City of Battle Ground
List #2 - LID Infeasibility Checklist – Other Hard Surfaces

For each No answer, move on to the subsequent question within the BMP.
If a Yes answer is given, then the BMP is infeasible in the TDA and is not required in accordance with Minimum Requirement #5.

For each surface type, stop at the first BMP that is feasible. Answers to questions must consider site-specific information, and some may require professional written evaluation as justification.

# 1 - FULL DISPERSION *(BMP T5.30)*		
Infeasibility Criteria	**YES**	**NO**
1. Is the project unable to protect and maintain 65% or more of the site or a Threshold Discharge Area (on-site area draining to a single natural discharge location) of the site in a forested native condition?		
2. Does a professional geotechnical evaluation report recommend dispersion not be used due to concerns about erosion, slope failure or flooding?		
3. Is the only location available for the system outlet less than 100 feet up gradient of a septic system?		
4. Is the only area available for the required length of the dispersion system flow path (100 ft. reqd.) on a slope greater than 15% (7:1)?		
5. Is the only area available for the required length of the dispersion system flow path (100 ft. reqd.) above an erosion hazard or toward a landslide hazard area?		
6. Is the only area available to place the dispersion device located in a critical area or critical area buffer (i.e. wetlands, critical habitat, geologic hazard areas, flood hazard areas, or critical aquifer recharge areas) as identified on Clark County GIS?		
7. Is the only area available to place the dispersion device located on a slope greater than 20% (5:1) or within 50 feet of a slope or geologic hazard as identified on Clark County GIS?		
8. Is the only area available to place the dispersion device or flow path less than 10 feet from any structure, property line, or sensitive area? Sensitive areas include, but are not limited to, water bodies, storm water facilities, bioswales, storm drains, and wetlands.		
9. Are there Competing Needs (see Low Impact Development Stormwater Application Checklist)? If so, attach a narrative justifying the use of Competing Needs criteria.		
Determination: Is a Full Dispersion System infeasible?		

# 2 - PERMEABLE PAVEMENT *(BMP T5.15 and COBG ST-10.05 – ST-10.08)*		
Infeasibility Criteria	**YES**	**NO**
The following require professional technical evaluation.		
1. Does a professional geotechnical evaluation recommend infiltration not be used due to concerns about erosion, slope failure or flooding?		
2. Does the site have groundwater that drains into an erosion hazard or landslide hazard area?		
3. Would infiltrating and ponded water below new permeable pavement compromise adjacent impervious pavement?		
4. Would infiltrating water threaten existing basements?		
5. Would infiltrating water threaten shoreline structures such as bulkheads?		

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# **2 Continued - PERMEABLE PAVEMENT** *(BMP T5.15 and COBG ST-10.05 – ST-10.08)*		
Infeasibility Criteria	**YES**	**NO**
6. Is the area for permeable pavement downslope of steep, erosion prone areas that are likely to deliver sediment?		
7. Is the area for permeable pavement over any areas of known fill material that can become unstable when saturated?		
8. Is the area for permeable pavement on excessively steep slopes and would the water within the aggregate base layer or at the sub-grade surface be uncontrollable by detention structures and therefore may cause erosion and structural failure, or would surface runoff velocities preclude adequate infiltration at the pavement surface?		
9. Is the area for permeable pavement in an area needed to support heavy loads exceeding the strength of the permeable pavement (such as at a port)?		
10. Would installation of permeable pavement threaten the safety or reliability of existing underground utilities, underground storage tanks, structures, basements or road or parking lot surfaces or sub-grades?		
11. Is the area for permeable pavement designated as an erosion hazard or landslide hazard?		
12. Is the area for permeable pavement less than 50 feet from the top of a slope greater than 20% (5:1) with more than 10 feet of elevation difference?		
13. Is the area for permeable pavement less than 100 feet from a water well or a spring used for drinking water?		
14. Is the area for permeable pavement less than 10 feet from on-site sewage drainage?		
15. Is the area for permeable pavement less than 10 feet from an underground storage tank and its connecting pipes that is used to store petroleum products, chemicals, or liquid hazardous wastes in which 10% or more of the storage volume of the tank and connecting pipes is beneath the ground?		
16. Is the area for permeable pavement a multi-level parking garage, a bridge, or roadway over a culvert?		
17. Is the area for permeable pavement likely to have long- term excessive sediment deposition after construction (e.g. construction and landscaping material yards)?		
18. Can the site not be designed to have a porous asphalt surface at less than 5% (20:1) slope, or a pervious concrete surface at less than 10% (10:1) slope, or a permeable interlocking concrete pavement surface (where appropriate) at less than 12% (8:1) slope, or a grid system at less than the manufacturer's recommended maximum slope limit (generally between 6% to 12%)?		
19. Is the area for permeable pavement less than 100 feet from an active or closed landfill?		

