



Worksheet C

What's the best option for your site?



Minimum Requirement #5 (On-Site Stormwater Management)

The following tables summarize the criteria that can be used to justify why you cannot use various stormwater management best management practices (BMPs) for consideration for Minimum Requirement #5. This information is also included under the detailed descriptions of each BMP in the Department of Ecology's Stormwater Management Manual for Western Washington (SWMMWW [2014]). Where any inconsistencies or lack of clarity exists, the requirements in the main text of the SWMMWW shall be applied.

HOW TO USE:

Evaluate the feasibility of the **BMPs** in priority order based on Worksheet A1 page 5 (List #1) or 6 (List #3) or Worksheet L for Large Projects (List #2). **Only one criterion needs to be selected for a BMP before evaluating the next BMP on the list.**

Lawn and Landscaped Areas		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
Post-construction Soil Quality and Depth (BMP T5.13 SWMMWW Volume V, Section 5.3) List #1, #2 and #3	<input type="checkbox"/> Lawn and landscape area is on till slopes greater than 33 percent. <input type="checkbox"/> Siting and design criteria cannot be achieved on site.	

None of the above boxes are checked. This is the BMP that must be used for lawn and landscaped areas. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.

Roofs		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
Full Dispersion BMP T5.30, SWMMWW Volume V, Section 5.3 List #1 and #2	<input type="checkbox"/> A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved. <input type="checkbox"/> A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) and protected by easement cannot be achieved. <input type="checkbox"/> Siting and design criteria cannot be achieved on site.	

None of the above boxes are checked. This is the BMP that must be used for roofs. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.

Downspout Full Infiltration BMP T5.10A, SWMMWW Volume III, Section 3.1.1 List #1, #2 and #3	<input type="checkbox"/> There is an alternate septic system on this lot or an adjacent lot (mound, sand filter pressure distribution, Glendon, aerobic treatment unit). Therefore, there is not at least 3 feet or more of permeable soil from the proposed final grade to the seasonal high groundwater table or other impermeable layer. <input type="checkbox"/> There is not at least 1 foot or more of permeable soil from the proposed bottom of the infiltration system to the seasonal high groundwater table or other impermeable layer.	
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Roofs (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p>Downspout Full Infiltration (cont.)</p> <p>BMP T5.10A, SWMMWW Volume</p>	<p><input type="checkbox"/> Slopes steeper than 25% or less than 200' from slope steeper than 40%.</p> <p><input type="checkbox"/> Siting and design criteria cannot be achieved on site.</p>	
<p><input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for roofs. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.</p>		
<p>Bioretention or Rain Gardens</p> <p>BMP T7.30 or T5.14A SWMMWW Volume V, Section 7.4</p> <p>List #1 (both) and List #2 (bioretention only)</p>	<p><i>Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.</i></p> <p>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):</p> <p><input type="checkbox"/> Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or down-gradient flooding.</p> <p><input type="checkbox"/> Within an area whose ground water drains into an erosion hazard, or landslide hazard area.</p> <p><input type="checkbox"/> Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces.</p> <p><input type="checkbox"/> Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system.</p> <p><input type="checkbox"/> Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects.</p> <p><input type="checkbox"/> Where infiltrating water would threaten existing below grade basements.</p> <p><input type="checkbox"/> Where infiltrating water would threaten shoreline structures such as bulkheads.</p>	



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Roofs (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p style="color: red; font-weight: bold; margin: 0;">Bioretention or Rain Gardens (cont.)</p> <p style="font-size: small; margin: 5px 0 0 0;">BMP T7.30 or T5.14A SWMMWW Volume V, Section 7.4</p>	<p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <li style="margin-bottom: 10px;"><input type="checkbox"/> Within setback provided for BMP T7.30 (SWMMWW Volume V, Section 7.4) <li style="margin-bottom: 10px;"><input type="checkbox"/> Where they are not compatible with surrounding drainage system as determined by the county (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area). <li style="margin-bottom: 10px;"><input type="checkbox"/> Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by PAMC 15.20). <li style="margin-bottom: 10px;"><input type="checkbox"/> Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent. <li style="margin-bottom: 10px;"><input type="checkbox"/> Within 50 feet from the top of slopes that are greater than 20 percent and over 10 feet of vertical relief. <li style="margin-bottom: 10px;"><input type="checkbox"/> For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act [MTCA]): <ul style="list-style-type: none"> Within 100 feet of an area known to have deep soil contamination. Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. <li style="margin-bottom: 10px;"><input type="checkbox"/> Within 100 feet of a closed or active landfill. <li style="margin-bottom: 10px;"><input type="checkbox"/> Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. <li style="margin-bottom: 10px;"><input type="checkbox"/> Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons. 	



