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A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for **11:00 a.m., Thursday, December 9, 2021. This is a virtual meeting.**

To join the meeting, click <https://zoom.us/j/834887565> or go to www.zoom.us and click Join A Meeting. The meeting ID is **834-887-565**. The password is **water**. If your computer is not equipped with audio capability, you need to dial into one of these numbers:

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Meeting ID: 990 970 201. Passcode: 579973		

December 9, 2021

A G E N D A

1. Call to Order.
 - a. Roll Call.
 - b. Approve Agenda.*
 - c. Approve Minutes of Last Meeting.*
2. Fourth Generation Plan.
 - a. Potential Revisions to Rules and Standards.*
 - b. Maintenance and Resiliency Funding.*
3. Other Projects.
4. Other Business.
 - a. Planning Grants for Resilience.*
5. Next TAC meeting is scheduled for January 13, 2022.
6. Adjournment.

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MINUTES

October 14, 2021

A virtual meeting of the Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions was called to order by Chair Richard McCoy at 11:06 a.m., Thursday, September 9, 2021.

Present: Andrew Hogg, Brooklyn Center; Heather Nelson, Champlin; Mark Ray, Crystal; Derek Asche, Maple Grove; Ann Ackerson, New Hope; Amy Riegel, Plymouth; Richard McCoy and Marta Roser, Robbinsdale; Diane Spector, Erik Megow, Katie Kemmitt, and Todd Shoemaker, Stantec; and Amy Juntunen and Judie Anderson, JASS.

Not represented: Brooklyn Park, Minneapolis, and Osseo.

Also present: Burt Orred, Jr., Crystal; and Wes Saunders-Pierce, DNR.

- I. Motion by Riegel, second by Asche to **approve the agenda**. * *Motion carried unanimously.*
- II. Motion by Ray, second by Asche to **approve the minutes*** of the September 9, 2021, meeting. *Motion carried unanimously.*
- III. **Fourth Generation Watershed Management Plan.**

A. Kemmitt presented a recap of **stream and lake water quality trends**. * Trends at stream sites on Bass Creek (BCP) and Shingle Creek at SC-3 and SC-0 were shown. Soluble phosphorus (P) at all three sites has been significantly reduced, as has Total Suspended Solids (TSS) at SC-0.

A Third Generation Plan goal of improving water quality in certain lakes by over 10% over the average of the previous ten years was met in Bass, Pomerleau, Cedar Island, Magda, Pike, Eagle, and Upper Twin lakes. Water clarity was degraded or significantly degraded in Lower Twin, Middle Twin, Meadow, Schmidt, Crystal, and Ryan lakes. No change was noted in Lake Success.

[Hogg arrived 11:19 a.m.]

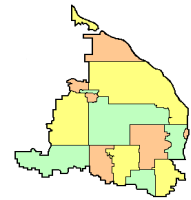
B. Included in the meeting packet were three documents:

1. A recap of **Third Generation Plan activities**. * Discussed were Plan Amendments, the regulatory program, monitoring program, education and outreach program, special studies, research projects, progress toward TMDLs, cost share projects, grants, capital projects, and evaluation of goals, strategies, and priorities.

2. **Directions*** for completing a "homework assignment."

3. **Self-Assessment Homework**. * Four questions were asked:

- a. What do you consider to be the **top 3** most successful achievements of the 3rd Generation Plan? This could be completed or started projects, new partnerships, outreach events, etc.



b. What are the **top 3** areas or problems related to surface waters the watersheds could do better addressing? These could be specific impairments, knowledge gaps, engagement, etc.

c. What are the **top 3** things you'd like to accomplish in the next ten years as part of the 4th Generation Plan? Make these as specific as possible. Examples: update website, delist a lake, X number of wetland restorations, etc.

d. What are the **top 3** actions or opportunities that can be leveraged to achieve the things you listed in question c? This could be new/enhanced partnerships, more grant funding, etc.

The members provided their responses to these questions, which will be summarized by Staff and brought forward at the November meeting. These same questions will be posed to the Commissioners at their meeting which follows this one.

IV. Project Updates.

A. Meadow Lake Drawdown.* Megow reported that permits have been approved by the DNR for both the Meadow Lake and the Golf Course pond drawdowns. Quotes have been received from four dewatering contractors and one will be selected by the City of New Hope on October 25. Goals of the drawdown include removing the fathead minnow population and limiting recolonization, reducing curly-leaf pondweed to non-nuisance levels, and consolidating sediment. A pool in the southwest portion of Meadow Lake will be allowed for turtle refuge. The drawdown is anticipated to begin in late November. A full freeze should occur from December to February, with pond and lake refill occurring in March 2022.

