

Memorandum

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

Recommendations

The Commission engineer offers the following recommendations for the Commission's consideration:

1. The Commission implement a cost cap (in dollars/pound of total phosphorus removed) above which treatment in accordance with the MIDS performance goals for linear projects would not be required. The cost cap should be reevaluated on an annual basis to confirm its appropriateness. The cost cap process needs to consider the cost of providing treatment that meets MIDS flexible treatment options 1, 2 and 3, including the cost of providing offsite treatment for linear projects.
2. The Commission direct the Engineer to perform further research to develop a recommended cost cap, based on cost caps used by other similar organizations, and the costs of constructed BMPs within the BCWMC and nearby projects.
 - a. Perform research on current BCWMC and nearby projects to determine the range and average cost per pound of total phosphorus removed on linear and CIP projects. The following projects will be considered:
 - i. Linear projects constructed in BCWMC since the adoption of the MIDS performance goals (the Engineer will request project cost information from member cities).
 - ii. BCWMC CIP projects (information on both constructed projects and projects at the feasibility study level).
 - iii. Linear projects outside BCWMC, but with similar treatment requirements (i.e. projects in Minnetonka outside BCWMC). The Engineer will request project cost information from contacts at nearby cities.
 - b. Hold TAC meeting to discuss the linear project treatment cost research results and the draft cost cap value. The Commission Engineer would gather more information or revise the cost cap recommendation as necessary.
 - c. Prepare a memo to the Commission summarizing the information on linear project treatment costs and including a recommended cost cap value. If the value of a cost cap cannot be

determined after this level of effort, the Commission Engineer will propose the additional steps necessary to develop a cost cap recommendation.

The Commission Engineer will bring a cost estimate for completing the above work to the March 16th Commission meeting.

3. The Commission continues to require the current MIDS performance goals for linear projects with variance requests, if needed, until a cost cap value is adopted by the Commission (or determined to be infeasible to set).
 - a. If the Commission deems the cost cap determination process is too large an effort, the current process should continue to be used.

Background

Since the BCWMC's adoption of MIDS in September 2015, member cities with local street reconstruction projects have indicated that poor draining soils, high groundwater, limited right-of-way, utilities, contamination, and other issues make meeting MIDS linear project requirements difficult. These challenges led to the TAC recommending that the Commission change the performance standard for linear projects back to what was in place prior to the 2015 Requirements document—a "good faith effort" standard. At their January 19, 2017 meeting, the Commission approved a motion in response to the TAC recommendation that directed the "Commission Engineer to analyze the questions and concerns raised by the Technical Advisory Committee and develop a recommendation for the Commission on how to move forward with this issue." The Commission confirmed that if the Commission Engineer deemed this request to be a significant undertaking, a proposed scope of work would be brought to the Commission for consideration.

The Commission implementation of a cost cap would help cities to budget for the maximum amount required to cover water quality treatment, while still providing an enforceable mechanism for the Commission to review projects for compliance with the Requirements document.

TAC Concerns

Below is a summary of the TAC concerns and comments. Several of the concerns are addressed or responded to in the *Considerations* section.

1. Any requested changes would apply only to linear projects, not private development.
2. Chloride contamination is an issue, including its infiltration into groundwater. Infiltrating runoff directly from roadways may contribute to chloride contamination.
3. In some cases, there truly is not a way to implement the current standards, so no amount of a cost cap would help.

4. In some cases cities can install multiple best management practices that can offset other projects (e.g., banking credit).
5. Long term maintenance of structures in rights-of-way is another big concern for cities.
6. MIDS flexible treatment option #3 (off-site mitigation) should be a viable option for cities to use if other practices are not workable.
7. Road reconstruction is different from redevelopment; redevelopment is a genuine opportunity to improve conditions while road reconstruction is maintenance of existing public infrastructure with limited space and often with existing underground utilities.
8. 2004 – 2014 BCWMC stormwater management requirements required that a “good faith effort” be made to improve conditions during road projects. Cities often did improve conditions during road projects.
9. Credit should be given for performing increased street sweeping in priority areas.
10. A credit banking system is not desirable because developers may argue for the same system or to use credits.
11. Golden Valley spent millions to address sanitary sewer inflow and infiltration issues in the city and cannot support infiltration in the right-of-way of linear projects due to the nearby presence of sanitary sewer pipes.
12. Cities would rather fund other failing infrastructure than water quality improvements from existing impervious surface.
13. The MIDS criteria should only be applied to new impervious surface, not reconstructed impervious surface. If BCWMC applied MIDS only to new impervious surface,, should the trigger be reduced from one acre of impervious surface?
14. For road projects, there are many issues to address in addition to water quality.

