

A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for 8:30 a.m., Thursday, May 26, 2016, at Crystal City Hall, 4141 Douglas Drive North, Crystal, MN.

A G E N D A

Meeting docs (*) are posted on the website at
<http://www.shinglecreek.org/tac-meetings.html>

1. Approve agenda.*

2. Approve Minutes of April 28, 2016 meeting.*

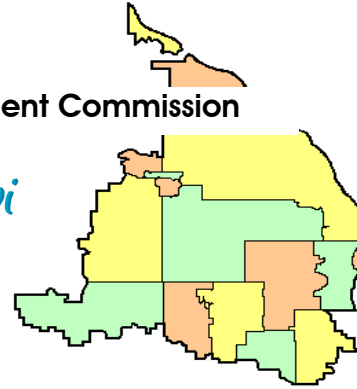
3. Final Review – Crystal Lake TMDL 5-Year Review. *

4. Bass-Schmidt-Pomerleau Lakes TMDL – 5 Year Review.*
 - a. Updated modeling.
 - b. Revised allocations.
 - c. Potential implementation strategies.

5. Update on Grant Projects.
 - a. Connections at Shingle Creek.
 - b. Public Art Reaeration Structures.
 - c. Iron/Biochar Enhanced Sand Filters.
 - d. Twin Lake Carp Management.

6. Other business.

7. Next Meeting _____



MINUTES

April 28, 2016

A meeting of the Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions was called to order by Chairman Richard McCoy at 8:34 a.m., Thursday, April 28, 2016, at Crystal City Hall, 4141 Douglas Drive North, Crystal, MN.

Present were: Andrew Hogg, Brooklyn Center; Jesse Struve, Brooklyn Park; Mark Ray, Crystal; Rick Lestina, Maple Grove; Bob Paschke, New Hope; Ben Scharenbroich, Plymouth; Richard McCoy, Robbinsdale; Ed Matthiesen and Diane Spector, Wenck Associates, Inc.; and Judie Anderson, JASS.

Not represented: Champlin, Minneapolis, and Osseo.

- I. Motion by Scharenbroich, second by Hogg to approve the **agenda**.* *Motion carried unanimously.*

[Ray arrived 8:35 am.]

- II. Motion by Scharenbroich, second by Hogg to approve the **minutes of the March 24, 2016 meeting**.* *Motion carried unanimously.*

[Lestina arrived 8:43 am.]

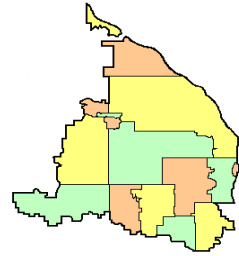
III. Potential Revisions to Rules and Standards.

Several items were discussed by the Commissions at their March 10, 2016 meetings. The Commissions have asked this group to discuss these potential revisions and make recommendations for any rules and standards changes.

A. Drinking Water Protection. The Commissions' rules and standards prohibit infiltration within the one year time-of-travel zone of any drinking water well. This is very broad and in some cases infiltration of runoff from certain types of impervious may be allowable. We've been working with some other WMOs to refine those definitions. In Staff's April 25, 2016 memo* is a diagram Matthiesen developed based on his discussions with local, state and EPA officials. The concept is to create zones around municipal drinking water wells based on modeling completed for the local Wellhead Protection Plans. Infiltration would be prohibited in the zone closest to the well, with infiltration limitations becoming less restrictive the further away from the well. A second figure shows the location of municipal Emergency Response Areas (ERAs) and Drinking Water Supply Management Areas (DWSMAs) across the Shingle Creek and West Mississippi watersheds as of September 2014. Many of these areas are being remodeled as cities are updating their Wellhead Protection Plans. In some cases, the DWSMAs have changed considerably. Included in the meeting packet is a set of figures* from the City of Brooklyn Center showing the remodeled zones and how they compare between the old and the new.

The members considered the following:

1. Is this something we want to consider?
2. Does it seem workable and fit in with your other WHP responsibilities?



3. Since so much of Shingle Creek is within a DWSMA, for administrative ease should the whole watershed outside the ERAs be treated as a Zone C?
4. How should DWSMA vulnerability be taken into account?
5. What other concerns do you have?

