

Memorandum

To: Bassett Creek Watershed Management Commission
From: Barr Engineering Co.
Subject: Item 5E – Recommendations on BCWMC Performance Standards for Linear Projects
Background Research – Requirements of Other Watershed Organizations
Date: March 8, 2017
Project: 23270051 2017 003

Introduction

At their January 19, 2017_ meeting, the Commission directed the Commission Engineer to develop a recommendation to the Commission about whether the MIDS criteria for linear projects should be modified. Following is a summary of the treatment requirements for linear projects in other watershed districts and joint powers watershed management organizations. This information was reviewed to support the Commission Engineer's recommendations to the Commission.

Research

Ramsey Washington Metro Watershed District (RWMWD): The RWMWD requires 1.1 inches of infiltration from impervious surfaces, including in linear projects, which is twice the MIDS requirements for linear projects.

Contributions to storm water impact fund

As a last alternative, for any remaining volume reduction that cannot be met through alternate sequencing (similar to MIDS' flexible treatment options), the applicant shall pay into the RWMWD's Stormwater Impact Fund to cover the cost of implementing equivalent volume reduction elsewhere in the watershed. The required amount to contribute to the Stormwater Impact Fund shall be set by the RWMWD Board annually.

Banking excess volume reductions from other projects

Volume reduction provided in excess of the 1.1-inch requirement may be banked for use on another project.

Cost caps

For linear projects, costs specific to satisfying the volume reduction and water quality standards shall not exceed a cost cap which will be set by the RWMWD Board annually (2015 & 2016 = \$30,000/impervious acre). 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.

Shingle Creek Watershed Management Commission

Shingle Creek WMO Rule D(2)(b)

Linear projects that create one acre or more of new impervious surface must meet all Commission requirements (rate, quality, volume) for the net new impervious surface. [Shingle Creek WMO's abstraction standard is one inch. Other details can be found on page 12 of their requirements document.]

Rice Creek Watershed District

The District recently revised subsection C.6 so that public road authorities and other public permittees no longer must provide water quality treatment for surface area of existing hard surface that is reconstructed as a part of a Public Linear Project. Only runoff from new impervious areas must meet water quality treatment requirements.

Background: Under the previous rule, the area that required treatment for water quality (by infiltrating 0.75 inches) included both new linear hard surface and the area of existing hard surface that is reconstructed ("Reconstruction" is defined as "removal of an impervious surface such that the underlying structural aggregate base is effectively removed and the underlying native soil exposed.") Historically, water quality practices to meet the requirement for public linear reconstruction projects have been challenging to construct principally because unlike for new roadway construction, road reconstruction works within existing right-of-way that rarely affords sufficient space, grades or soil conditions for effective new water quality practices. The process to identify and design practices, and District engineering oversight and review of this process, tended to be expensive and resulted in compromised water quality outcomes. The rule change reflects a pragmatic judgment by the District that water quality outcomes from treating reconstructed hard surface in aggregate are quite limited, and that the public funds spent to generate these outcomes can be used for more effective water resource outcomes if directed differently.

Riley Purgatory Bluff Creek Watershed District

For linear projects creating between 5,000 square feet and 1 acre of new and/or fully reconstructed impervious surface, projects must provide for the abstraction onsite of 1.1 inches of runoff from the net increase in impervious area.

For linear projects creating more than 1 acre of new and/or fully reconstructed impervious surface, projects must provide for the abstraction onsite of the larger of the following: (1) 0.55 inches of runoff from the new and fully reconstructed impervious surfaces; or (2) 1.1 inches of runoff from the net increase in impervious area.

In addition to the volume abstraction requirement, linear projects are also required to provide 90 percent TSS reduction from site runoff and 60% TP reduction from site runoff.

If a project provides documentation demonstrating they are considered a restricted site (such as clay soils, contamination, high groundwater, limited right-of-way, minimization of impervious area, considerations for water reuse, etc. – not just clay soils), volume abstraction may be provided to the maximum extent practical and the water quality requirements must still be met.

