Linear Project Standards of Various Entities (October 31, 2024, updated December 12 & 27, 2024)

1. Comparison of MPCA MS4 General Stormwater Permit and BCWMC Requirements

2013 MS4 General Permit (all cities were required to meet)

- Trigger treatment at 1 acre of land disturbance for new development and redevelopment projects.
- For new development – no net increase in stormwater discharge volume (average annual) from pre-project conditions, unless limited/excepted.
- For redevelopment projects – a net reduction in stormwater discharge volume (average annual) from pre-project conditions, unless limited/excepted.
- Similar requirements for phosphorus load and sediment load.
- Limitations/exceptions:
  - Prohibits/restricts infiltration under some circumstances.
  - Exceptions where insufficient ROW for treatment; permit requires reasonable effort to obtain additional ROW.

2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

2015 BCMWC Linear Standards

- Trigger treatment at 1 acre of new/fully reconstructed impervious.
- Capture and retain the larger of 1.1 inches off the net increase in impervious – or 0.55 inches off the new/fully reconstructed impervious.
- Follow flexible treatment options if volume reduction is not feasible or not allowed.
  - Prohibits infiltration under some circumstances (similar to 2013 MS4 permit)

2017 BCMWC Linear Standards

- Trigger treatment at 1 acre of net new impervious.
- Capture and retain 1.1 inches off the net new impervious area.
- Follow flexible treatment options if volume reduction is not feasible or not allowed (see details below).
  - Prohibits infiltration under some circumstances (similar to 2013 MS4 permit)

2020 MS4 General Permit (all cities are required to meet)

- Trigger treatment at 1 acre of new/fully reconstructed impervious.
- Capture and retain the larger of 1 inch off the net increase in impervious – or 0.5 inches off the new/fully reconstructed impervious.
- Follow permit guidance if volume reduction is not feasible or not allowed (see details below).
  - Permit requires a reasonable attempt to obtain additional ROW, easement, or other permission to treat stormwater
  - Volume reduction practices are not required if the practices cannot be provided cost effectively.
  - Owners of construction activity must maximize the treatment of the water quality volume.

Comparison of 2020 MPCA MS4 Permit Linear Project Infiltration Prohibitions and Treatment Constraints with 2017 BCWMC Flexible Treatment Options *[all new table, not in tracked changes]*

MPCA MS4 Permit Infiltration Prohibitions and Treatment Constraints	Comparable BCWMC Flow Chart & Flexible Treatment Options
Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first.	Are there restraints due to lack of available ROW, off site drainage and/or rate control requirements? If yes, select FTO #2 or FTO #3. A reasonable attempt must be made to obtain right-of-way during the project planning process
Volume reduction practices are not required if the practices cannot be provided cost effectively.	Are there zoning and land use requirements (density, parking, setbacks, etc.) that make the Performance Goal not feasible? Are there existing or proposed structures or infrastructure (e.g., rate control BMPs, utilities, buildings, roadway, easements) that make the Performance Goal not feasible? If yes to either of these questions, select FTO #1, FTO #2 or FTO #3, and provide site survey, maps,regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal.
If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge from the MS4.	(Copied from above) Are there restraints due to lack of available ROW, off site drainage and/or rate control requirements? If yes, select FTO #2 or FTO #3. A reasonable attempt must be made to obtain right-of-way during the project planning process
Infiltration systems must be prohibited when the system would be constructed in areas:	Similar questions from BCWMC flow chart:
a. that receive discharges from vehicle fueling and maintenance areas, regardless of the amount of new and fully reconstructed impervious surface; b. where high levels of contaminants in soil or groundwater may be mobilized by the infiltrating stormwater.	Is there presence of contaminated soils and/or groundwater, or hotspot runoff? Hotspots includes any portion of a facility where infiltration is prohibited under an NPDES/SDS industrial stormwater permit issued by the MPCA. If yes, can hotspot or contamination be isolated or remediated to mitigate risk of increased contamination? If not, select FTO #2 – no infiltration practices allowed,·explore non-infiltration volume reduction practices,·provide Phase I or II ESAs, or other documentation of potential contamination or hotspot runoff, provide documentation of extent of contamination and remediation alternatives considered.
c. where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour;	Are there very high infiltrating soils (>8 inches per hour)? If yes, is BMP relocation onsite to a lower-infiltrating location feasible? If no, can subgrade be modified to slow the rate of infiltration to less than 8 inches per hour? If no, select FTO #2 –·no infiltration practices allowed, explore non-infiltration