B. Megow also reported that **Phases I and 2 of the SRP Channel Extension project** will be consolidated and proceed as one project. Cost of the combined project will be under \$175,000.

V. Other Business.

A. Spector announced that she and Laura Jester, Administrator for Bassett Creek WMO, are working on **future partnerships** between the WMOs.

B. It was agreed by consensus to move the **November TAC meeting** up one week to November 4, to avoid conflict with Veterans/Armistice day.

There being no further business, the meeting was adjourned at 12:23 p.m.

Respectfully submitted,

Judie A. Anderson
 Recording Secretary
 JAA:tim

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To: Shingle Creek/West Mississippi WMO TAC

From: Ed Matthiesen, P.E.
Erik Megow, P.E.

Date: December 3, 2021

Subject: Fourth Generation Plan: Rules and Standards Update

**Recommended TAC
Action**

For discussion and staff direction.

As part of the 4th Generation Plan, we will be reviewing the Rules and Standards for the Shingle Creek and West Mississippi Watershed Management Commissions and revising them as necessary to:

1. Align with the 2020 MS4 general permit,
2. Align with the latest guidance in the Minnesota Stormwater Manual, and
3. Add clarity to how the Commissions will review certain project elements to align with City and surrounding Watershed requirements.

The following sections provide an overview of rule updates and discussion points for each of the topics listed above. We will be walking through each of these potential revisions at the December 9 TAC meeting.

1. 2020 MS4 General Permit Updates

- Impervious Surface Disturbance Definition and treatment scope
 - The MS4 Permit has project size triggers based on the amount of new or reconstructed impervious surface.
 - The Commission has project size triggers based on the site size, therefore the Commission's project size classifications are more stringent. The Commission currently defines a *Site* as, "A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project"
- Threshold and Treatment Scope Comparison with MS4 General Permit (See Table 1, attached)
 - For detached single-family residential and other non-linear projects, the current Commission requirements meet or exceed the MS4 requirements.
 - For Linear projects, the current Commission requirements do not meet the MS4 requirements. The current requirements only require treatment if more than 1 acre of new impervious surface is constructed.
- *Discussion Points:*
 - *Do we need to better define 'Project Size' or base the requirements on the amount of disturbed impervious surface to align with MS4?*

2. Minnesota Stormwater Manual Updates

- Guidance for permitting Mechanical Treatment Devices (MTDs)
 - Currently MTDs are being reviewed on a case-by-case basis and Commission review relies on Engineering review and third-party testing (i.e. – Washington State Technology Assessment Protocol – Ecology (TAPE) and testing from the New Jersey Department of Environmental Protection (NJDEP).
 - We recommend that the Commissions revise the Rules to rely on guidance of the MN Stormwater Manual, outlined here: [TP and TSS credits and guidance for manufactured treatment devices \(mtds\) - Minnesota Stormwater Manual \(state.mn.us\)](#)
 - Here is an overview of how the MTDs are credited for TP Removal, based on three Tiers (See above link for Device-specific removals and additional conditions for receiving the outline credits, below):
 - Tier 1
 - Credit: 50 percent reduction
 - Tier 2
 - Credit: based on an assessment of 95% lower confidence limits (LCLs) or the LCL for TSS.
 - If removal is affected by influent concentration, we calculated an LCL for all data with influent concentrations greater than 0.05 mg/L
 - We compare the above value with the TAPE LCL and use the lower of the two values
 - If both LCLs are less than 50%, we calculate a value for TP removal based on the LCL for TSS removal. This value equals the TSS LCL times 0.75, where 0.75 represents the assumed fraction of phosphorus that is in particulate form. If this value exceeds 50%, it is used as the Tier 2 credit.
 - Tier 3
 - Credit
 - Based on monitoring using appropriate monitoring protocols
 - If a device has a known mechanism for removing dissolved phosphorus, the credit is based on an assumption that 40% of the DP is removed, PP is 75% of TP, and the LCL for TP removal is equal to or greater than the Tier 3 value.
- *Discussion Points:*
 - *Are cities seeing a lot of small (>5 ac) projects utilizing MTDs?*
 - *For filtration, we currently allow a 1:1 credit for volume control. Based on 50% removals, do we want to continue to provide 1:1 credit for filtration practices?*
 - *This discussion will likely need to take into account how we handle our water quality requirements.*
 - *Are there any other MN SW Manual updates that effect how Cities are handling/reviewing stormwater projects?*