Nine Mile Creek Watershed District

No permit is required if the linear project entails construction or reconstruction, including mill and overlay or other maintenance, creating less than 1 acre of new or additional impervious surface.

For linear projects creating more than 1 acre of new or additional impervious surface, treatment is required for the net new or additional impervious surface. Retention onsite of one inch of runoff from all net new or additional impervious surfaces is required.

The project must also provide treatment for all runoff from the parcel from the 2.5-inch storm event, through onsite or off-site detention, to at least 60 percent TP removal and at least 90 percent TSS removal.

Minnehaha Creek Watershed District

New linear construction projects that will create 10,000 square feet or more of impervious surface must result in no net increase in phosphorus loading from existing conditions and provide for the abstraction of the first one inch of rainfall from the site's impervious surface. Where an applicant demonstrates that it is infeasible to meet the one inch abstraction requirement through use of volume control credits, the stormwater management plan must provide for abstraction of runoff to the greatest extent feasible, and at least 0.5 inches, and phosphorus control in an amount equivalent to that which would be achieved through abstraction of one inch of rainfall from the site's impervious surfaces.

Linear reconstruction projects that will increase the impervious area within the project limits between 10,000 square feet and one acre from existing conditions must result in no net increase in phosphorus loading from existing conditions for the area of increased impervious surface.

Linear reconstruction projects that will increase the impervious area within the project limits by one acre or more from existing conditions must result in no net increase in phosphorus loading from existing conditions and provide for the abstraction of the first one inch of rainfall from the area of increased impervious surface. Where an applicant demonstrates that it is infeasible to meet the one inch abstraction requirement through use of volume control credits, the stormwater management plan must provide for abstraction of runoff to the greatest extent feasible, and at least 0.5 inches, and phosphorus control in an amount equivalent to that which would be achieved through abstraction of one inch of rainfall from the site's impervious surfaces.

Elm Creek Watershed Management Commission

Linear projects that create one acre or more of new impervious surface must meet all Commission requirements for the net new impervious surface. Stormwater runoff volume must be infiltrated/abstracted onsite in the amount equivalent to 1.1 inches of runoff generated from new impervious surface.

Credit toward meeting the volume abstraction credit may be given for areas of soil amendment, providing wetland buffers in excess of the required buffer, preserving undisturbed forest or grassland, or disconnecting impervious surface.

Where infiltration is not advisable or infeasible due to site conditions, biofiltration must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings, or other material to reduce soluble phosphorus must be provided.

There shall be no net increase in total phosphorus (TP) or total suspended solids (TSS) from pre-development land cover to post-development land cover. Pre-development land cover is defined as the predominant land cover over the previous 10 years.

Mississippi Watershed Management Organization (MWMO)

The MWMO may set limits on the cost of stormwater treatment any site incurs in complying with the MWMO's Standards. A limit of the stormwater costs is needed to balance the environmental and financial tradeoffs to the public and private sectors to achieve the protection and restoration of the water quality and quantity in the watershed. On occasions, the limiting conditions on urban sites may inflate the cost of site stormwater treatment to a level that exceeds what is reasonable to expect, so the MWMO will consider shifting the treatment to the next best site opportunity elsewhere in the watershed or further upstream. *(It appears this cost cap could apply to all sites, not just linear projects.)*

For linear projects on sites, without limitations, that disturb one or more acres of land, the larger of the following shall be captured and retained on site: (1) 0.55 inches of runoff from the new and fully reconstructed impervious surfaces, or (2) 1.1 inches of runoff from the net increase in impervious area. For projects on sites with limitations, the MWMO Design Sequence Flow Chart (Appendix Q) or a MWMO-approved alternative shall be used to identify a path to compliance through flexible treatment options. The MWMO Design Sequence Flow Chart is very similar to the MIDS flow chart with some modifications to the requirements and documentation required for the flexible treatment options. The MWMO will develop a MOU with individual member cities and MS4s to address flexible treatment option #3 off-site mitigation conditions.