MPCA MS4 Permit Infiltration Prohibitions and Treatment Constraints	Comparable BCWMC Flow Chart & Flexible Treatment Options
	volume reduction practices, provide soil boring or infiltration test results documenting high-infiltrating soils.
d. with less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock;	Is shallow groundwater or shallow bedrock present on site? If yes, conduct detailed site investigation (i.e., borings, excavations, consultation with a professional geologist). Is there >3 feet of soil depth (>10 feet is preferred) from bottom of BMP to bedrock and groundwater? If no, is BMP relocation onsite to avoid shallow groundwater and bedrock feasible? If no, can BMP be raised? If no, select FTO #2 (no infiltration practices allowed, explore non-infiltration volume reduction practices, provide soil borings or report from a professional geologist or geotechnical engineer) or FTO #3 (provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU).
e. of predominately Hydrologic Soil Group D (clay) soils;	Are there very low infiltrating soils (<0.2 inches per hour)? If yes, is BMP relocation onsite to a higher-infiltrating location feasible? If no, can BMP be sized to drain dry within 48 hours (24 hours in locations that are tributary to trout streams)? If no, provide soil boring or infiltration test results documenting low-infiltrating soils. Is FTO #1 (lower volume control standard) feasible, allowing the BMP to drain within 48 hours (24 hours in locations that are tributary to trout streams)? If no, select FTO #2 – no infiltration practices allowed, explore non-infiltration volume reduction practices, provide soil boring or infiltration test results documenting low infiltration rates.
f. in an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, Subp. 13, classified as high or very high vulnerability as defined by the Minnesota Department of Health; g. in an ERA within a DWSMA classified as moderate vulnerability unless the permittee performs or approves a higher level of engineering review sufficient to provide a functioning treatment system and to prevent adverse impacts to groundwater; h. outside of an ERA within a DWSMA classified as high or very high vulnerability unless the permittee performs or approves a higher level of engineering review sufficient to	Is the site located in a DWSMA, wellhead protection area, or within 200 feet of a drinking well? If yes, can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater? If no, select FTO #2 –·no infiltration practices allowed, explore non-infiltration volume reduction practices, provide DWSMA or well location map.

MPCA MS4 Permit Infiltration Prohibitions and Treatment Constraints	Comparable BCWMC Flow Chart & Flexible Treatment Options
provide a functioning treatment system and to prevent adverse impacts to groundwater;	
i. within 1,000 feet up-gradient or 100 feet down gradient of active karst features; or	Are active karst areas within 1000 feet up-gradiant or 100 feet downgradiant of the BMP location? If yes, can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater? If no, is BMP relocation onsite to a location without karst feasible? If no, select FTO #2 (no infiltration practices allowed, explore non-infiltration volume reduction practices, provide soil borings or report from a professional geologist or geotechnical engineer) or FTO #3 (provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU).
j. that receive stormwater runoff from these types of entities regulated under NPDES for industrial stormwater: automobile salvage yards; scrap recycling and waste recycling facilities; hazardous waste treatment, storage, or disposal facilities; or air transportation facilities that conduct deicing activities.	Similar to “Is there presence of contaminated soils and/or groundwater, or hotspot runoff?” question above.
No similar infiltration prohibition or treatment constraint noted in MPCA MS4 permit.	Are there adverse surface water hydrologic impacts from infiltration practices (e.g., impacting perched wetland)? If yes, can the BMP be relocated onsite to avoid adverse hydrologic impacts? If no, would BMPs accommodating FTO Alternative #1 avoid adverse hydrologic impacts? If yes, select FTO#1 – maximize infiltration BMPs to treat more than 0.55 inch goal, if possible, provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist. If no, select FTO # 2 – maximize infiltration BMPs to treat up to the 0.55 inch goal, if possible, explore non-infiltration volume reduction practices, provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist.