There was a consensus to have one standard across both watersheds rather than just within wellhead protection areas.

Query: What contaminants are we looking at? Which are of most concern? Does our augmented section do that? Salt, bacteria, phosphorus, PCBs.

Matthiesen will look at sand profiles vs. other soil profiles.

This topic will come back to the TAC at their May 26 meeting.

B. Sidewalks and Trails. Linear projects such as sidewalks and trails do not lend themselves well to traditional bioinfiltration BMPs to accomplish the 1.3” of infiltration needed to meet water quality and infiltration requirements. These linear projects are typically sloped to sheetflow runoff to the boulevard or shoulders of the trails. Included in Staff’s memo was a preliminary standard that would allow the applicant to meet that requirement by amending the soil receiving the sheetflow to a certain width depending on soil type.

It was noted that not all cities have adequate space to accommodate the desired width. Most indicated they would rather amend soils than search for right-of-way. The members asked Staff to determine whether the width of the infiltration area could be reduced with additional soil amendment. Staff was directed to bring back as a practice.

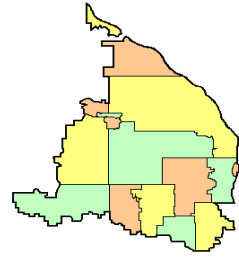
C. BMP Banking. At a previous TAC meeting the members discussed the subject of BMP banking. For example, a City has an opportunity to install a BMP with a project that would not require it, or that would go above and beyond what the Commission requires. Can they “bank” that extra treatment capacity to be used on a future project where treatment is required but infeasible? This would be similar to wetland banking.

Questions to consider:

1. Is this feasible?
2. Under what circumstances would it be allowable?
3. Should the use of credits be limited to projects draining to the same receiving water?
4. How it would be documented?

The members were amenable to this practice as long as the banking occurs in the same drainage area.

D. Sump Sizing Standardization. Staff discussed establishing sizing standards for sump manholes based on the model SHSAM and on a method set forth by the EPA. The members also discussed methods that can reduce the overall size of the sump by incorporating hydrodynamic separation. Two economical options are SAFL Baffle (<http://upstreamtechnologies.us/products/safl-baffle>) or The Preserver™ (<http://www.momentumenv.com>), both of which have design guidelines for optimal water quality treatment. Staff will return with a written standard sizing procedure for the TAC to review.



IV. Grant Updates.

A. Connections at Shingle Creek. Additional rock was brought in to stabilize the stream banks downstream of Monkey Falls. Tree removal has begun.

B. Public Art Reaeration Project. Thirty artists met last week to learn about the public art phase of this project. The RFP will go out on May 17.

C. Iron/Biochar Enhanced Sand Filters Project. Discussion about installation will begin in a month.

D. McCoy informed the members that the permit for the **Crystal Lake Flocculation project** is in the process of being renewed. Certain permitting values are being reviewed.

V. Other Business.

The **next meeting** is scheduled for May 26, 2016 at 8:30 a.m. at Crystal City Hall.

The meeting was adjourned at 9:53 a.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary

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Technical Memo



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To: Shingle Creek/West Mississippi WMO Technical Advisory Committee

From: Ed Matthiesen, P.E.
Diane Spector
Jeff Strom

Date: May 20, 2016

Subject: TMDL 5 Year Reviews
Final Review Crystal Lake TMDL 5 Year Review
Preliminary Bass, Schmidt, and Pomerleau Lakes TMDL 5-Year Review

Recommended TAC Actions

1. Review the final draft Crystal Lake TMDL 5 Year Review and make recommendation to Commission for acceptance.
2. Discuss the preliminary findings of the Bass Lake chain TMDL review.

