. On-site List Infeasibility Criteria: Category 5 BMPs.^a

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
Perforated Stub-out Connections	<p>One or more of the infeasibility criteria for “All BMPs” or “All Infiltration BMPs” (Table C.1) apply.</p> <p>The location for the perforated pipe portion of the system is under impervious or heavily compacted (e.g., driveways and parking areas) surfaces.</p> <p>The minimum perforated stub-out length of 10 feet per 5,000 square feet of contributing roof area cannot be met.</p> <p>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.</p>	
Trees	<p>The mature height, size, and/or rooting depth is not compatible with Medium and Large trees listed as approved species in the Green Factor Tree List posted on SDCI’s website for parcels and SDOT’s Approved Street Tree List for the ROW. in the reference materials posted on SDCI’s website.</p>	
Single Family Residential (SFR) Cistern	<p>One or more of the infeasibility criteria for “All BMPs” (Table C.1) apply.</p> <p>Project does not include non-pollution generating surfaces.</p>	

Appendix C - On-site Stormwater List BMP Infeasibility Criteria

BMP	On-site List Infeasibility Criteria	Additional Information from Applicant
	The SFR cistern would be within restricted setbacks.	

^a Category references [Parcel Single Family Residential](#)-based Project list. Refer to SMC, Section 22.805.070.D and *Volume 1 Section 5.2.2* for categories relevant to other types of projects.

This page intentionally left blank.