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Roofs (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
Bioretention or Rain Gardens (cont.)	<ul style="list-style-type: none"> <input type="checkbox"/> Where the minimum vertical separation of 1 foot to the seasonal high groundwater or other impermeable layer would not be achieved below bioretention that would serve a drainage area less than the above thresholds <input type="checkbox"/> Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with SWMMWW Volume III, Section 3.3.6 (or an alternative small scale test specified by the local government) shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7. <input type="checkbox"/> Where the minimum vertical separation of 3 feet to the seasonal high groundwater elevation or other impermeable layer would not be achieved below bioretention that would serve a drainage area that exceeds the following thresholds (and cannot reasonably be broken down into amounts smaller than indicated): <ul style="list-style-type: none"> o 5,000 square feet of pollution-generating impervious surface (PGIS) o 10,000 square feet of impervious area o 0.75 acres of lawn and landscape. <input type="checkbox"/> Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. <input type="checkbox"/> Within 100 feet of a drinking water well, or a spring used for drinking water supply. 	



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Roofs (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
	<input type="checkbox"/> Within 10 feet of small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC.	
<input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for roofs. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.		
<b style="color: red;">Downspout Dispersion Systems BMP T5.10B SWMMWW Volume III, Section 3.1.2 List #1, #2 and #3	<input type="checkbox"/> For splash blocks, a vegetated flowpath at least 50 feet in length from the downspout to the downstream property line, structure, stream, wetland, slope over 15 percent, or other impervious surface is not feasible. <input type="checkbox"/> For trenches, a vegetated flowpath of at least 25 feet in between the outlet of the trench and any property line, structure, stream, wetland, or impervious surface is not feasible. A vegetated flowpath of at least 50 feet between the outlet of the trench and any slope steeper than 15 percent is not feasible. <input type="checkbox"/> Siting and design criteria cannot be achieved on site.	
<input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for roofs. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.		
<b style="color: red;">Perforated Stub-Out Connections BMP T5.10C SWMMWW Volume III, Section 3.1.3 List #1, #2 and #3	<input type="checkbox"/> For sites with septic systems, the only location available for the perforated portion of the pipe is located up-gradient of the drainfield primary and reserve areas. This requirement can be waived if site topography will clearly prohibit flows from intersecting the drainfield or where site conditions (soil permeability, distance between systems, etc.) indicate that this is unnecessary. <input type="checkbox"/> There is a mound, sandfilter, Glenden or aerobic treatment device on this or an adjacent lot. Therefore, there is not at least 1 foot of permeable soil from the proposed bottom (final grade) of the perforated stub-out connection trench to the highest estimated groundwater table or other impermeable layer. <input type="checkbox"/> The only location available for the perforated stub-out connection is under impervious or heavily compacted soils. <input type="checkbox"/> The only location available is on or above slopes greater than 20% <input type="checkbox"/> Siting and design criteria cannot be achieved on site.	
<input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for roofs. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.		



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Other Hard Surfaces		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p>Full Dispersion</p> <p>BMP T5.30 SWMMWW Volume V, Section 5.3 List #1 and #2</p>	<ul style="list-style-type: none"> <input type="checkbox"/> A 65 to 10 ratio of forested or native vegetation area to impervious area cannot be achieved. <input type="checkbox"/> A minimum forested or native vegetation flowpath length of 100 feet (25 feet for sheet flow from a non-native pervious surface) cannot be achieved. <input type="checkbox"/> Siting and design criteria cannot be achieved on site. 	
<p><input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for hard surfaces. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.</p>		
<p>Permeable Pavement</p> <p>BMP T5.15, SWMMWW Volume V, Section 5.3 List #1 and #2</p> <p>* Note that Raingardens may be used in lieu of permeable pavement if subject to List #1.</p>	<p>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or downgradient flooding. <input type="checkbox"/> Within an area whose ground water drains into an erosion hazard, or landslide hazard area. <input type="checkbox"/> Where infiltrating and ponded water below the new permeable pavement area would compromise adjacent impervious pavements. <input type="checkbox"/> Where infiltrating water below a new permeable pavement area would threaten existing below grade basements. <input type="checkbox"/> Where infiltrating water would threaten shoreline structures such as bulkheads. <input type="checkbox"/> Down slope of steep, erosion prone areas that are likely to deliver sediment to the area of pervious pavement. <input type="checkbox"/> Where fill soils are used that can become unstable when saturated. <input type="checkbox"/> Excessively steep slopes where water within the aggregate base layer or at the subgrade surface cannot be controlled by detention structures and may cause erosion and structural failure, or where surface runoff velocities may preclude adequate infiltration at the pavement surface. 	