Current BCWMC (MIDS) Linear Project Performance Goals and Process

Section 6.2 of the BCWMC’s 2015 Requirements for Improvements and Development Proposals (Requirements) document outlines the MIDS performance goals. Linear projects on sites without restrictions that create more than one acre of new and/or fully reconstructed impervious surface must meet the MIDS performance goal for linear projects. Mill and overlay, other resurfacing and reconstruction activities that do not alter the underlying soil material beneath the structure, pavement or activity are not considered fully reconstructed impervious surfaces. Sites with restrictions may follow the flexible treatment options approach. Site restrictions include those factors listed in the MIDS flexible treatment options, which include but are not limited to: shallow depth to bedrock, contaminated soils, shallow groundwater, clay/tight soils, existing site constraints or zoning requirements.

MIDS performance goal:

Linear projects on sites without restrictions that create one acre or greater of new and/or fully reconstructed impervious surfaces, shall capture and retain the larger of the following:

- 0.55 inches of runoff from the new and fully reconstructed impervious surfaces
- 1.1 inches of runoff from the net increase in impervious area

Mill and overlay and other resurfacing and reconstruction activities that do not alter the underlying soil material beneath the structure, pavement or activity are not considered fully reconstructed impervious surfaces. Paved trails are considered pervious if they are buffered by a vegetated area at least half the width of the trail (Section 4.5 of the Requirements document).

Section 6.3 of the 2015 Requirements document outlines the flexible treatment options approach. The flexible treatment options approach includes the following alternatives to be considered, in order, if there are restraints to meeting the MIDS performance goal due to lack of available right-of-way (a reasonable attempt must be made to obtain right-of-way during the project planning process), off site drainage, and/or rate control requirements.

- Flexible Treatment Option #2 (FTO #2) requires the applicant to provide (1) volume reduction to the maximum extent practicable and (2) removal of 60% of the annual TP load.
- Flexible Treatment Option #3 (FTO #3) requires the applicant to provide off-site mitigation (including banking or cash or treatment on another project as determined by the local authority) equivalent to the volume reduction performance goal at an off-site location, preferably a location that benefits the same receiving waterbody as the original project.

Variance Procedure:

Section 3.3 of the 2015 Requirements document outlines the variance procedure. The BCWMC established a variance procedure to be used when projects cannot meet the standards outlined in the Requirements document. Applications for variances must state the exceptional conditions of the property and the peculiar and practical difficulties claimed as a basis for a variance. Since the BCWMC's adoption of MIDS in September 2015, cities have requested variances to provide future off-site treatment for linear projects and to receive credit for linear projects for treatment provided by BCWMC CIP projects in adjacent areas.

A variance request allows the applicant to request that the BCWMC approve a lower amount of volume or water quality treatment than is required and not provide off-site treatment. In granting a variance, the BCWMC must find that (1) there are special circumstances or conditions affecting the property such that the strict application of the provisions of the standards and criteria would deprive the applicant of the reasonable use of the applicant's land, (2) the variance is necessary for the preservation and enjoyment of a substantial property right of the applicant, (3) the granting of the variance will not be detrimental to the public welfare or injurious to the other property in the territory in which the property is situated, (4) the

variance shall not allow a lower degree of flood protection than the current flood protection, and (5) the variance will not be contrary to the intent of taking all reasonable and practical steps to improve water quality within the watershed.

Considerations

The Engineer reviewed the requirements of eight other watershed districts or joint powers watershed management organizations (Ramsey-Washington Metro Watershed District (RWMWD), Shingle Creek Watershed Management Commission, District, Rice Creek Watershed District, Riley Purgatory Bluff Creek Watershed District (RPBCWD), Nine Mile Creek Watershed District (NMCWD), Minnehaha Creek Watershed District (MCWD), Elm Creek Watershed Management Commission, and Mississippi Watershed Management Organization (MWMO). See the companion document for a summary of the requirements of these watershed districts and joint powers watershed management organizations.

Of these watershed organizations, BCWMC is the only entity that adopted MIDS in its entirety. Three of the watersheds reviewed adopted similar criteria, but did not specifically reference the MIDS documentation. The other five watersheds reviewed only require treatment of the net new impervious area and used a volume abstraction depth requirement similar to the requirements of MIDS. Seven of the watersheds have a water quality requirement in place in addition to the volume abstraction requirement (similar to the requirements of FTO #2).