3. Project Elements Needing Additional Clarity

- Water Quality Requirements
 - Current Water Quality Requirements:
 - Must remove 60% TP and 85% TSS from stormwater prior to discharge through BMPs or infiltrating 1.3" of runoff

- Rate control:
 - Currently, rate control calculations are required for 2-, 10-, and 100-year 24-hour storm events using Atlas 14 depths (MSE3 distribution). These storm events are consistent with Bassett Creek and Elm Creek WMOs.
 - Discussion Points:
 - *Water Quality – Should the Commission updated its Water quality requirements to align with MS4 or adjacent WMO (Bassett Creek and Elm Creek) requirements?*
 - *MS4 – Water quality is met with volume control of 1.0”.*
 - *Bassett Creek – Water quality is met with volume control of 1.1”, or 0.55” and 75% TP Removal.*
 - *Elm Creek – Water quality is met with infiltration of 1.1”, or no net increase of TP and TSS.*
 - *Rate Control – Resiliency*
 - *For projects that include the conveyance of public waters or within floodplains and floodways, should we require a Mid-century (Upper 90th percentile 100-year or 500-yr, Atlas 14 storm event)*
 - *Should we also require rate control for the 100-year, 10-day storm event?*
 - *Standard Operating Procedures (SOPs): Do we need to formalize SOPs are include requirements for:*
 - *Modeling and requirements for turf fields*
 - *Witness testing for infiltration basins*
 - *Water storage and re-use*
 - *Should we consider abstraction credits for:*
 - *Preservation/planting of trees to align with Hennepin County Climate Action Plan (HC CAP) Goals*
 - *Use of biochar to promote carbon sequestration to align with HC CAP*
 - *Wetland, stream, floodplain conservation easements*
4. Anything else that should be considered for revision/clarification in the Rules and Standards?

Table 1. Comparison of current Commission stormwater requirements and MS4 standards.

Project Land Use	Project Size	Reviewer	Project Type	Current Requirements	MS4 Requirements	Proposed Change
Detached Single-Family Residential	>1 acres to <15 acres	City	Development	Rate, WQ, and Volume control for entire site	Volume Control (1.0" times the sum of the new and fully reconstructed impervious area)	None. Commission requirements exceed MS4 Requirements
			Redevelopment	Rate, WQ, and Volume control for disturbed area or entire site with ≥50% disturbance trigger		
	≥ 15.0 acres	Commission	Development	Rate, WQ, and Volume control for entire site		
			Redevelopment			
Linear	> 1acre	Commission	New or reconstructed impervious surface	Rate, WQ, and Volume control for projects that create one acre or more of new impervious for net new impervious surface.	The larger of: •1.0" times the new impervious surface •0.5" times the sum of the new and fully reconstructed impervious surface	<i>Adopt the MS4 requirements for Linear projects with greater than 1.0 acre of land disturbance. Include projects less than 1 acre that are part of a larger plan/scheme of development</i>
All Other Land Uses	0.5 acres to <1.0 acres	City	Development	Volume Control for entire site	No Requirements	None. Commission requirements exceed MS4 Requirements
			Redevelopment	Incorporate Permanent WQ BMPs		
	≥1.0 acres to <5.0 acres	City	Development	Rate, WQ, and Volume control for entire site	Volume Control (1.0" times the sum of the new and fully reconstructed impervious area)	None. Commission requirements exceed MS4 Requirements
			Redevelopment	Rate, WQ, and Volume control for disturbed area or entire site with ≥50% disturbance trigger		
	≥5.0 acres	Commission	Development	Rate, WQ, and Volume control for entire site		
			Redevelopment			

To: Shingle Creek/West Mississippi WMO TAC/Commissioners

From: Ed Matthiesen, P.E.
Diane Spector

Date: December 3, 2021

Subject: Fourth Generation plan:
Maintenance and Resiliency Funding

**Recommended
Commission Action**

For discussion.

The TAC and Commissions had previously discussed the potential to create an annual levy for “maintenance” to fund work resulting from capital projects which didn’t fall neatly into either operations or bricks and mortar projects. This would include such work as ongoing rough fish management, aquatic vegetation management, repair and maintenance of Commission-installed BMPs such as carp barriers and iron-enhanced sand filters. In many cases this work was initiated as part of a grant-funded project and the initial years’ work was funded through the grant. However, once the grant was completed, it is necessary to continue that maintenance type work to sustain the water quality benefits of the project.