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# 2 Continued - **PERMEABLE PAVEMENT** *(BMP T5.15 AND COBG ST-10.05 – ST-10.08)*		
Infeasibility Criteria	**YES**	**NO**
20. Do the native soils below a pollution-generating permeable pavement not meet the soil suitability requirement for providing treatment as follows (must meet all criteria to be feasible for treatment)? - One foot depth of soil with the following characteristics: - Cation exchange capacity (CEC) >5% - Organic content >1% - Measured coefficient of permeability (K_{SAT}) < 12 in./hr.		
21. Would seasonal high groundwater or an underlying impermeable/low permeability layer create saturated conditions within 1 foot of the bottom of the lowest gravel base course?		
22. Are underlying soils unsuitable for supporting traffic loads when saturated? (Soils meeting a California Bearing Ratio of 5% are considered suitable for residential access roads.)		
23. Is measured coefficient of permeability in the area for permeable pavement less than 0.3 inches per hour?		
24. Is the surface to be paved a roadway with a projected average daily traffic volume of more than 400 vehicles?		
25. Is the surface to be paved a roadway that will be subject to through truck traffic (not including such traffic as weekly garbage and recycling pick-up, daily school bus use, or frequent use by mail/parcel delivery trucks and maintenance vehicles)?		
26. Is the road type classified as arterial or collector? [Note: do not use this infeasibility criterion for sidewalks and other non-traffic bearing surfaces, even if associated with a collector or arterial road. Use "N/A" in the boxes to the right for sidewalks and other non-traffic bearing surfaces.]		
27. Is the project replacing existing impervious surface, unless the existing surface is a non-pollution generating surface over an outwash soil with a saturated hydraulic conductivity of four inches per hour or greater?		
28. Is the site defined as a high-use site in the SWMMWW, Volume I, Appendix G?		
29. Is the area for permeable pavement used for an "industrial activity" as identified in 40 CFR 122.26(b)(14)?		
30. Is there a risk of concentrated pollutant spills more likely such as at gas stations, truck stops, and industrial chemical storage sites?		
31. Are there Competing Needs (see Low Impact Development Stormwater Application Checklist)? If so, attach a narrative justifying the use of Competing Needs criteria.		

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# **2 Continued - PERMEABLE PAVEMENT** *(BMP T5.15 AND COBG ST-10.05 – ST-10.08)*		
Infeasibility Criteria	**YES**	**NO**
On properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act (MTCA)) and any of the following criteria:		
32. Is the proposed permeable pavement within 100 feet of an area known to have deep soil contamination?		
33. Is the site in an area where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in groundwater?		
34. Is the proposed permeable pavement located in an area where surface soils have been found to be contaminated, and contaminated soils are still in place within 10 horizontal feet of the infiltration area?		
35. Is the proposed permeable pavement within any area where it would be prohibited by an approved cleanup plan under the state Model Toxics Control Act or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW?		
Determination: Is Permeable Pavement infeasible?		

# **3 - BIORETENTION** *(BMP T7.30 and COBG ST-11.01 – ST-11.08) in accordance with Ch. 7 of Vol. V of the SWMMWW*		
Infeasibility Criteria	**YES**	**NO**
The following require professional technical evaluation.		
1. Does a professional geotechnical evaluation recommend infiltration not be used due to concerns about erosion, slope failure or flooding?		
2. Does the site have groundwater that drains into an erosion hazard or landslide hazard area?		
3. Is the only area available for siting the bioretention facility threaten the safety or reliability of existing underground utilities, underground storage tanks, structures and basements, or road or parking lot surfaces or sub-grades?		
4. Is the only area available for siting the bioretention facility one that does not allow for a safe overflow pathway to the municipal separate storm sewer system or to a private storm sewer system?		
5. Is the site a redevelopment project that lacks usable space?		
6. Would infiltrating water threaten existing basements?		
7. Would infiltrating water threaten shoreline structures such as bulkheads?		