Crystal Lake TMDL 5 Year Review

The final draft of the Crystal Lake 5 Year Review can be found on the Commissions' website at shinglecreek.org/technical-advisory-committee.html. This review has been previously discussed by the TAC. The draft report has been updated to reflect the 2015 flocculation plant removals. It is estimated that about 53 pounds of the required 256 pound annual load reduction from the watershed has been achieved, and on average 178 pounds of the required 255 pound annual internal load reduction has been achieved. The recommended implementation actions for the coming five years include:

- ▲ Continue to implement watershed BMPs as opportunities arise.
- ▲ Target the flocculation plant treatment to hypolimnetic withdrawals to maximize annual internal load reduction.
- ▲ Work with the DNR to get an updated fish survey, and as water clarity improves, to develop a vegetation management plan to address any invasive aquatic vegetation should it occur.

Bass, Schmidt, and Pomerleau Lakes TMDL 5 Year Review

We have updated the lake response models to incorporate the Bass Lake inflow data collected by the City of Plymouth, and measured sediment release rates from sediment cores and lake water quality data for all three lakes taken since the TMDL was completed (the TMDL used 1999 and 2001 data). Attached to this memo are the updated model results and the resulting potential revisions to the WLA and LA load reductions. For both Bass and Pomerleau Lakes, the updated models suggest that internal load is more of an issue than what the TMDL assumed. At the meeting we will walk through the data and models and discuss implementation strategies.

Schmidt Lake allocations and reductions from original TMDL study

		Existing TP Load	Allowable TP Load	Estimated Load Reduction	
		lbs/yr	lbs/yr	lbs/yr	%
Wasteload	Total WLA	103	93	10	10%
	Watershed MS4	103	93	10	10%
Load	Total LA	21	20	1	5%
	Atmospheric	9	9	0.00	0%
	Internal Load	12	11	1	9%
MOS		--	--	--	--
Total Load		124	113	11	9%

Updated (2016) Schmidt Lake allocations and reductions

		Existing TP Load	Allowable TP Load	Estimated Load Reduction	
		lbs/yr	lbs/yr	lbs/yr	%
Wasteload	Total WLA	163	163	0	0%
	Watershed MS4	163	163	0	0%
Load	Total LA	96	96	0	0%
	Atmospheric	9	9	0	0%
	Internal Load	87	87	0	0%
MOS		--	--	--	--
Total Load		259	259	0	0%

Note: lake is currently meeting TP water quality standards, so no load reductions required at this time.

Pomerleau Lake allocations and reductions from original TMDL study

		Existing TP Load	Allowable TP Load	Estimated Load Reduction	
		lbs/yr	lbs/yr	lbs/yr	%
Wasteload	Total WLA	174	52	122	70%
	Watershed MS4	174	52	122	70%
Load	Total LA	36	16	20	56%
	Atmospheric	7	7	0	0%
	Internal Load	29	9	20	69%
MOS		--	--	--	--
Total Load		210	68	142	67%

Updated (2016) Pomerleau Lake allocations and reductions

		Existing TP Load	Allowable TP Load	Estimated Load Reduction	
		lbs/yr	lbs/yr	lbs/yr	%
Wasteload	Total WLA	142	57	85	60%
	Watershed MS4	142	57	85	60%
Load	Total LA	149	19	130	87%
	Atmospheric	7	7	0	0%
	Internal Load	142	12	130	92%
MOS		--	--	--	--
Total Load		301	76	215	71%

Bass Lake allocations and reductions from original TMDL study

		Existing TP Load	Allowable TP Load	Estimated Load Reduction	
		lbs/yr	lbs/yr	lbs/yr	%
Wasteload	Total WLA	1,395	904	491	35%
	Watershed MS4	1,279	826	453	35%
	Upstream Lakes	116	78	38	33%
Load	Total LA	48	48	0	0%
	Atmospheric	46	46	0	0%
	Internal Load	2	2	0	0%
MOS		--	--	--	--
Total Load		1,443	952	491	34%

Updated (2016) Bass Lake allocations and reductions

		Existing TP Load	Allowable TP Load	Estimated Load Reduction	
		lbs/yr	lbs/yr	lbs/yr	%
Wasteload	Total WLA	1,719	1,423	296	17%
	Watershed MS4	1,622	1,367	255	16%
	Upstream Lakes	97	56	41	43%
Load	Total LA	521	75	446	86%
	Atmospheric	42	42	0	0%
	Internal Load	479	33	446	93%
MOS		--	--	--	--
Total Load		2,240	1,498	742	33%