It was out estimate that there was \$30,000 – \$50,000 in annual ongoing maintenance-type work. The Commissions’ attorney consulted with an attorney at Hennepin County, and they were in agreement that there was sufficient statutory authority for a levy for maintenance. However, then the pandemic struck and there was no interest in considering a new levy in that time of uncertainty.

However, the need still remains. Staff still believes that the magnitude of annual potential need is in the \$30,000 - \$50,000 range. If the TAC and Commissions agree to pursue this, it will be necessary to craft a policy that clearly defines what kinds of maintenance expenses could be funded, and what would be the member cities’ responsibilities. It is our sense that there are some activities that clearly would fall under the Commission category – maintenance of a BMP that was installed by the Commission that the City would not have chosen to do themselves, such as repair or replacement of a carp barrier or an iron-enhanced sand filter. There are also activities that are clearly City responsibilities – pond dredging, operating a street sweeper, or removing invasive vegetation. However, there is the “muddy middle” that needs further discussion. Who is responsible for removing a tree that falls into a stream where the Commission has undertaken a stream restoration project? What if a 500 year storm comes through and takes out a whole section of restored stream? Here’s a partial list staff has been discussing:

- Annual rough fish maintenance management
- Curly-leaf pondweed maintenance treatment
- Carp barrier cleaning
- Carp barrier repair and maintenance
- SRP filter maintenance or refresh
- Emergency repairs
- Channel bank maintenance where Commission has done restoration projects
- Crystal Pond filter bench maintenance if needed, till in biochar
- Champlin Pond filter bench maintenance if needed
- Lake alum touchup treatment
- 639W weir maintenance

We’d like to have an initial discussion at the December 9 meeting so we can begin to craft a potential policy. If there is agreement moving forward, the earliest a levy could be considered would be fall 2022 for collection in 2023.

To: Shingle Creek WMO TAC/Commissioners

From: Ed Matthiesen, P.E.
Diane Spector

Date: December 3, 2021

Subject: Planning Grants for Resilience

**Recommended
Commission Action**

Consider submitting a Resiliency Grant to MPCA to use the HUC8 watershed model to predict future flood areas based on changing precipitation patterns, identify infrastructure at risk, and develop planning guidance.

This is a new MPCA grant program in 2021 providing financial assistance to undertake **planning for increased resilience** to the impacts of Minnesota's changing climate (warmer and wetter with more damaging rains and cold weather warming, and more extreme heat and drought in the future) **within any of the following three focus areas: stormwater, wastewater, community resilience.**

Some of the stormwater planning activities that can be funded through this grant are:

- Vulnerability assessment using hydrologic/hydraulic modelling to identify areas (e.g. stream corridors, bridges, intersections, etc.) that are at increased risk for flooding, including assessing potential scenarios of short- and long-term changes to precipitation.
- Inventory of infrastructure issues to identify critical impacts (e.g. number of structures flooded, frequency of flooding, social vulnerability, local environmental impacts, etc.), resulting in a prioritized list of critical areas needing infrastructure improvements to increase resilience.

The HUC8 model update identified flood risk areas based on current climate and weather patterns. As we continue to experience a non-stationary climate, this model provides an opportunity to explore the potential for flood risk 50-100 years out and identify critical infrastructure for protection before the need arises. It is our suggestion that the TAC and Commission consider submitting a grant application to include the following activities:

1. In recent discussions with the State Climatologist and with Hennepin County previously while working on similar resiliency assessment for Minnehaha Creek, it seems a reasonable proxy for the 2050-2060 critical event is the 90th percentile Atlas 14 precipitation depth, or the 500 year event depth, which in many cases is very close to the 90th percentile. Conduct additional model runs using the selected depth and map the resulting flood risk areas.
2. Use GIS and field surveys to identify critical public and private infrastructure that could be impacted with an emphasis on structures, crossings, and road flooding. Prioritize the list based on impacts to public health and safety and identify potential improvements to increase resiliency.
3. Develop policy and technical guidance to guide development or redevelopment in those areas.

Our back of the envelope estimate is about \$25,000 to complete this work. The grant program requires a 10% match, so the Commission's investment would be about \$2,500. Funding would be available in spring 2022 and run through June 2023.

This grant prioritizes (but is not limited to) communities with higher concentrations of low-income residents, people of color and non-English speakers, including tribal communities. Much of the lower watershed includes large parts of Minneapolis, Brooklyn Center, Brooklyn Park, Robbinsdale, Crystal, and New Hope are located in these MPCA-identified areas for Environmental Justice.