(Refer to TAC Concerns 5, 6, 12, and 14) The Engineer recognizes the challenge of installing BMPs in linear corridors. However, many of the same constraints are also present at least to some degree on private sites. Cities could use the opportunity provided by linear projects to demonstrate/pioneer methods to achieve compliance with the requirements. Because off-site treatment is allowed as part of FTO #3, cities could be planning and identifying locations outside of linear corridors and partnering with private landowners or evaluating park and other public spaces to provide larger or more cost-effective treatment.

(Refer to TAC Concern 13) If the BCWMC performance standard required treatment only for new impervious surface on linear projects, three of the eight linear projects reviewed by the BCWMC since the adoption of MIDS would have required treatment. Only two of the three projects created over an acre of new impervious surface, and one of the projects was SWLRT, which is not a typical linear project. For example, the Douglas Drive project in 2015 created 2.26 acres of new impervious area and 18.29 acres of redeveloped impervious area. Requiring treatment for only the new impervious area would result in treatment of 12.4% of the impacted impervious area on the project. For the Douglas Drive project, 1.1 inches of volume reduction from the 2.26 acres of new impervious area is 9,024 cubic feet (0.21 acre-feet) of runoff; 0.55 inches of volume reduction from the entire 20.55 acres of new or reconstructed impervious area is 41,028 cubic feet (0.94 acre-feet) of runoff. For this project, requiring treatment only for the new impervious area would result in 22% of the currently required volume reduction.

(Refer to TAC Concerns 4 and 10) One watershed organization included in the requirements review uses a banking system to provide credit for projects that implement volume reduction above and beyond the required treatment. Financial contribution to a fund or banking credit for treatment provided above and beyond the required treatment may be difficult to manage and has worked with varying degrees of success in a similar application at other entities. Banking credit for treatment above and beyond required treatment may be applicable for treatment provided up to 1.1 inches of runoff from the impervious surfaces; however, treatment beyond 1.1 inches should not receive credit. During development of MIDS, treatment of 1.1 inches of runoff was determined to be the point at which additional treatment results in less effective water quality treatment. Such a banking system should only be implemented if the requirements remain in place that linear projects must provide treatment of 0.55 inches of runoff from all fully reconstructed impervious surfaces, and would apply to linear projects providing more than 0.55 inches of volume reduction, up to 1.1 inches of volume reduction.

(Refer to TAC Concern 2) Chloride contamination is an issue watershed-wide, and the impacts of infiltrating water contaminated with chloride could be further reviewed. While salt is applied to city streets, salt is also applied to parking lots and sidewalks at private developments. Infiltrating runoff from private developments that may be less judicious about the rate and timing of salt application is likely a bigger contributor to chloride contamination than runoff from city streets (on a per acre of imperviousness basis).

(Refer to TAC Concern 11) Sanitary sewer inflow and infiltration should be considered in site designs for both linear projects and private developments. The requirements also allow for treatment to FTO #2 which is based on providing 60% TP treatment, which can be achieved without requiring infiltration in the right-of-way. The use of filtration BMPs or proprietary BMPs designed to treat pollutants can be explored in situations where infiltration cannot/should not be used.

(Refer to TAC Concern 9) The MN Stormwater Manual indicates that the results of efforts to quantify the TP removal provided by street sweeping vary widely. Studies have not been done that monitor the TP concentration of runoff before and after street sweeping. Some tools have been developed based on a study in Prior Lake that estimate the benefits of street sweeping, but this information has not been sufficiently reviewed to provide a recommendation for providing credit toward meeting water quality treatment requirements. Street sweeping is a recommended best management practice; however, it does not appear it can be quantified to provide a specific credit for treatment.

https://stormwater.pca.state.mn.us/index.php?title=Street_sweeping_for_trees

(Refer to TAC Concerns 3 and 8) Any recommended change to the BCWMC requirements needs to be enforceable. While cities do make a “good faith effort” when designing projects to provide water quality treatment and volume abstraction, a requirement with that language is difficult to enforce because it

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cannot be quantified if a city could reasonably provide an additional volume of abstraction or additional pollutant removal. Any changes need to have clear, measurable criteria.

(Refer to TAC Concerns 1 and 7) If any changes are made to the current recommendations, the BCWMC should be prepared for developer pushback and requests that the same changes be applied to private developments. The developments face some similar restrictions such as clay soils, high groundwater, contamination, existing utilities or the requirement to tie into adjacent utilities and grades, and a need to maintain an economically profitable site. These sites do not have the limited rights-of-way that linear projects have, and therefore the requests do not necessarily need to be accommodated. However, the Commission should be prepared for comments from developers and the public.

Providing treatment is a matter of funding and opportunity. Road reconstruction projects are likely an opportunity to improve conditions. If improvements are not made during these projects, then it is likely that the Commission or others will need to spend additional funds to implement projects in the future.