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p style="color: red; font-weight: bold;">Permeable Pavement (cont.)</p> <p>BMP T5.15, SWMMWW Volume V, Section 5.3</p> <p>* Note that Raingardens may be used in lieu of permeable pavement if subject to List #1.</p>	<div style="margin-bottom: 10px;"><input type="checkbox"/> Where permeable pavements cannot provide sufficient strength to support heavy loads at industrial facilities such as ports.</div> <div style="margin-bottom: 10px;"><input type="checkbox"/> Where installation of permeable pavement would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, or pre-existing road subgrades.</div> <p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <div style="margin-bottom: 10px;"><input type="checkbox"/> Within an area designated as an erosion hazard, or landslide hazard.</div> <div style="margin-bottom: 10px;"><input type="checkbox"/> Within 50 feet from the top of slopes that are greater than 20 percent.</div> <div style="margin-bottom: 10px;"><input type="checkbox"/> For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under MTCA): <ul style="list-style-type: none"> Within 100 feet of an area known to have deep soil contamination. Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW. </div> <div style="margin-bottom: 10px;"><input type="checkbox"/> Within 100 feet of a closed or active landfill.</div> <div style="margin-bottom: 10px;"><input type="checkbox"/> Within 100 feet of a drinking water well, or a spring used for drinking water supply, if the pavement is a pollution-generating surface.</div>	



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p>Permeable Pavement (cont.) BMP T5.15, SWMMWW Volume V, Section 5.3</p> <p>* Note that Raingardens may be used in lieu of permeable pavement if subject to List #1.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Within 10 feet of a small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC. <input type="checkbox"/> Within 10 feet of any underground storage tank and connecting underground pipes, regardless of tank size. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. <input type="checkbox"/> At multi-level parking garages, and over culverts and bridges. <input type="checkbox"/> Where the site design cannot avoid putting pavement in areas likely to have long-term excessive sediment deposition after construction (e.g., construction and landscaping material yards). <input type="checkbox"/> Where the site cannot reasonably be designed to have a porous asphalt surface at less than 5 percent slope, or a pervious concrete surface at less than 10 percent slope, or a permeable interlocking concrete pavement surface (where appropriate) at less than 12 percent slope. Grid systems upper slope limit can range from 6 to 12 percent; check with manufacturer and local supplier. <input type="checkbox"/> Where the subgrade soils below a pollution-generating permeable pavement (e.g., road or parking lot) do not meet the soil suitability criteria for providing treatment. See soil suitability criteria for treatment in the SWMMWW Volume III, Section 3.3.7. Note: In these instances, the county may approve installation of a 6 inch sand filter layer meeting county specifications for treatment as a condition of construction. <input type="checkbox"/> Where underlying soils are unsuitable for supporting traffic loads when saturated. Soils meeting a California Bearing Ratio of 5 percent are considered suitable for residential access roads. <input type="checkbox"/> Where replacing existing impervious surfaces unless the existing surface is a non-pollution generating surface over an outwash soil with a saturated hydraulic conductivity of 4 inches per hour or greater. 	