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 # 3 – BIORETENTION contd. *(BMP T7.30 and COBG ST-11.01 – ST-11.08) in accordance with Ch. 7 of Vol. V of the SWMMWW*

Infeasibility Criteria	YES	NO
8. Is the land for the bioretention facility within an area designated as an erosion hazard or landslide hazard by the geotechnical report or county critical areas mapping?		
9. Can the site not be designed to locate the bioretention facility on slopes less than 8% (12:1)?		
10. Will the bioretention facility be less than 50 feet from the top of slopes greater than 20% (5:1) and with more than 10 feet of elevation difference and cannot be located elsewhere?		
11. Is the proposed bioretention facility less than 100 feet from a landfill (active or closed) and cannot be located elsewhere?		
12. Is the proposed bioretention facility less than 100 feet from a water well or a spring used for drinking water and cannot be located elsewhere?		
13. Is the proposed bioretention facility less than 10 feet from an underground storage tank and its connecting pipes that is used to store petroleum products, chemicals, or liquid hazardous wastes in which 10% or more of the storage volume of the tank and connecting pipes is underground and when the capacity of the tank and pipe system is less than 1100 gallons and cannot be located elsewhere?		
14. Is the proposed bioretention facility less than 100 feet from an underground storage tank and its connecting underground pipes when the capacity of the tank and pipe system is greater than 1100 gallons and cannot be located elsewhere?		
15. For bioretention facilities that serve a drainage area that is: • Less than 5,000 SF of pollution generating impervious surface, **and** • Less than 10,000 SF of impervious surface, **and** • Less than 3/4 acres of pervious surface; • Is there less than **one foot** of vertical separation below the rain garden or bioretention and the seasonal high water table, bedrock or other impervious layer?		
16. For bioretention that serves a drainage area that is: • Equal to or more than 5,000 SF of pollution generating impervious surface, **or** • Equal to or more than 10,000 SF of impervious surface, **or** • Equal to or more than 3/4 acres of pervious surface, • and cannot be broken into amounts smaller than the thresholds above; • Is there less than **three feet** of vertical separation below the bioretention and the seasonal high water table, bedrock or other impervious layer?		
17. Does field testing indicate that soils have a measured (a.k.a. initial) native soil coefficient of permeability less than 0.3 inches per hour?		
18. Are there Competing Needs (see Low Impact Development Stormwater Application Checklist)? If so, attach a narrative justifying the use of Competing Needs criteria.		

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# 3 Continued BIORETENTION *(BMP T7.30 and COBG ST-11.01 – ST-11.08) in accordance with Ch. 7 of Vol. V of the SWMMWW*		
Infeasibility Criteria	**YES**	**NO**
On properties with known soil or groundwater contamination (typically federal Superfund sites or state cleanup sites under the Model Toxics Control Act (MTCA)) and any of the following criteria:		
19. Is the proposed bioretention facility within 100 feet of an area known to have deep soil contamination?		
20. Is the site is in an area where groundwater modeling indicates infiltration will likely increase or change the direction of the migration of pollutants in groundwater?		
21. Is the proposed bioretention facility located in an area where surface soils have been found to be contaminated, and contaminated soils are still in place within 10 horizontal feet of the infiltration area?		
22. Is the proposed bioretention facility within any area where it would be prohibited by an approved cleanup plan under the state Model Toxics Control Act or Federal Superfund Law, or an environmental covenant under Chapter 64.70 RCW?		
Determination: Is Bioretention infeasible?		

# 4 - SHEET FLOW DISPERSION *(BMP T5.12 and COBG ST-10.03 – ST-10.04)* and CONCENTRATED FLOW DISPERSION *(BMP T5.11 and COBG ST-10.01 – ST-10.02)*		
Infeasibility Criteria	**YES**	**NO**
1. Does a professional geotechnical evaluation recommend dispersion not be used due to concerns about erosion, slope failure or flooding?		
2. Is the only location available for the discharge location less than 100 feet up gradient of a septic system drain field?		
3. Is the only area available for the required flow path of the sheet flow (20 ft.) or concentrated flow (25 ft. to 50 ft.) dispersion device on a slope greater than 20% (5:1)?		
4. Is the only area available for the required length of the dispersion device's flow path above an erosion hazard or toward a landslide hazard area?		
5. Is the only area available to place the dispersion device located in a critical area?		
6. Is the only area available to place the dispersion device located on a slope greater than 20% (5:1) or within 50 feet of a landslide or geologic hazard as identified on Clark County GIS?		
7. Is the only area available for the dispersion device less than 10 feet from any structure, property line, or sensitive area?		

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# 4 Continued - SHEET FLOW DISPERSION *(BMP T5.12 and COBG ST-10.03 – ST-10.04)* **and CONCENTRATED FLOW DISPERSION** *(BMP T5.11 and COBG ST-10.01 – ST-10.02)*		
Infeasibility Criteria	**YES**	**NO**
Are there Competing Needs (see Low Impact Development Stormwater Application Checklist)? If so, attach a narrative justifying the use of Competing Needs criteria.		
Determination: Is Sheet Flow Dispersion and Concentrated Flow Dispersion infeasible?		