2. Linear Project Standards for Other Watershed Organizations

2023 Capitol Region WD and Ramsey-Washington Metro WD Linear Standards

- Trigger treatment at 1 acre of **disturbance**.
- Capture and retain 1.1 inches off the new/fully reconstructed impervious area.
- Follow flexible treatment options if volume reduction is not feasible or not allowed.
- Allow for a 'cost cap' associated with linear projects. Here are some details from the Capitol Region WD rules:
  Costs specific to satisfying the onsite volume reduction and water quality requirements on linear projects need not exceed a cost cap which will be set by the Board. The cap shall apply to costs directly associated with the design, testing, land acquisition, and construction of the volume reduction and water quality stormwater BMPs only. These unit costs for construction shall be used to determine the cost of the volume reduction and water quality BMPs and must be reviewed and approved by the District. The District may contribute an amount above the cap in order to meet the volume reduction and water quality requirements or it may allow the applicant to partially comply with the requirements when the cap is met. Volume constructed greater than the required volume to meet the linear cost cap may be deposited into the District's volume reduction bank.

2023 Nine Mile Creek WD

- Trigger treatment at 1 acre of new/fully reconstructed impervious.
- Capture and retain the larger of 1 inch off the net increase in impervious – or 0.5 inch off the the new/fully reconstructed impervious.
- Follow flexible treatment options if volume reduction is not feasible or not allowed.

2021 Riley Purgatory Bluff Creek WD

- Trigger treatment at 10,000 sq feet (0.23 acres) of new or 25,000 square feet (0.57 acres) of fully reconstructed impervious area.
- For projects creating between 10,000 square feet and 1 acre of new and/or fully reconstructed impervious surface: provide for the abstraction onsite of 1.1 inches off the net increase in impervious surface area;
- For projects creating more than 1 acre of new and/or fully reconstructed impervious surface: provide for the abstraction onsite of the larger of 1.1 inches off the net increase in impervious – or 0.55 inches off the the new/fully reconstructed impervious.
- Follow flexible treatment options if volume reduction is not feasible or not allowed.

Linear Project Standards of Various Entities (October 31, 2024, updated December 12 & 27, 2024)

2024 Minnehaha Creek WD

- Trigger treatment at as little as 10,000 square feet of new impervious.
- Amount of treatment required varies dependin on size of project (see below).
- Follow flexible treatment options if volume reduction is not feasible or not allowed.

New and Reconstructed Impervious Area	Net Increase in Impervious Area	Requirement
< 1 acre	10,000 sf - 1 acre	Volume from net added impervious surface, Rate
≥ 1 acre	< 10,000 sf	Volume equal to the larger of: one inch of volume from new impervious surface OR 0.5 inches of volume from new impervious and reconstructed impervious surface
	≥ 10,000 sf	Volume equal to the larger of: one inch of volume from new impervious surface OR 0.5 inches of volume from new impervious and reconstructed impervious surface, Rate

2023 Shingle Creek WMO

- Trigger treatment at 1 acre of **new/fully reconstructed impervious**.
- Capture and retain the larger of 1 inch off the net increase in impervious – or 0.5 inch off the new/fully reconstructed impervious.
- Follow flexible treatment options if volume reduction is not feasible or not allowed.
- ***Shingle Creek WMO reviews projects that create >1 acre of new impervious; otherwise, cities provide review for compliance.***

(b) For linear projects, the water quality volume must be calculated as the larger of one (1) inch times the new impervious surface or one-half (0.5) inch times the sum of the new and the fully reconstructed impervious surface. Where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first, as described in the General Stormwater Permit. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume prior to discharge to downstream waterbodies.

(1) For Linear projects that are *able* to meet the 1.0- or 0.5-inch water quality requirement, the applicant does not need to provide any further volume control or water quality analysis.

(2) For Linear projects that are *unable* to meet the 1.0- or 0.5-inch water quality requirement, the applicant needs to provide the following:

(i) Show that a reasonable attempt was made to meet the water quality requirement by providing:

(a) A summary of additional easements that could be acquired, if space and right-of-way is limiting the feasibility of constructing BMPs.

(b) A detailed summary of alternatives that were considered.

(ii) Maximize the treatment of the water quality volume

(a) At a minimum, the project needs to provide BMPs that provide rate control and limit TSS/TP Loads to existing conditions.