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p style="color: red; margin: 0;">Permeable Pavement (cont.)</p> <p style="font-size: small; margin: 0;">BMP T5.15, SWMMWW Volume V, Section 5.3</p> <p style="margin: 0;">* Note that Raingardens may be used in lieu of permeable pavement if subject to List #1.</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;"><input type="checkbox"/> Where appropriate field testing indicates soils have a measured (a.k.a., initial) subgrade soil saturated hydraulic conductivity less than 0.3 inches per hour. Only small-scale PIT or large-scale PIT methods in accordance with SWMMWW Volume III, Section 3.3.6 (or an alternative small scale test specified by the local government) shall be used to evaluate infeasibility of permeable pavement areas. (Note: In these instances, unless other infeasibility restrictions apply, roads and parking lots may be built with an underdrain, preferably elevated within the base course, if flow control benefits are desired.) <li style="margin-bottom: 10px;"><input type="checkbox"/> Roads that receive more than very low traffic volumes, and areas having more than very low truck traffic. Roads with a projected average daily traffic volume of 400 vehicles or less are very low volume roads (AASHTO 2001) (U.S. Department of Transportation, 2013). Areas with very low truck traffic volumes are roads and other areas not subject to through truck traffic but may receive up to weekly use by utility trucks (e.g., garbage, recycling), daily school bus use, and multiple daily use by pick-up trucks, mail/parcel delivery trucks, and maintenance vehicles. Note: This infeasibility criterion does not extend to sidewalks and other non-traffic bearing surfaces associated with the collector or arterial. <li style="margin-bottom: 10px;"><input type="checkbox"/> At sites defined as “high-use sites” (refer to the Glossary in the SWMMWW Volume I). <li style="margin-bottom: 10px;"><input type="checkbox"/> In areas with “industrial activity” as identified in 40 CFR 122.26(b)(14). <li style="margin-bottom: 10px;"><input type="checkbox"/> Where the risk of concentrated pollutant spills is more likely such as gas stations, truck stops, and industrial chemical storage sites. <li style="margin-bottom: 10px;"><input type="checkbox"/> Where routine, heavy applications of sand occur in frequent snow zones to maintain traction during weeks of snow and ice accumulation. <li style="margin-bottom: 10px;"><input type="checkbox"/> Where the seasonal high groundwater or an underlying impermeable/low permeable layer would create saturated conditions within 1 foot of the bottom of the lowest gravel base course. 	
<input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for hard surfaces. On Worksheet A1, indicate that this will be the BMP used. (List #1 may use Raingardens in lieu of Permeable Pavement). CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.		



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p>Bioretention or Rain Gardens</p> <p>BMP T7.30, SWMMWW Volume V, Section 7.4</p> <p>List #1 (both) and List #2 (bioretention only)</p>	<p><i>Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.</i></p> <p>Citation of any of the following infeasibility criteria must be based on an evaluation of site-specific conditions and a written recommendation from an appropriate licensed professional (e.g., engineer, geologist, hydrogeologist):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where professional geotechnical evaluation recommends infiltration not be used due to reasonable concerns about erosion, slope failure, or down-gradient flooding. <input type="checkbox"/> Within an area whose ground water drains into an erosion hazard, or landslide hazard area. <input type="checkbox"/> Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, pre-existing structures, or pre-existing road or parking lot surfaces. <input type="checkbox"/> Where the only area available for siting does not allow for a safe overflow pathway to stormwater drainage system or private storm sewer system. <input type="checkbox"/> Where there is a lack of usable space for bioretention areas at re-development sites, or where there is insufficient space within the existing public right-of-way on public road projects. <input type="checkbox"/> Where infiltrating water would threaten existing below grade basements. <input type="checkbox"/> Where infiltrating water would threaten shoreline structures such as bulkheads. <p>The following criteria can be cited as reasons for infeasibility without further justification (though some require professional services to make the observation):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Within setback provided for BMP T7.30 (SWMMWW Volume V, Section 7.4) <input type="checkbox"/> Where they are not compatible with surrounding drainage system as determined by the county (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention area). 	



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p>Bioretention or Rain Gardens (cont.)</p> <p>BMP T7.30, SWMMWW Volume V, Section 7.4</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Where land for bioretention is within an erosion hazard, or landslide hazard area (as defined by PAMC 15.20). <input type="checkbox"/> Where the site cannot be reasonably designed to locate bioretention areas on slopes less than 8 percent. <input type="checkbox"/> Within 50 feet from the top of slopes that are greater than 20 percent and over 10 feet of vertical relief. <input type="checkbox"/> For properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act [MTCA]): <ul style="list-style-type: none"> • Within 100 feet of an area known to have deep soil contamination. • Where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in the groundwater. • Wherever surface soils have been found to be contaminated unless those soils are removed within 10 horizontal feet from the infiltration area. <input type="checkbox"/> Within 100 feet of a closed or active landfill. <input type="checkbox"/> Within 10 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is 1,100 gallons or less. As used in these criteria, an underground storage tank means any tank used to store petroleum products, chemicals, or liquid hazardous wastes of which 10 percent or more of the storage volume (including volume in the connecting piping system) is beneath the ground surface. <input type="checkbox"/> Within 100 feet of an underground storage tank and connecting underground pipes when the capacity of the tank and pipe system is greater than 1,100 gallons. <input type="checkbox"/> Where the minimum vertical separation of 1 foot to the seasonal high groundwater or other impermeable layer would not be achieved below bioretention that would serve a drainage area less than the above thresholds 	



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p style="color: red; margin: 0;">Bioretention or Rain Gardens (cont.)</p> <p style="font-size: small; margin: 0;">BMP T7.30, SWMMWW Volume V, Section 7.4</p>	<p><input type="checkbox"/> Where field testing indicates potential bioretention/rain garden sites have a measured (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. A small-scale or large-scale PIT in accordance with SWMMWW Volume III, Section 3.3.6 (or an alternative small scale test specified by the local government) shall be used to demonstrate infeasibility of bioretention areas. If the measured native soil infiltration rate is less than 0.30 in/hour, bioretention/rain garden BMPs are not required to be evaluated as an option in List #1 or List #2. In these slow draining soils, a bioretention area with an underdrain may be used to treat pollution-generating surfaces to help meet Minimum Requirement #6, Runoff Treatment. If the underdrain is elevated within a base course of gravel, it will also provide some modest flow reduction benefit that will help achieve Minimum Requirement #7.</p> <p><input type="checkbox"/> Where the minimum vertical separation of 3 feet to the seasonal high groundwater elevation or other impermeable layer would not be achieved below bioretention that would serve a drainage area that exceeds the following thresholds (and cannot reasonably be broken down into amounts smaller than indicated):</p> <ul style="list-style-type: none"> <input type="checkbox"/> 5,000 square feet of pollution-generating impervious surface (PGIS) <input type="checkbox"/> 10,000 square feet of impervious area <input type="checkbox"/> 0.75 acres of lawn and landscape. <p><input type="checkbox"/> Any area where these facilities are prohibited by an approved cleanup plan under the state MTCA or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW.</p> <p><input type="checkbox"/> Within 100 feet of a drinking water well, or a spring used for drinking water supply.</p> <p><input type="checkbox"/> Within 10 feet of small on-site sewage disposal drainfield, including reserve areas, and grey water reuse systems. For setbacks from a "large on-site sewage disposal system," see Chapter 246-272B WAC.</p>	
<p><input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for hard surfaces. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.</p>		



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Other Hard Surfaces (cont.)		
BMP and Applicable Lists	Reason why the BMP will not work on site.	Additional Comments If needed
<p>Sheet Flow Dispersion</p> <p>BMP T5.12, SWMMWW Volume V, Section 5.3 List #1, #2 and #3</p>	<p><input type="checkbox"/> Positive drainage for sheet flow runoff cannot be achieved.</p> <p><input type="checkbox"/> Area to be dispersed (e.g., driveway, patio) cannot be graded to have less than a 15 percent slope.</p> <p><input type="checkbox"/> For flat to moderately sloped areas, at least a 10 foot-wide vegetation buffer for dispersion of the adjacent 20 feet of contributing surface cannot be achieved. For variably sloped areas, at least a 25 foot vegetated flowpath between berms cannot be achieved.</p> <p><input type="checkbox"/> Siting and design criteria cannot be achieved on site.</p>	
<p><input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for hard surfaces. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.</p>		
<p>Concentrated Flow Dispersion</p> <p>BMP T5.11, SWMMWW Volume V, Section 5.3 List #1, #2 and #3</p>	<p><input type="checkbox"/> A minimum 3 foot length of rock pad and 50 foot flowpath OR a dispersion trench and 25 foot flowpath for every 700 sq. ft. of drainage area followed with applicable setbacks cannot be achieved.</p> <p><input type="checkbox"/> More than 700 sq. ft. drainage area drains to any dispersion device.</p> <p><input type="checkbox"/> Siting and design criteria cannot be achieved on site.</p>	
<p><input type="checkbox"/> None of the above boxes are checked. This is the BMP that must be used for hard surfaces. On Worksheet A1, indicate that this will be the BMP used. CONTINUE to complete the form for other surface types applicable to the project. If none, STOP.</p>		